Appendix A
Scoping

San Bernardino County
Land Use Services Department
Planning Division
385 North Arrowhead Avenue, 1st Floor • San Bernardino, CA 92415
Phone Number: (909) 387-8311 Fax Number: (909) 387-3223

NOTICE OF PREPARATION

FROM: San Bernardino County Land Use Services Department
385 North Arrowhead Avenue, First Floor
San Bernardino, CA 92415-0187

TO: Interested Agencies, Organizations, and Individuals

DATE: March 24, 2016

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

The County of San Bernardino (County), as the Lead Agency under the California Environmental Quality Act (CEQA), will be coordinating the preparation of an Environmental Impact Report (EIR) for the proposed Bloomington Industrial Warehouse Project. The County is requesting identification of environmental issues and information that you or your organization believes should be considered in the EIR.

Project Title: Western Realco Bloomington Facility

Project Applicant: Western Realco, LLC

Assessor's Parcel Number(s): 0257-081-07, 0257-091-07, 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, and 33

Project Location: The Project site is located in unincorporated San Bernardino County within the community of Bloomington, just north of the San Bernardino and Riverside County line. Nearby cities include Fontana to the west, Rialto to the east, and Jurupa Valley to the south. The Project site is located approximately 1.5 miles south of Interstate 10 (I-10), immediately west of Cedar Avenue, north of Jurupa Avenue, and east of Linden Avenue. The Project Site is approximately 34.54 acres in size.

The Project site is comprised of 17 existing parcels, most of which are privately owned; however, four (4) parcels are publicly owned by the San Bernardino County: Flood Control District (SBCFCD) (APN 0257-081-07, 0257-091-12, and 0257-091-24), and one parcel is owned by the Bloomington Recreation and Parks District (Parks District) (APN 0257-091-15). The SBCFCD parcels represent an approximately 25-foot wide easement that runs through the center of the Project site from the northern Project boundary, trending slightly easterly through to the southern Project boundary. The Parks District parcel is located at 18604 Jurupa Avenue, near the south-central portion of the Project site along Jurupa Avenue, and is approximately 0.3 acres in size.

Project Description: The proposed Project is comprised of the following elements:

1. General Plan Amendment to change the existing land use designation from Bloomington/Residential 1-acre minimum lot size-additional agricultural overly (BL/RS-1AA) and Bloomington/Institutional (BL/IN) to Bloomington/Industrial (BL/IC) on approximately 34.54 acres;
2. Approval of Tentative Parcel Map 19635 to combine the existing 17 parcels into one lot on 34.54 acres; and
3. Conditional Use Permit (CUP) to construct a 676,983-square-foot (ft^2) industrial warehouse building and associated facilities and improvements.

The Project Applicant proposes to construct a single 676,983 ft2 distribution building within an approximately 34.54-acre property, with associated facilities and improvements such as a guard booth, parking, bicycle racks, landscaping and detention basins. All existing structures on the Project site would be demolished prior to Project construction.

Two detention basins would be located near the Project's southern boundary along Cedar Avenue and Jurupa Avenue. Landscaping would be provided and would represent approximately 15 percent of the site coverage. There would be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. All parking and site paving would be concrete and asphalt, and would represent approximately 38 percent of the site coverage. Truck access would be from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, four (4) grade level ramps, and 110 dock high doors.

The existing SBCFCD parcels are linear parcels that bifurcate the middle of the Project site. These parcels are intended to support future flood control improvements associated with a railroad drainage master plan, to accept/convey drainage from the rail use to the north. This alignment would be abandoned in favor of one which would direct future flows east along the northern Project boundary and south along Cedar Avenue. The Project would dedicate the easement to SBCFCD to facilitate future drainage improvements.

Potential Environmental Effects: An EIR will be prepared to evaluate the proposed Project's environmental impacts and analyze project alternatives. The topic areas anticipated to be analyzed in detail in the EIR are Air Quality, Cultural Resources,

Greenhouse Gas Emissions, Hazards and Hazardous Materials, Land Use and Planning, Noise, and Traffic.

Public Review Period: March 24, 2016 through April 22, 2016

Responses and Comments: Please send your responses and comments by Friday, April 22, 2016 to Kevin White, Senior Planner at Kevin.White@lus.sbcounty.gov or at the following address:

Kevin White, Senior Planner
County of San Bernardino
Land Use Services Department – Planning Division
385 North Arrowhead Avenue, First Floor
San Bernardino, CA 92415-0187

Scoping Meeting: The County will hold a scoping meeting for the project to receive comments on the scope and content of the EIR. You are welcome to attend the scoping meeting and present environmental information that you believe should be considered in the EIR. The scoping meeting is scheduled as follows:

Date: Tuesday April 5, 2016
Time: 6:00 pm
Place: Bloomington Senior Center
18313 Valley Blvd.
Bloomington, CA 92316

Agencies: In accordance with California Code Regulations, Title 14, Section 15082 (b), the County requests your agency's view on the scope and content of the environmental information relevant to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by the County when considering any permits that your agency must issue, or other approval for the project.

Document Availability:

Notice of Preparation
This Notice of Preparation can be viewed on the County of San Bernardino website at: http://cms.sbcounty.gov/lus/Planning/Environmental/Valley.aspx. The documents are also available during regular business hours at:

- County of San Bernardino Land Use Services Department, Planning Division, 385 North Arrowhead Avenue, San Bernardino, CA 92415; between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

- Bloomington Branch Library, 993 West Valley Blvd. Suite 102, Bloomington, CA 92315; (909) 820-0533; Library Hours: Monday – Wednesday 11:00 a.m. to 7:00 p.m., Thursday 10:00 a.m. to 6:00 p.m., Saturday 9:00 a.m. to 5:00 p.m. This branch is closed Friday and Sunday.

Initial Study

An Initial Study is being prepared for this Project and will be available at the locations listed above beginning on March 24, 2016.

If you require additional information please contact Kevin White, Senior Planner, at (909) 387-3067.

Initial Study

Western Realco Bloomington Facility

Prepared For:

San Bernardino County Land Use Services Department

385 North Arrowhead Avenue, First Floor

San Bernardino, CA 92415-0187

Prepared By:

Michael Baker International

3536 Concours, Suite 100

Ontario, CA 91764

March 2016

JN 151073

SAN BERNARDINO COUNTY
INITIAL STUDY ENVIRONMENTAL CHECKLIST FORM

This form and the descriptive information in the application package constitute the contents of Initial Study pursuant to County Guidelines under Ordinance 3040 and Section 15063 of the State CEQA Guidelines.

PROJECT LABEL:

APNs:	0257-081-07, 0257-091-07, 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, and 33		
Applicant:	Western Realco, LLC	***USGS Quad:***	U.S. Geological Survey (USGS) 7.5 minute map Fontana quadrangle
Community:	Unincorporated Community of Bloomington	***T, R, Section:***	Township 1 South, Range 5 West, Section 27
Location:	North of Jurupa Ave, East of Linden Ave, and West of Cedar Ave.	***Thomas Bros.:***	-
Project No:	P201500122	***Specific Plan:***	Not applicable
Staff:	Kevin White	***OLUD:***	BL/RS-1-AA, BL/IN
Rep('s):	Michael Baker International (Michael Baker)		
Proposal:	General Plan Land Use Amendment, Conditional Use Permit, and Tentative Parcel Map 19635 to create one (1) lot on 34.54 acres.	**Overlays:**	Additional Agriculture overlay

PROJECT CONTACT INFORMATION:

Lead agency:	County of San Bernardino Land Use Services Department – Planning Division 385 North Arrowhead Avenue San Bernardino, CA 92415-0182		
Contact person:	Kevin White, Senior Planner		
Phone No:	(909) 387-3067	***Fax No:***	(909) 387-3223
E-mail:	Kevin.White@lus.sbcounty.gov		
Project Sponsor:	Western Realco Bloomington Facility		
Consultant:	Michael Baker International (Michael Baker)		

ENVIRONMENTAL/EXISTING SITE CONDITIONS:

The Project site is located in unincorporated San Bernardino County within the community of Bloomington, in between the cities of Rialto and Fontana, just north of the San Bernardino and Riverside County line. Nearby cities include Fontana to the west, Rialto to the east and Jurupa Valley to the south. The Project site is located approximately 1.5 miles south of Interstate 10 (I-10), immediately west of Cedar Avenue, north of Jurupa Avenue, and east of Linden Avenue. The Project site is approximately 34.5 acres in size. Most of the southern portion of the Project site is vacant and has a levelled surface, with the exception of three existing structures. Two of the existing structures are adjacent to Jurupa Avenue; one is a recreation center, and the other is a residence. The third structure is a residence that is adjacent to Cedar Avenue. The northern portion of the Project site is a mix of low density residential and commercial/light industrial uses (e.g., scrap metal, truck/automobile yard).

The Project site is comprised of 17 existing parcels, most of which are privately owned; however, four (4) of the parcels are publicly owned by San Bernardino County: Flood Control District (SBCFCD) (APN 0257-081-07, 0257-091-12, and 0257-091-24), and one parcel is owned by the Bloomington Recreation and Parks District (Parks District) (APN 0257-091-15). The SBCFCD parcels represent an approximately 25-foot wide easement that runs through the center of the Project site from the northern Project boundary, trending slightly easterly through to the southern Project boundary. The Parks District parcel is located at 18604 Jurupa Avenue, near the south-central portion of the Project site along Jurupa Avenue, and is approximately 0.4 acres in size, and is the site of an existing recreation center.

Approval of Tentative Parcel Map 19635 is proposed as part of the Project to combine the existing parcels into one lot. The following APNs are included in the proposed Project site:

0257-081-07	0257-091-24
0257-091-07	0257-091-25
0257-091-11	0257-091-26
0257-091-12	0257-091-28
0257-091-14	0257-091-29
0257-091-15	0257-091-30
0257-091-19	0257-091-32
0257-091-20	0257-091-33
0257-091-23	

Southern California Edison owns the parcel located to the southwest of the Project site near the intersection of Jurupa Ave and Linden Avenue, which is currently occupied by a substation. This parcel is not a part of the Project site, but is immediately adjacent. Surrounding land uses include a vacant lot, church, and residences to the north; medium density residences to the south; a parking lot, vacant land, and residences to the east; and commercial/light industrial uses and residences to the west. Walter Zimmerman Elementary School is located at 11050 Linden Avenue, to the immediate northwest of the Project site, and Kessler Park is located on the corner of Jurupa Avenue and Linden Avenue, to the immediate southwest of the Project site.

The existing land use designation for the Project site is Bloomington/Residential 1 Acre Minimum lot size-additional agricultural overlay (BL/RS-1AA) and Bloomington/Institutional (BL/IN). Approval of a General Plan Amendment is proposed as part of the Project, which would change the existing land use designation to Bloomington/Industrial (BL/IC).

AREA	EXISTING LAND USE	OFFICIAL LAND USE DISTRICT
SITE	Western Realco Bloomington Warehouse Project, Commercial/Residential mix of uses	Bloomington/Single Residential- 1 Acre Minimum-Additional Agriculture (BL/RS-1-AA), and Bloomington/Institutional (BL/IN)
North	Vacant Land, Church and Single Residential	Bloomington/Single Residential- 1 Acre Minimum-Additional Agriculture (BL/RS-1-AA)
South	Single Residential	Bloomington/General Commercial-Sign Control Primary (BL/CG) and Bloomington/Single Residential (BL/RS)
East	Industrial and Single Residential	Bloomington/Single Residential- 1 Acre Minimum-Additional Agriculture (BL/RS-1-AA)
West	Single Residential, SCE Electrical Substation	Bloomington/Single Residential- 1 Acre Minimum-Additional Agriculture (BL/RS-1-AA), Bloomington/Institutional (BL/IN)

APPROVALS:

The County of San Bernardino, as Lead Agency, has discretionary authority over the Project. The Project is also subject to the review and requirements of the County Departments listed below.

County of San Bernardino: Land Use Services – Planning, Code Enforcement; Building and Safety, Public Health-Environmental Health Services, Special Districts, Public Works, County Fire, and Flood Control District.

In order to implement this Project, the Applicant would need to obtain the following permits/approvals from the County, including, but not limited to: a General Plan Amendment, Tentative Parcel Map, and Conditional Use Permit, further described in the Project description below.

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.): State Water Resources Control Board – NPDES General Construction Permit.

PROJECT DESCRIPTION:

The proposed Project is comprised of the following elements:

1. General Plan Amendment to change the existing land use designation from Bloomington/Residential 1-acre minimum lot size-additional agricultural overly (BL/RS-1AA) and Bloomington/Institutional (BL/IN) to Bloomington/Industrial (BL/IC) on approximately 34.54 acres;
2. Approval of Tentative Parcel Map 19635 to combine the existing 17 parcels into one lot on 34.54 acres; and
3. Conditional Use Permit (CUP) to construct a 676,983-square-foot (ft^2) industrial warehouse building and associated facilities and improvements.

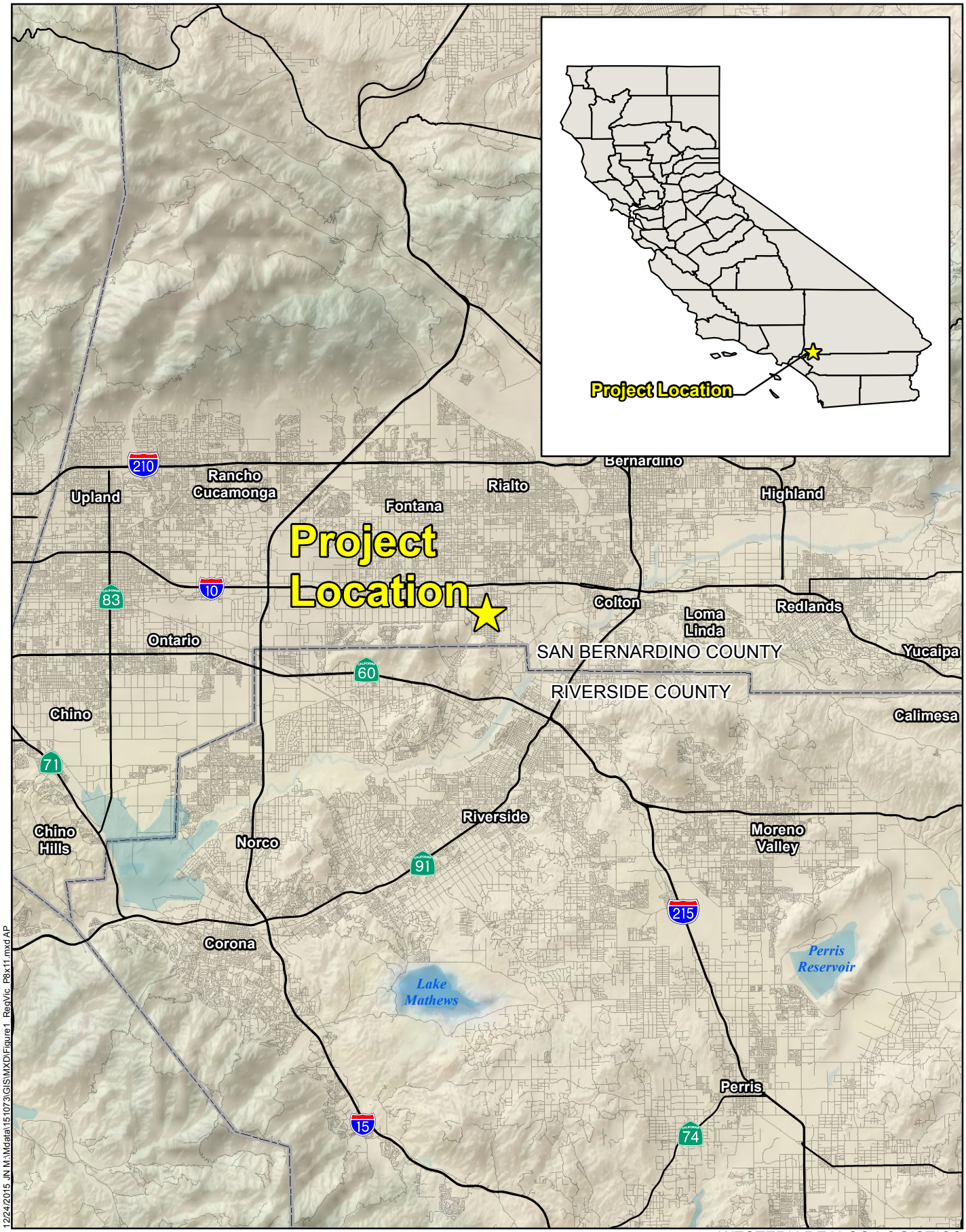
The Project Applicant proposes to construct a single 676,983 ft^2 distribution building within an approximately 34.54-acre property, with associated facilities and improvements such as a guard booth, parking, bicycle racks, landscaping and detention basins. All existing structures on the Project site would be demolished prior to Project construction.

Two detention basins would be located near the Project's southern boundary along Cedar Avenue and Jurupa Avenue. Landscaping would be provided and would represent approximately 15 percent of the site coverage. There would be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. All parking and site paving would be concrete and asphalt, and would represent approximately 38 percent of the site coverage. Truck access would be from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, four (4) grade level ramps, and 110 dock high doors.

The existing SBCFCD parcels are linear parcels that bifurcate the middle of the Project site as part of a flood control easement associated with a railroad drainage master plan to accept/convey drainage from the rail use to the north. While there are no existing flood control facilities on the Project site, the easement is intended to facilitate the development of future flood control improvements by setting aside an alignment for this future facility. In order to accommodate the Project, this alignment would be abandoned in favor of one which would direct future flows east along the northern Project boundary and south along Cedar Avenue. The Project would dedicate the easement to SBCFCD to facilitate the future drainage improvements.

Construction is anticipated to occur over a duration of approximately 10 months, commencing in the first half of 2017 and the facility would be operational in 2018.

This page intentionally left blank.



12/24/2015 JN M:\Mdata\151073\GIS\MXD\Figure1_RegVic_P8x11.mxd AP

WESTERN REALCO LOGISTICS
FOCUSED EIR FOR LOGISTICS PROJECT

Michael Baker INTERNATIONAL

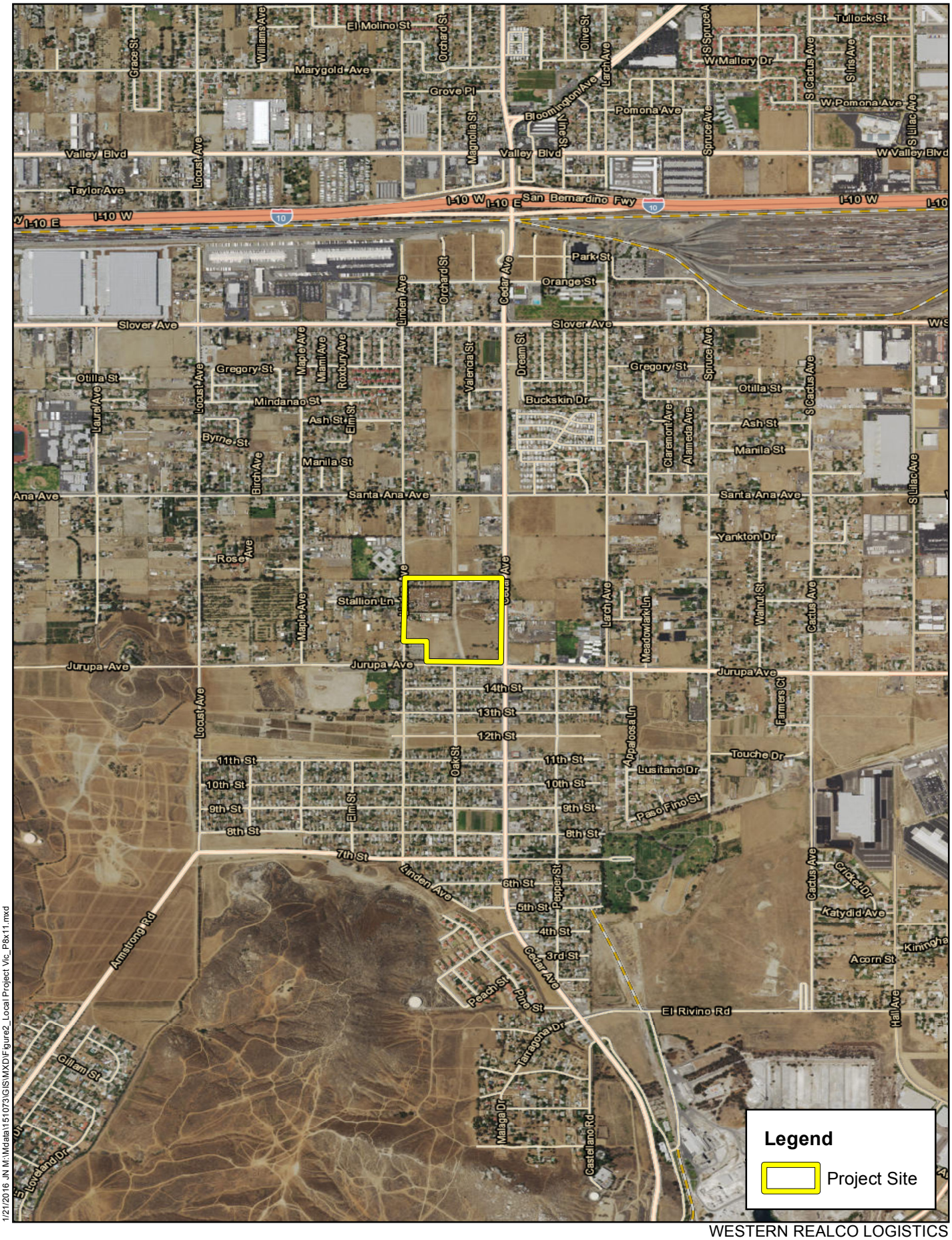
0 2.5 5 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1

This page intentionally left blank.



1/21/2016 JN M:\Mdata\151073\GIS\MXD\Figure2_Local Project Vic_P8x11.mxd

Michael Baker INTERNATIONAL

0 1,000 2,000 Feet

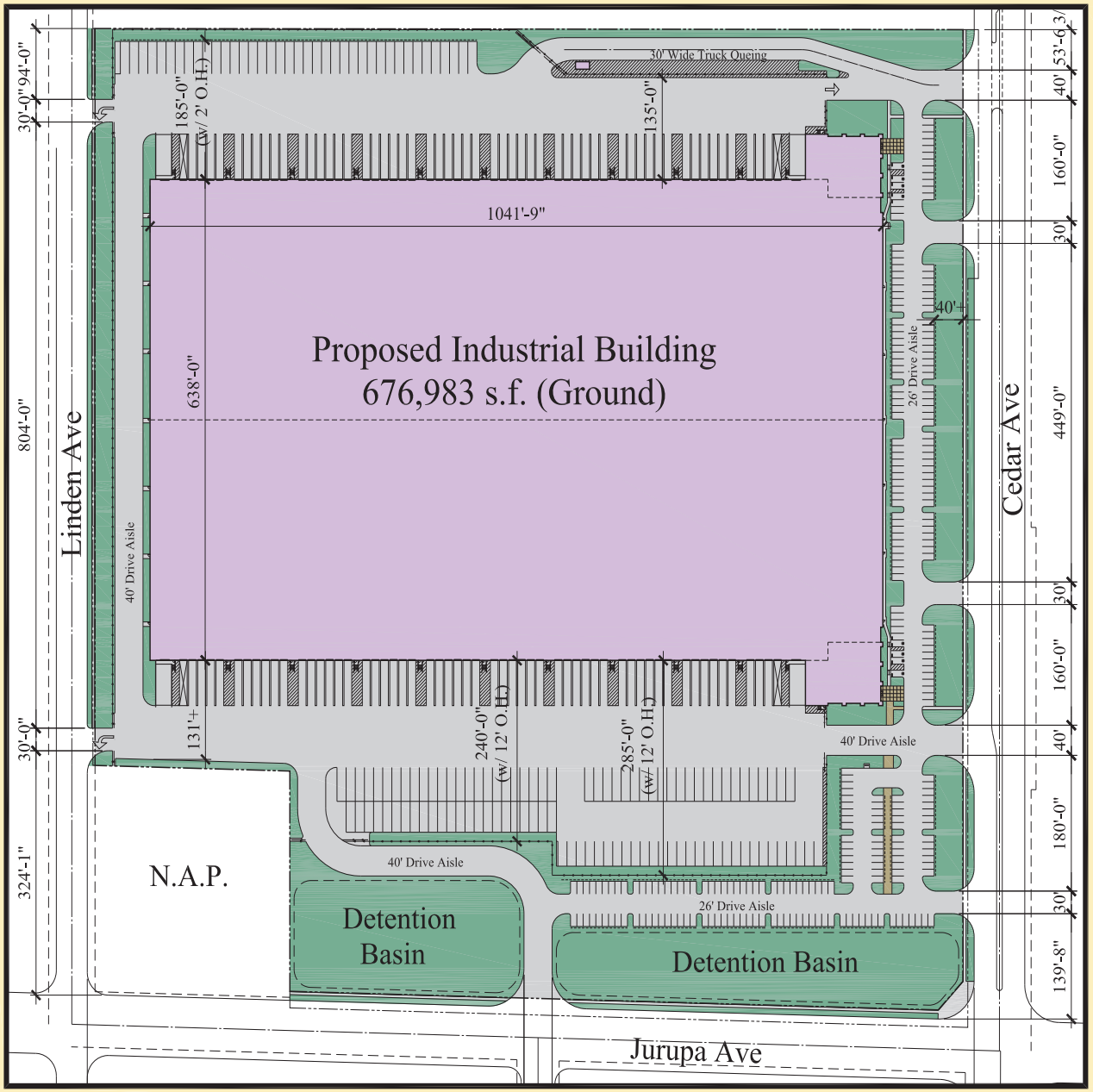
Source: San Bernardino County, ESRI

WESTERN REALCO LOGISTICS
FOCUSED EIR FOR LOGISTICS PROJECT

Local Vicinity

Exhibit 2

This page intentionally left blank.



Site Plan Summary

Gross Site Area (To Original Property Lines)	(35.43 Acres)	1,543,291 s.f.
Gross Site Area (To Ultmate Right of Way)	(34.54 Acres)	1,504,407 s.f.
Total Building Area (Ground Floor)		676,983 s.f.
Site Coverage to Ultimate R.O.W. (.45 Max F.A.R)		45.00%
Parking Required (IC Zoning)		271 Spaces
Office	(19,000 s.f. / 1/250)	76 Spaces
WH	(40,000 s.f. / 1/1,000)	40 Spaces
WH	(617,983 s.f. / 1/4,000)	155 Spaces
Parking Provided		272 Spaces
Dock Yard		110 Dock High Doors 4 Grade Level Doors 138 Trailer Storage Stalls
Landscape Provided (15% Required)		17%

Key Notes

1. Approx. Extent of Future Office Area - Typ. ("X" Designates Future 2nd Floor Area)
2. Shaded Area Represents Landscaping - Typ.
3. Enhanced Hardscape Located at Building Entries
4. Dock Door Designated as Future Trash Compactor Location
5. Exterior Concrete Stairs and Painted Metal Railings - Typ
6. Exterior Ramp Up to Ground Level Service Door - Typ.
7. Dock-High Loading Door - Typ
8. Fire Dept. Access Door, Typical, per Building Plans and Ext. Elevations.
9. Handicapped Parking with Accessible Path to Entry - Typ.
10. Security Fencing as Shown and Visual Screening as Required by Planning Department
11. Service Yard Rolling Security Gate Compatible with Note #10
12. Concrete Sidewalk - Natural Color with Medium Broom Finish
13. Grade Level Exit Door Connected to Accessible Path of Travel
14. Property Line per Civil Drawings
15. Typical Parking Stall: 9'x19' (or 9'x17' w/ 2' Overhang)
16. Potential Demising Wall
17. Proposed Opening in Existing Raised Median to allow Left Turn out of Site for Northbound Cedar Avenue
18. Recreation Center Parcel - Relocation T.B.D.
19. Potential Future Guard Booth
20. Bike Rack to Meet Code Requirement

General Notes

1. Site Plan Shall Meet All Engineering and NPDES Requirements.
2. All Lighting Shall Conform with the Municipal Standards
3. All Signage Shall Conform with the Municipal Standards

Project Directory

DEVELOPER/APPLICANT:	ARCHITECT:	LANDSCAPE:	CIVIL:
WESTERN REALCO, LLC	BASTIEN AND ASSOCIATES, INC.	EMERALD DESIGN	THIENES ENGINEERING
500 Newport Center Drive, Suite 630	15661 Red Hill Avenue, Suite 150	305 N. Harbor Blvd., Suite 222	14349 Firestone Blvd.
Newport Beach, California 92660	Tustin, California 92780	Fullerton, CA 92832	La Mirada, CA 90638
Telephone: 949 720 3787	Telephone: 714.617.8600	Telephone: 714 680 0417	Telephone: 714 521 4811
Contact: Jeremy Mape, Gary Edwards	Contact: Mike McAndrew	Contact: Charles Lamb	Contact: Brian Thienes

Legend

- Property Line (Current)
- Top of Slope (Detension Basin)
- Potential Interior Wall Location
- Fencing
- Parking Overhang (24")
- Solid Hatch Represents Landscape Area
- Shade Represents On-Site Hardscape Materials (Concrete or Ashpalt Paving)
- Diagonal Hatch Represents Painted Stripes
- Dark Shade Represents Enhanced Hardscape Materials per Keynote 3

North

CONCEPTUAL SITE PLAN

0 60 120 180 240

Scale: 1" = 60'-0"

12/24/2015 JN M:\Mdata\151073\GIS\MXD\Figure3_Proposed Site Plan_P8x11.mxd

Michael Baker INTERNATIONAL

Source: Technical Noise Report, Western Realco 2015

WESTERN REALCO LOGISTICS
FOCUSED EIR FOR LOGISTICS PROJECT

Project Site Plan

Figure 3

This page intentionally left blank.

EVALUATION FORMAT

This initial study is prepared in compliance with the California Environmental Quality Act (CEQA) pursuant to Public Resources Code Section 21000, et seq. and the State CEQA Guidelines (California Code of Regulations Section 15000, et seq.). Specifically, the preparation of an Initial Study is guided by Section 15063 of the State CEQA Guidelines. This format of the study is presented as follows. The project is evaluated based upon its effect on seventeen (17) major categories of environmental factors. Each factor is reviewed by responding to a series of questions regarding the impact of the project on each element of the overall factor. The Initial Study Checklist provides a formatted analysis that provides a determination of the effect of the project on the factor and its elements. The effect of the project is categorized into one of the following four categories of possible determinations:

Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant	No Impact

Substantiation is then provided to justify each determination. One of the four following conclusions is then provided as a summary of the analysis for each of the major environmental factors.

1. **No Impact**: No impacts are identified or anticipated and no mitigation measures are required.
2. **Less than Significant Impact**: No significant adverse impacts are identified or anticipated and no mitigation measures are required.
3. **Less than Significant Impact with Mitigation Incorporated**: Possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are: (List of mitigation measures)
4. **Potentially Significant Impact**: Significant adverse impacts have been identified or anticipated. An Environmental Impact Report (EIR) is required to evaluate these impacts, which are (List of the impacts requiring analysis within the EIR).

At the end of the analysis the required mitigation measures are restated and categorized as being either self-monitoring or as requiring a Mitigation Monitoring and Reporting Program.

This page intentionally left blank.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Geology / Soils
☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☒ Land Use/ Planning	☐ Mineral Resources	☒ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☒ Transportation / Traffic	☐ Utilities / Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation, the following finding is made:

☐	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION shall be prepared.
☐	Although the proposed project could have a significant effect on the environment, there shall not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION shall be prepared.
☒	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: prepared by Kevin White, Senior Planner

3/22/16
Date

This page intentionally left blank.

I. AESTHETICS

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

SUBSTANTIATION: *(Check ☒ if project is located within the view-shed of any Scenic Route listed in the General Plan):*

a) **Less than Significant Impact.** Cedar Avenue has been designated as a County Scenic Route from Bloomington Avenue to the Riverside County line, as described in the Bloomington Community Plan (San Bernardino County 2007a). A portion of this road segment is adjacent to the Project site. The basis for this designation is not identified in the Community Plan, however, based on criteria in the County's General Plan (San Bernardino County 2007b), the designation is most likely related to views of the Rubidoux/Jurupa Hills south of the Project site:

- Offers a distant vista that provides relieve from less attractive views of nearby features (such as view of mountain backdrops from urban areas (Open Space Policy 5.1).

The warehouse would be approximately 60 feet in height, and taller than the surrounding buildings. Within Community Industrial (IC) zones the maximum building height is 75 feet (County of San Bernardino, Land Use Element Table LU-1 2007). With the implementation of the proposed zone change from Bloomington/Residential 1 Acre Minimum lot size-additional agricultural overlay (BL/RS-1AA) and Bloomington/Institutional (BL/IN) to Bloomington/Industrial (BL/IC), the Project would be consistent with the allowed building height. Along Cedar Avenue, the future warehouse building would be set back over 100 feet from the existing right-of-way. As the Project would also include the dedication of 22 feet of additional right-of-way for Cedar Avenue, the Project would still provide over 75 feet of setback along this corridor. As a result, the Project would not block views of the hill/mountain backdrops viewed from Cedar Avenue, and the Project would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

b) **No Impact.** Potential scenic resources associated with the Project site include mature trees and historic age structures (see Cultural Resources). There are no rock outcroppings associated with the site. The California Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from changes and development that would diminish the aesthetic value of lands adjacent to highways. No facilities within the Community Plan area are eligible for designation as a scenic route under the California Scenic Highway Program (San Bernardino County 2007a). Therefore, the Project does not have the potential to substantially damage scenic resources,

such as trees, rock outcroppings, and historic buildings associated with a state scenic highway. There would be no impacts related to a state scenic highway.

c) **Less than Significant Impact.** The Project site is generally level with portions developed and other areas previously graded/disturbed. The southern half of the Project site is predominantly characterized by previously graded, but undeveloped land; interspersed with three disparate structures: a small recreation center, and two residences; and power lines. Views of the undeveloped areas are expansive, owing to the lack of topography, vegetation or other visual features. Developed properties are generally fenced with chain link fencing, and feature ornamental trees. The recreation center is characterized by residential architecture, block and iron fencing, paved parking areas, and minimal landscaping along the Jurupa Avenue frontage.

The northern half of the site is a mix of low density residential and commercial/light industrial uses (e.g., scrap metal, truck/automobile yard, junk yard) on large parcels and is more fully developed compared to the southern half of the Project site.

Southern California Edison operates a substation southwest near the intersection of Jurupa Ave and Linden Avenue, and is a dominant visual feature adjacent to the Project site. The existing SBCFD easement is composed of a graded and gated access road bifurcating the Project site in a north-south direction. Adjacent roads are paved and striped but do not feature curbs, sidewalks or medians, contribution to a rural aesthetic.

Surrounding land uses include a vacant lot, church, and residences to the north; medium density residences to the south; a parking lot, vacant land, and residences to the east; and commercial/light industrial uses and residences to the west. South of the Project site, the Rubidoux hills can be appreciated.

The Project would replace the undeveloped, and disparate land uses with a single-unified development centered on a warehouse facility. The dominant visual features would include the building and associated features such as parking, landscaping, and detention basins. In addition, the Project would provide right-of-way and develop half width street improvements along the Project's frontage of Cedar Avenue and Jurupa Avenue, including curbs, sidewalks, and medians in some locations. The resulting aesthetic would be more organized, unified and urban, compared to the existing conditions. While the Project will markedly change the visual quality of the Project site, it would not degrade the existing visual character or quality of the site or surroundings. Impacts would be less than significant.

d) **Less than Significant Impact.** The existing Project site lighting sources are emitted from single family residential and small scale commercial uses. One of the primary concerns of the Bloomington Community is the lack of adequate street lights (Bloomington Community Plan, Circulation and Infrastructure 2007). There are no light sensitive uses immediately adjacent to the Project site, however, there are residences across the street from the Project to the east, west, and south. The Project would involve lighting throughout the site that would be implemented in accordance with County design standards. San Bernardino County Ordinance No. 3900 regulates glare, outdoor lighting, and night sky protection. The Ordinance provides that Commercial or industrial lighting shall be fully shielded in such a manner as to preclude light pollution or light trespass on any of the following: an abutting residential land use district; a residential lot; or public right-of-way. The Project would provide shielded lighting sufficient for security and safety, without nuisance to the adjacent properties. Any lighting from the site would not interfere with on-coming traffic on adjacent roadways such as Linden Ave, Cedar Ave, and Jurupa Ave. A professionally prepared outdoor lighting plan would be submitted to and subject to the County Planning Division's approval to confirm compliance with County

standards. Lighting direction and intensity would be developed to minimize impacts to roadways, adjacent neighbors, and minimize light pollution. Impacts would be less than significant.

This page intentionally left blank.

II. AGRICULTURE AND FORESTRY RESOURCES

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

SUBSTANTIATION: *(Check ☐ if project is located in the Important Farmlands Overlay):*

a) **No Impact.** Approximately 70% of the Project site is designated as Other Land, and 30% is designated as Urban and Built-up Land, based on the California Department of Conservation (DOC) farmland classifications (DOC 2016). Other Land is usually unsuitable for agriculture, or may support some agricultural use, but is surrounded by development, while Urban and Built-up Land is generally

developed. Therefore, the Project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impacts would occur.

b) **Less than Significant Impact.** Most of the Project site is designated for Bloomington/Residential-1 Acre minimum lot size-additional agricultural overlay (BL/RS-1AA) which allows for agricultural use. A small portion of the site is designated for Bloomington/Institutional (BL/IN). Current agricultural use is limited to approximately 7 acres of fenced grazing area used for llamas and goats. No Williamson Act contracts exist on any of the parcels that comprise the Project site. The Project would include a change in land use designation to Bloomington/Industrial (BL/IC) which would remove the Additional Agricultural Overlay. . Impacts would be less than significant because the existing zoning assumes the property to be developed with residences, and makes no requirement that any land is set aside for agricultural purposes. The Additional Agriculture Overlay is intended to create, preserve, and improve areas for small-scale and medium-scale agricultural uses utilizing productive agricultural lands for raising, some processing, and the sale of plant crops, animals, or their primary products. It is an overlay where agricultural uses exist compatibly with a variety of rural residential lifestyles. The development standards within this overlay are designed to allow properties to keep higher densities of animals on the property than would typically be allowed in a residential neighborhood. The Overlay is not intended to protect vital agricultural uses which are those properties within the County's Agricultural Preserve Overlay. Impacts would be less than significant.

c) **No Impact**. The Project site does not contain forest or timberland. Additionally, the Project site is not zoned as forest land. The Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). No impacts would occur.

d) **No Impact**. The Project would not result in the loss of forest land or conversion of forest land to non-forest use. The Project site is partially developed, it is not, and has not historically, been utilized as forest land. No impact would occur.

e) **Less than Significant Impact**. The Project site is partially developed with farming activities, which primarily include animal raising activities. The removal of this land is not considered significant because the land is not utilized for the cultivation of crops. Lands utilized for animal raising are not of regional or statewide significance because the qualities of the soil are not required to meet any specific requirements. The Project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as the Project does not have the soil quality, and moisture supply needed to produce economically sustained high yields of crops. A less than significant impact would occur.

III. AIR QUALITY

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Where available, the significance criteria established by the applicable air quality management or air pollution control district might be relied upon to make the following determinations. Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e)	Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

SUBSTANTIATION: *(Discuss conformity with the South Coast Air Quality Management Plan, if applicable):*

a) **Potentially Significant Impact**. The SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993, 2015), as supplemented in March 2015, sets forth quantitative emission significance thresholds below which a Project would not have a significant impact on ambient air quality (SCAQMD 2015). Based on preliminary analysis, the Project has the potential to exceed AQMD thresholds, and thus potentially conflict with regional air quality plan. Therefore, impacts are potentially be significant, and this topic will be further evaluated in an environmental impact report (EIR).

b) **Potentially Significant Impact**. Development of the Project would result in air pollutant emissions as a result of fugitive dust and construction equipment emissions. Based on specific evaluation of construction related emission, daily construction emissions would not exceed the SCAQMD significance thresholds for VOCs, NOx, CO, SOx, PM10, or PM2.5 during construction in any of the construction years. Furthermore, construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. In addition, the Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the demolition and other grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering the active sites. Construction of the Project would not exceed the SCAQMD threshold for VOCs, NOx, CO, SOx, PM10, or PM2.5 during construction in any of the construction years. Therefore, Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Project operation would result in employee vehicle trips, and truck trips that would result in vehicle related air pollutant emissions. On-site equipment and energy use would also result in air pollutant emissions. Based on preliminary analysis, the Project has the potential to exceed AQMD thresholds and result in significant air quality impacts. This topic will further be evaluated in an EIR.

c) **Potentially Significant Impact**. As discussed in b) above, activities as a result of Project operation would have the potential to exceed SCAQMD thresholds. The Project's potential to produce cumulatively considerable air pollutants will be further evaluated in an EIR.

d) **Potentially Significant Impact**. Sensitive receptors nearby the Project site include residences, elementary schools, and a church. Based on preliminary air quality analysis, it was determined that construction activities associated with the proposed Project would result in temporary sources of fugitive dust and construction vehicle emissions. Long-term operation of the Project would result in daily vehicular trips that would generate local emissions that could expose sensitive receptors to substantial pollutant concentrations. Impacts to sensitive receptors will be further evaluated. A health risk assessment of the emissions associated with toxic air contaminants (TACs), primarily diesel particulate matter from heavy-duty trucks will be performed to estimate the maximum cancer risks and chronic (long-term) hazard indices due to non-cancer health effects associated with diesel particulate matter. This topic will be further evaluated in an EIR.

e) **Potentially Significant Impact**. The Project's potential to create objectionable odors will be further evaluated in an EIR.

IV. BIOLOGICAL RESOURCES

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc…) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

SUBSTANTIATION: *(Check if project is located in the Biological Resources Overlay or contains habitat for any species listed in the California Natural Diversity Database ☐): Category N/A*

A biological investigation including a literature review and site visit was conducted for the Project site and the results summarized in a Technical Report (Dudek 2015a). The vegetative communities identified on the site are classified as followed: non-native grassland 6.5 acres, agricultural 7.0 acres, and developed/disturbed 21.3 acres. No special-status plant species were observed within the Project site. Due to high disturbance and lack of suitable habitat throughout the entire Project vicinity, there is no potential for special-status plant species to occur on site.

No special-status wildlife species were observed on site. However, there is some potential for burrowing owl, a California Species of Special Concern, to occur on-site due to the high amount of open space within and surrounding the Project site, as well as historical occurrences within one mile. The open fields have the potential to contain suitable burrows for burrowing and the ground surface is suitable nesting habitat for killdeer, a common bird. The site also contains forage habitat for raptors, and nesting and forage habitat for Cooper's hawk. The trees within the site and surrounding residential areas could potentially be used by migratory and non-migratory birds for breeding. In addition, numerous bird species could use nesting boxes found on the Project site.

a) **Less than Significant Impact with Mitigation Incorporated.** No special-status plant species were observed within the Project site. Due to high disturbance and lack of suitable habitat throughout the entire Project vicinity, there is no potential for special-status plant species to occur on site. Therefore, there are no anticipated occurrences of direct or indirect impacts to special-status plants as a result of the Project and no mitigation measures are required in this regard (Dudek 2015a).

Project development would include the conversion of potential forage and nesting habitat for burrowing owl and Cooper's hawk, including non-native grassland (6.5 acres) and agriculture (7 acres), and trees. Neither the non-native grassland, nor trees are considered sensitive habitat. Short-term impacts as a result of noise and dust are limited. Due to the limited habitat on site, and the ability of foraging birds to freely move to other available habitat impacts to foraging special status birds would be less than significant.

Project construction could result in direct impacts to nesting individuals including the loss of nests, eggs, and fledglings if tree removal, vegetation clearing and ground-disturbing activities occur during the nesting season (generally between February 1 and June 30). This impact is potentially significant because substantial direct impacts to individuals of designated special-status species, if present, could occur during a critical period of these species' life cycles and may result in reduced reproductive success. Potential impacts could occur to Cooper's hawk and burrowing owl. Implementation of the following mitigation measures would reduce impacts to special status species to less than significant:

MM-BIO-1 If construction activities are to take place during the avian nesting season breeding season (February 15 through August 31 for most bird species, and January 1 through August 31 for raptors), a pre-construction survey for nesting bird species, including raptors, shall be conducted within 7 days prior to vegetation removal. The survey will identify any active nesting by special-status birds on the Project site or within 500 feet of construction activities. If active nests of special-status birds are present in the impact area or within 500 feet of the edge of construction area, a qualified biologist shall prescribe avoidance measures including, but not limited to, establishing a construction buffer. The type of species, nesting stage, surround topography, existing conditions, and type of construction activity will determine the appropriate avoidance measures. Avoidance measures shall remain in place until the nest is no longer active as determined by a qualified biologist.

MM-BIO-2 A qualified biologist in accordance with the latest California Department of Fish and Wildlife (CDFW) survey guidelines will conduct a burrowing owl preconstruction survey within 30 days prior to ground-disturbance or noise producing activities. If burrowing owls occupy the site, then a mitigation plan shall be prepared, approved by CDFW, and implemented prior to initiation of ground-disturbance activities that may affect the burrowing owl on site. The mitigation plan will include methods for avoidance or relocation of the owl and details regarding the proposed relocation site.

b) **No Impact.** According to the biological investigation conducted for the Project site, there are no riparian areas or sensitive vegetation communities within or adjacent to the Project site. Therefore, the Project would not result in direct or indirect impacts to riparian areas or sensitive vegetation communities (Dudek 2015a). No impact would occur.

c) **No Impact.** According to the biological investigation conducted for the Project site, there are no wetlands or jurisdictional waters present on the Project site. Therefore, the Project would not result in direct or indirect impacts to jurisdictional waters. Due to the lack of waters under the jurisdiction of U.S. Army Corps of Engineers and CDFW, no additional coordination or application for permits with these agencies is required (Dudek 2015a). No impacts would occur.

d) **Less than Significant Impact with Mitigation Incorporated.** According to the biological investigation conducted for the Project site, there are no wildlife corridors within the Project site. Therefore, the Project would not have impacts to wildlife corridors. Project implementation would not interfere substantially with the movement of any native resident or migratory bird species, but the Project site has the potential to support nesting resident and migratory birds. As discussed in a) above, impacts to nesting birds will be mitigated to a less than significant with implementation of mitigation measures BIO-1 and BIO-2.

e) **No Impact.** According to the biological investigation conducted for the Project site, there are no species or habitat regulated by the County's Native Plant Protection Act within the Project site. There are no other local policies or ordinances with respect to biological resources that apply to the Project site (Dudek 2015a). Therefore, the Project is not in conflict with local policies or ordinances. No impact would occur.

f) **No Impact.** The Project site is not within a designated habitat conservation plan area; therefore, the Project is not in conflict with any habitat conservation plan. No impact would occur.

This page intentionally left blank.

V. CULTURAL RESOURCES

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
e)	Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined by Pub. Resources Code, §21074?	☒	☐	☐	☐

SUBSTANTIATION: *(Check if the project is located in the Cultural ☐ or Paleontologic ☐ Resources overlays or cite results of cultural resource review):*

a) **Potentially Significant Impact.** A Cultural Resources Study was conducted by for the Project site to determine the cultural resources present on the Project site and provide management recommendations (Dudek 2015b). The cultural investigation included a records search at the South Central Coastal Information Center (SCCIC), archival research, and a pedestrian survey of the Project site. The records and archival research identified the following sites within Project boundary:

- A prehistoric isolate (P-36-060213)
- Eight historic-era buildings
- The location of a previously existing the Pacific Electric Railway Line, Riverside-Rialto segment

Development of the Project would involve demolition of existing structures and grading of the Project site.

During the pedestrian survey, no evidence of the previously recorded isolate were found. However, adverse impacts to this resources are already mitigated by the documentation at the time of recording. Similarly no evidence of the former railway line were found. However, the location of the previously extant railway line is recommended not eligible for listing in the California Register of Historic Places (CRHP), as it is not a unique cultural resource under CEQA, and does not warrant further consideration.

Eight historic-era buildings were found to be present, but could not be sufficiently evaluated as a result of limited access. Lacking an evaluation of these structures significance, it is unknown as to whether they would be eligible for listing in the CRHP. Until they are further evaluated, they will be considered potentially significant.

The Project would demolish these historic-era structures, and thereby has the potential to directly impact significant historic resources. Therefore, Project impacts to historic resources are potentially significant, and this issue will be further evaluated in an EIR.

b) **Less than Significant Impact.** As discussed in a) above, the records search identified a prehistoric isolate (P-36-060213), that could not be relocated during the pedestrian survey, but was mitigated at the time of recordation. In addition, Dudek initiated Native American coordination for this Project on October 19, 2015, as part of the process of identifying cultural resources within or near the Project site. The Native American Heritage Commission provided a response on November 5, 2015 indicating that the Sacred Land File search failed to indicate the presence of Native American cultural resources in the immediate Project area. Therefore, impacts to archeological resources would be less than significant.

c) **Less than Significant Impact.** The Project area has been previously disturbed, and is not located within an area of the County known or suspected fossil occurrence/sensitivity and has been previously disturbed and partially developed. Therefore, the area is considered to have a low potential for paleontological resources. Impacts would be less than significant.

d) **Less than Significant Impact.** Based on the Cultural Resources Assessment, the Project site has a low potential to contain human remains. Additionally, PRC section 5097.98 and CEQA Guidelines section 15064.5(e): sets forth standards and steps to be employed following the accidental discovery of human remains. Impacts would be less than significant.

e) **Potentially Significant Impact.** The County is in the process of consulting with Tribes that have requested consultation under Assembly Bill 52. The County will provide information about the Project to Tribes that have requested it, and invite Tribes to indicate whether there are Tribal Resources associated with the Project site. Since, no information is currently available to determine if there are existing Tribal Cultural Resources associated with the Project site, this topic will be further evaluated in an EIR. Impacts would be potentially significant.

VI. GEOLOGY AND SOILS

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map Issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii. Strong seismic ground shaking?	☐	☐	☒	☐
	iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv. Landslides?	☐	☐	☒	☐
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 181-B of the California Building Code (2001) creating substantial risks to life or property?	☐	☐	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐

SUBSTANTIATION: *(Check ☐ if project is located in the Geologic Hazards Overlay District):*

a) i) **Less than Significant Impact.** A review of State and County hazard maps indicates that no portion of Project site would be located within an Alquist-Priolo Earthquake Fault Zone (DOC 2016, San Bernardino County 2010). Therefore, the Project would not result in substantial adverse effects to people or structures, including the risk of loss, injury, or death as the site is not related to an earthquake fault. Impacts would be less than significant.

ii) **Less than Significant Impact.** A review of State and County hazard maps indicates that the Project would not be located in an area associated with strong seismic ground shaking (DOC 2016, San Bernardino County 2010). Nonetheless, southern California is known to be earthquake prone, and the Project is likely to be subjected to some degree of earthquake related shaking. The warehouse building would be designed and built consistent with the current California Building codes which account for seismic ground shaking. Therefore, the Project site would not cause

substantial adverse effects to people or structures, including the risk of loss, injury, or death due to strong seismic ground shaking. Impacts would be less than significant.

iii) **Less than Significant Impact.** A review of State and County hazard maps indicates that the Project would not be located in an area subject to liquefaction or ground-failure (DOC 2016, San Bernardino County 2010). In addition, the Project design and construction would conform to California Building codes which consider California's seismic conditions. Therefore, the Project would not expose people or structures to liquefaction-related hazards, including the risk of loss, injury, or death. Impacts would be less than significant.

iv) **Less than Significant Impact.** The Project site and vicinity is generally level and there are no proximate hills or slopes close enough to subject the Project site to a landslide. A review of State and County hazard maps indicates that the Project would not be located in an area subject to landslides (DOC 2016, San Bernardino County 2010). Therefore, the Project would not expose people or structures, including the risk of loss, injury, or death from landslides. Impacts would be less than significant.

b) **Less than Significant Impact.** Construction activities would include grading and other earthmoving activities that have the potential to result in substantial soil erosion or the loss of topsoil, if not managed properly. The site is generally level, thereby minimizing the amount of grading and earthwork needed to prepare the site for development. The Project-specific Water Quality Management Plan indicates that all slopes would be vegetated and maintained to prevent erosion and transport of sediments. Additionally, infiltration basins may be for providing control of channel forming (erosion) and high frequency (generally less than the 2-year) flood events. Lastly, a Storm Water Pollution Prevention Plan would be prepared and implemented to control erosion during Project construction. Therefore impacts would be less than significant.

c) **Less than Significant Impact.** The Project site is generally level and, as previously discussed in a) above, is not with located within a seismic hazard zone subject to landslide, or liquefaction. The soils at the Project site are Tujunga loamy sand, and Tujunga gravelly loamy sand, which are generally stable and not prone to being unstable, expansive, or result in lateral spreading or collapse. In addition, the building would be designed and constructed consistent with the California Building Code and consideration of site specific soil conditions. Therefore, the Project e would not substantially alter the soil to become unstable to have the potential to result in onsite or offsite landslides, lateral spreading, subsidence, liquefaction, or collapse. Impacts would be less than significant.

d) **Less than Significant Impact.** The soils at the Project site are Tujunga loamy sand, and partially on Tujunga gravelly loamy sand, which are not considered expansive soils. Therefore, the Project would not result in any impacts related to expansive soils. Impacts would be less than significant.

e) **Less than Significant Impact.** Most of the Bloomington Community has been developed with septic tanks and leach field systems (San Bernardino County 2007a). The soils at the Project site support the use of septic systems associated with the existing development Based on the previous and continuing conditions the Project's planned use of septic would be supported. Impacts would be less than significant.

VII. GREENHOUSE GAS EMISSIONS

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b)	Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

SUBSTANTIATION:

a) **Potentially Significant Impact.** Construction and operation activities associated with the Project would produce greenhouse emissions. A Project-specific greenhouse gas analysis will be conducted to further determine the degree of Project impacts related to greenhouse gasses and the results will be summarized in an EIR. Impacts would be potentially significant.

b) **Potentially Significant Impact.** As discussed in a) above, Project activities would result in greenhouse gas emissions. A Project-specific greenhouse gas analysis will be conducted, and evaluate the Project's consistency with the County's Climate Action Plan for achieving greenhouse gas goals, and the results will be summarized in an EIR. Impacts would be potentially significant.

This page intentionally left blank.

VIII. HAZARDS AND HAZARDOUS MATERIALS

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒	☐	☐	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

SUBSTANTIATION:

a) **Less than Significant Impact**. The Project would result in the onsite use of common types of hazardous materials, such as cleaning and degreasing solvents, fertilizers, pesticides, and other materials used in the regular maintenance of the warehouse and property. Thus, the Project would result in an increase in the use of products and other materials routinely used in building maintenance and landscaping. The future use would be required to comply with existing hazardous materials regulations, and verification of compliance would monitored by state (e.g., Occupational Safety and Health Administration in the workplace or Department of Toxic Substances Control for hazardous waste) and local agencies (e.g., the County Fire Department) .Compliance with existing safety standards related to the handling, use, and storage of hazardous materials, and compliance with the safety procedures mandated by applicable federal, state, and local laws and regulations (i.e., the Resource Conservation and Recovery Act, California Hazardous Waste Control Law, and principles prescribed by the California Department of Health Services, Centers for Disease Control and Prevention, and National Institute of Health) would be required.

These potentially hazardous materials, however, would not be of a type or occur in sufficient quantities to pose a significant hazard to the public and safety or the environment. These products are labeled to inform users of potential risks and to instruct them in appropriate handling procedures. Businesses are required by law to ensure employee safety by identifying hazardous materials in the workplace, providing safety information to workers that handle hazardous materials and adequately training workers. For these reasons, hazardous materials used during Project operation would not pose any substantial public health or safety hazards related to hazardous materials. Therefore, Project implementation would result in less than significant impacts.

b) **Potentially Significant Impact**. A Phase I Environmental Site Assessment (Phase I ESA) was prepared to evaluate the Project site for Recognized Environmental Conditions (RECs) (HMC 2014). The following conditions were identified:

- Records indicate that 8 underground storage tanks (USTs) were removed at 1134/38 Cedar Avenue without record of sampling or closure report
- Staining on the ground surface, moderate quantities of hazardous materials and poor housekeeping associated with truck repair at 11134 Cedar Avenue
- A prior fire at 11188 Cedar Avenue where a large quantity of 55 gallon drums were formerly stored

In addition, the Phase I ESA, indicated that all structures on the site were constructed prior to 1980 and have the potential to contain asbestos.

If contaminants are present, Project development would have the potential to expose and release hazardous materials. Subsurface sampling and testing is recommended in order to properly assess the extent and concentration of pollutants that could be present on the Project site. In addition, structures should be evaluated for asbestos prior to disturbance, and asbestos abatement conducted prior to demolition, if present.

At this point, it is inconclusive if the Project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Based on the Phase I ESA, the Project site has RECs which require further investigation, and this topic will be further evaluated in an EIR. Impacts would be potentially significant.

c) **Potentially Significant Impact**. There are two schools near the Project site: Walter Zimmerman Elementary School is less than 100 feet to the northwest, and Crestmore Elementary School approximately 750 feet to the east. Both schools are part of the Colton Joint Unified School District. As discussed in b) above, the Project site may contain hazardous materials that could be exposed during demolition and construction. Therefore, this topic will be further evaluated in an EIR. Impacts are potentially significant.

d) **No Impact**. The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (EnviroStor 2016). Therefore, the Project would not have any impacts related to sites on this list. There would be no impact.

e) **No Impact**. The closest public use airport is more than 5 miles from the Project site. Therefore, there are no airports within 2 miles of the site, and the Project would not conflict within an airport land use plan. No impact would occur.

f) **No Impact**. The nearest airstrip is at Kaiser Hospital approximately 2.4 miles northwest of the Project site. Therefore, there are no private airstrips within two miles of the site, and the Project would not result in a safety hazard for people residing in the Project area. No impact would occur.

g) **No Impact**. According to the Bloomington Community Plan 2007, resident's primary concerns regarding safety in their community revolve around fire protection and the need for improved evacuation routes. Specific evacuation routes are designated by authorities during an emergency in order to respond to the specific needs of the situation and circumstances surrounding the disaster. Within the Community Plan area, the following roadways have been designated as potential evacuation routes: Valley Boulevard, Slover Avenue and I-10. The Project site is located about 1.5 miles south of these routes. The Project would have no direct impacts to these routes. Project traffic may use these routes, especially I-10, however, this use would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. No impact would occur.

h) **No Impact**. The Project site would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands because the Project is not contiguous to wildlands. No impact would occur.

This page intentionally left blank.

IX. HYDROLOGY AND WATER QUALITY

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Violate any water quality standards or waste discharge requirement?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level, which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐		☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structure which would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

SUBSTANTIATION: *(Check ☐ if project is located in the Flood Hazard Overlay District):*

a) **Less than Significant Impact**. While roughly half of the Project site is in active commercial use, such as junk yard, truck repair, etc., most of the area is unpaved and pervious. Impervious features are predominantly buildings, and compose approximately 1.5 acres or 4% of Project site. The Phase I Environmental Site Assessment prepared for the Project site identified poor housekeeping associated with one of the properties involved in truck repair (HMC 2014).

Project-related impacts to water quality could occur under the following periods of activity:

- During demolition of existing features, when risk of pollutant exposure if present;
- During the earthwork and construction phase, when the potential for erosion, siltation, and sedimentation would be the greatest;
- Following construction, before the establishment of ground cover, when the erosion potential may remain relatively high; and
- After Project completion, when impacts related to sedimentation would decrease markedly, but those associated with Project operation, primarily urban runoff, would potentially increase.

National Pollutant Discharge Elimination System

Under Section 402 of the Clean Water Act, the U.S. Environmental Protection Agency (EPA) has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct storm water discharges from construction activities disturbing one acre or more of land. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, which include construction activities. The SWRCB works in coordination with the Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance, and restore water quality. The County is within the jurisdiction of the Santa Ana RWQCB (SARWQCB).

Short-term Construction

Projects that would disturb one or more acres of soil, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit. Since the Project would disturb one or more acres, coverage under the Construction General Permit, preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) would be required. The SWPPP would include a site map(s), which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the Project site. The SWPPP would identify the Best Management Practices (BMPs) that would be used to protect storm water runoff and the placement of those BMPs. The SWPPP would also identify a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs. Thus, the Project’s demolition and construction activities would be subject to compliance with NPDES requirements designed to prevent erosion and transport of pollutants during Project construction. Compliance with the NPDES requirements would result in less than significant construction-related Project impacts.

Long-Term Operations

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer (drain) systems (MS4s), including the County of San Bernardino. Storm water and non-storm water enter and are conveyed through the MS4s and are discharged to surface water bodies in the region. These discharges are regulated under waste discharge requirements contained in orders issued by the SARWQCB. Consistent with regional and Project requirements, a Project

specific Water Quality Management Plan has been prepared, and identifies structural and non-structural BMPs to be implemented in conjunction with the Project (Thienes Engineering 2015). According to the WQMP, the Project will collect and divert stormwater from impervious surfaces to infiltration basins which will both filter and meter the stormwater discharge. A small portion of stormwater from the Project driveway would drain directly to Cedar Avenue. In addition, the WQMP identifies the Low Impact Design measures to be incorporated into the Project design. Implementation of these measures would reduce development impacts on water quality and protect downstream hydraulic conditions, and reduce Project-related storm water pollutants.

Project compliance with regulatory requirements would result in less than significant impacts to water quality.

b) **Less than Significant Impact**. Water for the Project would be provided by the West Valley Water District. Although the District has indicated that there is ample potable water available to serve the Project, given the Project size, it is subject to the preparation of a Water Supply Assessment (WSA) to confirm the available of water (West Valley Water District 2014). Thus, the Project applicant is coordinating with the Water District regarding the completion of a WSA. The resulting WSA must demonstrate the availability of sufficient water in order for the Project to be approved. Therefore, with compliance with State WSA requirements, impacts to groundwater supply as a result of Project consumption would be less than significant. According to the WQMP, the Project would collect stormwater from impervious areas and direct it to infiltration basins to both filter and recharge stormwater (Thienes Engineering 2015). Therefore, the Project would not interfere with groundwater recharge. Impacts would be less than significant.

c) **Less than Significant Impact**. The Project would convert predominantly impervious area to paved areas, rooftop, drainage areas, and landscaping, result in approximately 90% impervious areas. As discussed in a) above, the Project would collect stormwater from impervious areas and direct it to infiltration basins to recharge stormwater, while a small portion of stormwater from the Project driveway would drain directly to Cedar Avenue. The storm water will be detained in an infiltration basin and mimic the time of concentration compared to existing conditions and no erosion or siltation on or offsite are expected. The Project would not alter the drainage pattern of a stream or river. Impacts would be less than significant.

d) **Less than Significant Impact**. As discussed in c) above, any potential alteration to the existing drainage pattern will be avoided through post-development drainage which will mimic pre-development conditions. Impacts would be less than significant.

e) **Less than Significant Impact**. As discussed in c) above, the Project runoff would mimic pre-development conditions in terms of rate/concentration of runoff. In addition, as discussed in a) stormwater would be filtered prior to discharge. Therefore, the Project would not to any increase in the volume of or quality of water compared to the existing conditions, and would not alter or exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

In addition, the Project would relocate an existing SBFCD flood control easement associated with a railroad drainage master plan, to accept/convey drainage from the rail use to the north. While there are no existing flood control facilities on the Project site, the easement is intended to facilitate the development of future flood control improvements by setting aside an alignment for this future facility. To accommodate the Project, this alignment would be abandoned in favor of one which would direct future flows east along the northern Project boundary and south along Cedar Avenue. The Project would dedicate the easement to SBCFCD to facilitate future SBFCD drainage improvements.

Impacts would be less than significant.

f) **Less than Significant Impact**. As discussed in a) above, Project compliance with regulatory requirements would protect water quality from Project construction and operations. Given that a SWPPP will be implemented to control erosion and other pollutants during construction, and operation related stormwater runoff water will be treated on-site, the Project would not substantially degrade water quality.

Similar to most of the Bloomington area, development on the Project site uses septic systems to handle wastewater. The Project would similarly use a septic system. Because the site is currently underdeveloped, the Project would likely increase the amount of wastewater compared to existing condition. The on-site septic system would be designed, constructed and maintained, consistent with County, and State Water Resources Control Board, standards and requirements, designed to protect water quality.

Impacts would be less than significant.

g) **No Impact**. The Project would not involve the development or placement of any housing. Therefore, no housing would be developed and or placed within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. No impact would occur.

h) **No Impact**. The Project is located in Federal Emergency Management Agency (FEMA) Zone X, an area of minimal flood hazard (FEMA2016). Based on FEMA's flood hazard rating, the Project would not be placed within a 100-year flood hazard area, and thus would not place structures in an area that would impede or redirect flood flows. No impact would occur.

i) **No Impact**. As indicated in h) above, the Project is not within an area subject to flooding. In addition, there are no levees within the Project vicinity, and the site is not within a dam inundation area. Therefore, the Project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. No impact would occur.

j) **No Impact**. The Project is located in the valley most portion of the unincorporated San Bernardino County. The site would not be subject to inundation by seiche, tsunami, or mudflow because it is located inland in an area that is distant from a large body of water, coastal, and mountainous areas. No impact would occur

X. LAND USE AND PLANNING

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

SUBSTANTIATION:

a) **No Impact.** The Project would not physically divide an established community because it would use existing public and privately owned parcels that are already inaccessible for pedestrian or vehicular through traffic and combine them to create a single development Project. The Project would add no additional barriers than those that already exist. Therefore, no impact would occur.

b) **Potentially Significant Impact.** The existing land use designation for the Project site is Bloomington/Residential 1 Acre Minimum lot size-additional agricultural overlay (BL/RS-1AA) and Bloomington/Institutional (BL/IN). This designation provides for single family housing on lots from 200,000 square feet to one acre, with agricultural and animal raising activities permitted. According to the Community Plan, the primary land use concern is that the rural character of this area be preserved through the Agricultural Overlay, rural standards for development, and limitations on adjacent land use (San Bernardino County 2007). As the Project would develop a single warehouse development on an approximately 35 acre site, it would be inconsistent with the residential designation and lot sizing, and would not promote the rural character of the area. The Project would require a General Plan Amendment to Bloomington/Industrial (BL/IC), in order to resolve this inconsistency. Further analysis will be conducted in the EIR.

c) **No Impact**. There are no habitat conservation plan or natural community conservation plans associated with the Project site (San Bernardino County 2007a). No impact would occur.

This page intentionally left blank.

XI. MINERAL RESOURCES

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

SUBSTANTIATION: *(Check ☐ if project is located within the Mineral Resource Zone Overlay):*

a)
b)

No Impact. The Project site is not located within a Mineral Resources (MR) overlay zone (San Bernardino County 2007b), and is not a known source of any mineral resources. Therefore, the Project would not forecast to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur.

This page intentionally left blank.

XII. NOISE

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project result in:				
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

SUBSTANTIATION: *(Check if the project is located in the Noise Hazard Overlay District ☐ or is subject to severe noise levels according to the General Plan Noise Element ☐):*

The Project site is not located in Noise Hazard (NH) Overlay District and is not subject to severe noise levels according to the County General Plan Noise Element.

a) **Potentially Significant Impact.** The Project would create a temporary increase in noise during development activities including:

- Use of equipment during demolition of structures
- Use of equipment during site clearing (trees, vegetation, debris)
- Use of earthmoving equipment during grading and site preparation
- Use of construction and paving equipment during building construction and installation of paved and landscape areas
- Construction related traffic including employee trips, and truck trips associated with equipment and materials delivery, and removal of demolition debris

The Project would also result in long-term changes in ambient noise associated with typical office and warehousing activities. Noise would be generated by truck and passenger vehicle trips to and from the site on adjacent roadways; trucks backing up, starting up, and idling; fork lifts; and mechanical systems (heating, ventilation, and air conditioning) noise. Long-term operational noises also include Project-generated traffic and resulting traffic noise on adjacent roads.

The Project would be required to comply with established County standards for noise (e.g. County General Plan Noise Element). Project impacts would be considered significant if projected noise would exceed the County standards. The projected noise levels, and compliance with County standards will be further evaluated in an EIR. Impacts would be potentially significant.

b) **Less than Significant Impact.** The heavier pieces of equipment that may be used during construction, and would have the potential to create ground borne noise or vibration include: dozers, graders, cranes, loaded trucks, water trucks, and pavers. Continuous vibrations with a peak particle velocity (PPV) of approximately 0.10 inches/second are considered to cause annoyance (Dudek 2015d). However, ground borne vibration is typically attenuated over short distances (typically on the order of 25 feet). The closest sensitive receptors (residence or school) would be approximately 60 feet or more from the nearest construction area. At this distance and with the anticipated construction equipment, the PPV is estimated to be 0.024 inches/second or lower, which would be well below 0.10 inches/second at the adjacent sensitive receptors. Therefore, construction activities are not anticipated to result in continuous vibration levels that typically annoy people, and the vibration impact would be considered less than significant. Operational vibration would also be less than significant; as no major equipment that would be capable of transmitting vibrations beyond the property boundaries is envisioned. In addition, the rubber-tired heavy and medium trucks and automobiles associated with Project operations would not create vibration levels higher than already experienced along the adjacent arterial roadways (Dudek 2015c). Impacts would be less than significant.

c) **Potentially Significant Impact**. As discussed in a) above, the Project would generate long-term noise associated with typical office and warehousing activities. A potentially significant impact could result if the increase in ambient noise is substantial, or would result in noise levels that exceed a County standard. The resulting permanent increase in ambient noise levels resulting from the Project will be further evaluated in an EIR. Impacts would be potentially significant.

d) **Potentially Significant Impact**. As discussed in a) above, the construction and operation activities associated with the Project would produce temporary and permanent increases in ambient noise levels in the vicinity. A potentially significant impact could result in the increase is substantial. The resulting increase in noise levels will be further evaluated in an EIR. Impacts would be potentially significant.

e) **No Impact**. The Project is not within an airport land use plan, and the closest public use airport is Rialto Municipal Airport over 5 miles north of the Project site. Therefore, the Project would not expose people to aviation related noise. No impact would occur.

XIII. POPULATION AND HOUSING

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

SUBSTANTIATION:

a) **Less than Significant Impact.** Population growth in the Unincorporated Community of Bloomington has continuously been on the rise since the 90's (San Bernardino County 2007). The Project would not induce population growth through the introduction of housing because no housing is associated with the development. In some cases, direct population growth can be created through the introduction of a new businesses; however, direct population growth associated with the Project is not forecast to occur because the community has a need for employment and most of the jobs created are forecast to be occupied by local residents. Additionally, the Project would not involve any infrastructure improvements that would induce growth. Therefore, the Project would not substantially induce population growth. Impacts would be less than significant.

b) **Less than Significant Impact**. The Project would involve the demolition of approximately 14 existing residences at the site. All property owners are voluntarily selling their property, would be compensated for their properties, and no evictions are anticipated. It is expected that residents would have the ability and capital to relocate within or outside the area based on existing housing stock. As a result, the construction of replacement housing would not be necessary. Impacts would be less than significant.

c) **Less than Significant Impact**. As discussed in b) above, the existing residences that would be demolished are being voluntarily sold, and it is expected that residences would be able to find replacement housing, within the existing housing stock. Therefore, the Project would not displace a substantial amount of people that would require replacement housing. Impacts would be less than significant.

This page intentionally left blank.

XIV. PUBLIC SERVICES

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Fire Protection?	☐	☐	☒	☐
	Police Protection?	☐	☐	☒	☐
	Schools?	☐	☐	☒	☐
	Parks?	☐	☐	☒	☐
	Other Public Facilities?	☐	☐	☒	☐

SUBSTANTIATION:

a) **Less than Significant Impact.**

Fire Protection
San Bernardino County Fire Department provides fire protection services to the Bloomington Community. The nearest County Fire station site is located at 10174 Magnolia Street in Bloomington approximately 1.2 miles to the north. Development of the Project would increase property tax revenues to provide a source of funding that is sufficient to offset any increases in the anticipated demands for public services generated by this Project. Therefore, no significant adverse impacts are anticipated and no mitigation measures are required.

Police Protection
San Bernardino County Sheriff's Department provides police protection services to the Community of Bloomington. The nearest San Bernardino County Sheriff's station, is the Fontana Station, at the corner of Alder Ave and Arrow Route in the City of Fontana, approximately 3.5 miles northwest. The station was remodeled and expanded in 2003. The station is staffed by one secretary, five clerks, one motor pool assistant, one Sheriff's Service Specialist, 27 deputy positions, five detectives, seven sergeants, one lieutenant, and one captain. Sherriff's deputies enjoy a close working relationship with the surrounding agencies of Fontana Police, Rialto Police, Rancho Cucamonga Police, and Riverside Sheriff. The Department is also supported by several volunteer groups, including Citizen's on Patrol, search and Rescue, Explorers, and Line Reserves. Development of the Project would increase property tax revenues to provide a source of funding that is sufficient to offset any increases in the anticipated demands for public services generated by this Project. Therefore, no significant adverse impacts are anticipated and no mitigation measures are required.

Schools
School services for students in the area are provided by Colton Joint Unified School District. However, due to the nature of the Project (commercial development), no students would be directly generated by the Project.

Assembly Bill 2926 passed in 1986 allows school districts to collect impact fees from developers of new residential and commercial/industrial building space. Senate Bill 50 and Proposition 1A, both of which passed in 1998, provided a comprehensive school facilities financing and reform program. The provisions of SB50 prohibit local agencies from denying either legislative or adjudicative land use approvals on the basis that school facilities are inadequate, and reinstates the school facility cap for legislative actions. According to Government Code Section 65996, the payment of development fees authorized by SB50 are deemed to be full and complete school facilities mitigation.

The Project would be required to pay mandated development fees for commercial/industrial buildings. Impacts would be less than significant.

Parks or Other Public Facilities
Due to the nature of the Project, no new residents would be generated that would be likely to impact or create a need for additional local parks or other public facilities. However, it is possible that new employees may occasional use public parks or facilities between shifts. Such use is likely to be negligible compared to existing conditions, or additional housing. Therefore, impacts would be less than significant.

XV. RECREATION

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

SUBSTANTIATION:

a) **Less than Significant Impact.** The Project is commercial in nature, and would not introduce new residents to the area. While some of the employees associated with the Project may use local recreation facilities, such use would be minor, and insufficient to contribute to substantial physical deterioration of recreation facilities. A small (2,200 sq ft), but active recreation center is currently located on 0.3 acres of the Project site, and is owned and operated by the Bloomington Parks and Recreation District. The recreation center offers community classes, such as art, language, music, culture, and fitness classes Monday through Saturday. The recreation center would be acquired and demolished in order to accommodate the Project. The County is voluntarily selling this property and would relocate the classes to other existing facilities nearby.[1] For instance there are two recreation centers on Valley Boulevard within the Community of Bloomington where these classes may be offered. Omnitrans Route 29 travels along Cedar Avenue and Valley Boulevard every hour from Monday through Saturday, and provides a reliable source of transportation for residents, to and from, the Project vicinity and the recreation centers. Based on these considerations, impacts associated with the existing recreation center would not be expected to result in the substantial deterioration of existing facilities. Impacts would be less than significant.

b) **No Impact.** The Project does not include recreational facilities, or require the expansion of recreational facilities which might have an adverse physical effect on the environment, because the type of Project being proposed would not result in an increased demand for recreational facilities. No impact would occur.

[1] Personal communication with Tim Millington, Director, San Bernardino County Special Districts, on January 14, 2016.

This page intentionally left blank.

XVI. TRANSPORTATION/TRAFFIC

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and greenways, pedestrian and bicycle paths, and mass transit.	☒	☐	☐	☐
b)	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	☒	☐	☐	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e)	Result in inadequate emergency access?	☐	☐	☒	☐
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

SUBSTANTIATION:

a) **Potentially Significant Impact.** The Project would contribute traffic to the existing circulation system including truck trips associated with warehouse operation, as well as employee trips. A potentially significant impact would result if Project traffic would result in exceedance of a County traffic performance standard. The Project's impacts on the existing circulation system will be further evaluated, in an EIR. There are no greenways, bicycle paths, or mass transit facilities associated with the Project, thus the Project would have no impact on these type of transportation facilities. Impacts would be potentially significant.

b) **Potentially Significant Impact.** A potentially significant impact would result if the Project would adversely affect Congestion Management Plan (CMP) facilities. CMP facilities in the Project vicinity include the following intersections:

- Cedar Avenue/Valley Blvd
- Cedar Avenue/Slover Avenue
- Cedar Avenue/Jurupa Avenue
- I-10 Freeway and ramps

The Project would potentially contribute traffic to CMP facilities in the vicinity. The Project's impact on CMP facilities will be further evaluated in an EIR. Impacts would be potentially significant.

c) **No Impact.** The Project would not result in a change in air traffic patterns. No impact would occur.

d) **No Impact.** The Project does not involve any unusual conditions, or hazardous design features, such as sharp curves or dangerous intersections, or incompatible uses. No impact would occur.

e) **Less than Significant Impact.** The Project is conveniently located in close proximity to I-10, and three regional hospitals, including Kaiser Permanente in Fontana, Arrowhead Regional Medical Center in Colton, and Loma Linda Medical Center in Fontana. The Project would also improve adjacent segments of Cedar and Jurupa Avenues. Therefore, the Project would not result in inadequate emergency access. Impacts would be less than significant.

f) **Less than Significant Impact.** There are no existing transit, bicycle, or pedestrian facilities associated with the Project site or the immediate vicinity. However, the Project would improve adjacent segments of Cedar and Jurupa Avenues, including the provision of shoulders, curbs, and sidewalks, thereby improving bicycle and pedestrian facilities. The Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Impacts would be less than significant.

XVII. UTILITIES AND SERVICE SYSTEMS

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
	Would the project:				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded, entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f)	Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

SUBSTANTIATION:

a) **Less than Significant Impact**. Similar to most of the Bloomington area, development on the Project site uses septic systems to handle wastewater. The Project would similarly use a septic system. Because the site is currently underdeveloped, the Project would likely increase the amount of wastewater compared to existing condition. The on-site septic system would be designed, constructed and maintained, consistent with County, and State Water Resources Control Board, standards and requirements. Impacts would be less than significant.

b) **Less than Significant Impact**. The Project would include the construction of an on-site septic system to manage Project wastewater. No other wastewater facilities would be required. Also see a) above.

Because the site is currently underdeveloped, the Project would likely increase the amount of water use compared to existing condition. Based on a rate of 231,250 gallons per thousand square feet per year, the estimated annual water use would be 156.6 million gallons per year. Water for the Project would be provided by the West Valley Water District. Although the District has indicated that there is ample potable water available to serve the Project, given the Project size, it is subject to the

preparation of a Water Supply Assessment (WSA) to confirm the available of water (West Valley Water District 2014). Thus, the Project applicant is coordinating with the Water District regarding the completion of a WSA. The resulting WSA must demonstrate the availability of sufficient water in order for the Project to be approved. Therefore, with compliance with State WSA requirements, impacts to water supply as a result of Project consumption would be less than significant. Development of new or expanded water facilities are not anticipated. Impacts would be less than significant.

c) **Less than Significant Impact**. As discussed in Section IX on Hydrology and Water Quality, storm water facilities, including infiltration basins would be installed on-site to filter and discharge storm water to mimic existing hydrologic conditions in terms of flow rate and volume. Therefore, the Project would not result in the need for off-site drainage improvements. Impacts would be less than significant.

d) **Less than Significant Impact**. As indicated in b) above, water for the Project would be provided by the West Valley Water District. Although the District has indicated that there is ample potable water available to serve the Project, given the Project size, it is subject to the preparation of a Water Supply Assessment (WSA) to confirm the available of water (West Valley Water District 2014). Thus, the Project applicant is coordinating with the Water District regarding the completion of a WSA, which is in progress. The resulting WSA must demonstrate the availability of sufficient water in order for the Project to be approved. Therefore, with compliance with State WSA requirements, impacts to water supply as a result of Project consumption would be less than significant. No additional entitlements are anticipated to support the Project. Impacts would be less than significant.

e) **Less than Significant Impact**. See response a) above. Impacts would be less than significant.

f) **Less than Significant Impact.** The Project site would continue to be served by the solid waste facilities and landfills that currently serve San Bernardino County in the area. Nearby landfills include:

- Mid-Valley Landfill in Rialto. This landfill is closest to the Project site, has a permitted capacity of 101,300,000 cubic yards, with an estimated remaining capacity of 67,520,000 cubic yards, or 67%. The estimated closure date is in 2033.
- San Timoteo Landfill in Redlands. This landfill has a permitted capacity of 20,400,000 cubic yards, a remaining capacity of 13,605,488 cubic yards, or 67%. The estimated closure date is in 2043. (California Department of Recycling and Recovery 2016.)

Demolition, site clearing and construction, would generate construction debris. Because the site is currently underdeveloped, the Project would increase the amount of solid waste used compared to the existing conditions. Based on a generation rate of 0.006 pounds per square feet per day, it is estimated that the Project would generate approximately 4,062 pounds per day, and 1,482,593 pounds per year, or 741 tons of solid waste per year.

The County would continue to comply with the existing regulatory framework for reducing solid waste disposal volumes. The landfill serving the Project site would have the necessary capacity to accommodate the Project's waste disposal needs for the foreseeable future. Impacts would be less than significant.

g) **Less than Significant Impact.** In 1989, the Legislature adopted the California Integrated Waste Management Act of 1989 (AB 939), in order to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible." AB 939 established a waste management hierarchy: Source Reduction; Recycling; Composting; Transformation; and Disposal. The law also required that each county prepare a new Integrated Waste Management Plan and each city prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. The SRRE is required to identify how each

jurisdiction will meet the mandatory state waste diversion goal of 50 percent by the year 2000. The Act mandated that California's 450 jurisdictions (i.e., cities, counties, and regional waste management compacts), implement waste management programs aimed at a 25 percent diversion rate by 1995 and a 50 percent diversion rate by 2000. If the 50 percent goal was not met by the end of 2000, the jurisdiction was required to submit a petition for a goal extension to Cal Recycle.

Senate Bill (SB) 2202 made a number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act. These changes included a revision to the statutory requirement for 50 percent diversion of solid waste to clarify that local governments shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

SB 1016, Wiggins, Chapter 343, Statutes of 2008 introduced a per capita disposal measurement system that measures the 50 percent diversion requirement using a disposal measurement equivalent. The bill repealed the board's two-year process, requiring instead that the board make a finding whether each jurisdiction was in compliance with the act's diversion requirements for calendar year 2006 and to determine compliance for the 2007 calendar year, and after, based on the jurisdiction's change in its per capita disposal rate. The board is required to review a jurisdiction's compliance with those diversion requirements in accordance with a specified schedule, which is conditioned upon the board finding that the jurisdiction is in compliance with those requirements or has implemented its source reduction and recycling element and household hazardous waste element. The bill requires the board to issue an order of compliance if the board finds that the jurisdiction has failed to make a good faith effort to implement its source reduction and recycling element or its household hazardous waste element, pursuant to a specified procedure.

Participation in the County's recycling programs during Project construction and operation including CalRecycle's requirements, would ensure that the Project would not conflict with federal, state, and local statutes and regulations related to solid waste. Furthermore, the Project would meet or exceed standards set forth in CALGreen as well as Title 24. Impacts would be less than significant.

This page intentionally left blank.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
	Would the project:				
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c)	Does the project have environmental effects, which shall cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

SUBSTANTIATION:

a) **Potentially Significant Impact.** As discussed in Section IV, Biological Resources, Project development may affect nesting birds. The Project would not otherwise have significant impacts on wildlife resources. Mitigation measures would be implemented to protect nesting birds during construction, so that impacts to wildlife would be less than significant.

As discussed in Sections III, Air Quality, VII Greenhouse Gasses, and XII Noise, the Project has the potential to degrade the quality of the environment through the production of air pollutant emissions, greenhouse gas emissions, and the generation of noise. These impacts may be potentially significant. Therefore, the impacts of the Project will respect to these subjects will be more fully evaluated in an EIR.

As discussed in Section V, Cultural Resources, the Project site contains historic age buildings of unknown significance. Therefore, the impacts of the Project on historic resources, that may provide examples of the major periods of California history, will be further evaluated in an EIR.

b) **Potentially Significant Impact.** The Project would result in several potentially significant Project-level impacts in the following areas: air quality, biological resources, cultural resources, greenhouse gasses, hazards and hazardous materials, noise and traffic/circulation. Mitigation measures have been identified that would reduce impacts to biological resources to less than significant. The balance of these subjects will be further evaluated in an EIR, along with the cumulative impacts. All other impacts of the Project were determined either to have no impact, or to be less than significant without the need for mitigation. With respect to these topics, the Project would not result in any significant impacts that would substantially combine with impacts of other current or probable future impacts.

c) **Potentially Significant Impact.** The Project would include the development of detention basins that would meter treat and meter the release of stormwater. According to the Project hydrology report, the basins would also be designed with a percolation rate of 2.5 inches per hour, so that remaining water would infiltrate within 48 hours, and avoid any concerns associated with standing water (mosquitos, odors).

Previous sections of this Initial Study/Mitigated Negative Declaration reviewed the Project's potential impacts related to air quality, geology/soils, hazards/hazardous materials, and noise, among other environmental issue areas. As concluded in these previous discussions, the Project would result in potentially significant impacts to air quality hazards/hazardous materials and noise. Therefore, the Project may cause significant adverse effects on human beings. These impacts will be further evaluated in an EIR.

XIX. MITIGATION MEASURES

(Any mitigation measures, which are not 'self-monitoring' shall have a Mitigation Monitoring and Reporting Program prepared and adopted at time of project approval)

Biological Resources

Implementation of the following mitigation measures would reduce impacts to special status species to less than significant:

MM-BIO-1 If construction activities are to take place during the avian nesting season breeding season (February 15 through August 31 for most bird species, and January 1 through August 31 for raptors), a pre-construction survey for nesting bird species, including raptors, shall be conducted within 7 days prior to vegetation removal. The survey will identify any active nesting by special-status birds on the Project site or within 500 feet of construction activities. If active nests of special-status birds are present in the impact area or within 500 feet of the edge of construction area, a qualified biologist shall prescribe avoidance measures including, but not limited to, establishing a construction buffer. The type of species, nesting stage, surround topography, existing conditions, and type of construction activity will determine the appropriate avoidance measures. Avoidance measures shall remain in place until the nest is no longer active as determined by a qualified biologist.

MM-BIO-2 A qualified biologist in accordance with the latest California Department of Fish and Wildlife (CDFW) survey guidelines will conduct a burrowing owl preconstruction survey within 30 days prior to ground-disturbance or noise producing activities. If burrowing owls occupy the site, then a mitigation plan shall be prepared, approved by CDFW, and implemented prior to initiation of ground-disturbance activities that may affect the burrowing owl on site. The mitigation plan will include methods for avoidance or relocation of the owl and details regarding the proposed relocation site.

This page intentionally left blank.

GENERAL REFERENCES (List author or agency, date, title)

California Department of Conservation (DOC). 2014. San Bernardino County Williamson Act FY 2014/2015.

California DOC. 2015. California Important Farmland Finder. Website: http://maps.conservation.ca.gov/ciff/ciff.html, accessed January 21, 2015.

California Department of Conservation (DOC). 2014. California Geological Service Information Warehouse: Regulatory Maps. Website: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps, accessed January 22, 2016.

California Department of Recycling and Recovery. 2016. Solid Waste Information System. Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx, accessed January 28, 2016.

Caltrans. 2006. Website: http://www.dot.ca.gov/hq/oppd/hdm/pdf/chp1000.pdf, accessed March 8, 2016.

California Department of Toxic Substance Control. 2016. EnviroStor, Website: http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=BLoomington%20ca&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true, accessed March 7, 2016.

San Bernardino County. 2007a. Bloomington Community Plan.

San Bernardino County. 2007b. 2007 General Plan.

San Bernardino County, Land Use Element Table LU-1, 2007

San Bernardino County. 2010. Land Use Plan Geologic Hazards Overlay map. Website: www.sbcounty.gov/Uploads/lus/GeoHazMaps/EHFHC_20100309new.pdf, accessed January 21, 2015.

SANBAG Map Viewer, 2016. Website: http://maps.sanbag.ca.gov/flexviewer/default.htm, accessed March 8, 2016.

PROJECT SPECIFIC STUDIES

Dudek. 2015a. Biological Resources Technical Report, Bloomington Distribution Project.

Dudek. 2015b. Cultural Resources Study for the Bloomington Distribution Project, San Bernardino County, California.

Dudek. 2015c. Draft Technical Noise Report, Bloomington Distribution Project.

HMC. 2014. Phase I Environmental Site Assessment, Northwest Corner of Cedar and Jurupa Avenues, Bloomington, California.

Kunzman Associates, Inc. 2015. Bloomington Option C Traffic Impact Analysis.

Thienes Engineering, Inc. 2015. Preliminary Water Quality Management (WQMP) for Bloomington Industrial Facility, Jurupa Avenue, Bloomington, CA 92316.

This page intentionally left blank.

Michael Baker
INTERNATIONAL

We Make a Difference

MEMORANDUM

Date: April 18, 2016

Subject: Western Realco Bloomington Facility (Project)
Summary of Oral Comments from Scoping Meeting

The County of San Bernardino (County) held a Project Scoping Meeting on April 13, 2016 from 9:00 am to 11:30 am at 385 N. Arrowhead Avenue, San Bernardino, CA. The meeting gave the community the opportunity to provide input on the range of environmental issues to be addressed in the Draft Environmental Impact Report being prepared to address California Environmental Quality Act requirements for the County's consideration of the proposed Project. The meeting was attended by approximately 21 people who self-identified as a resident and/or MAC member.

This document summarizes oral scoping comments provided at the meeting.

Traffic and Circulation
Concerns regarding traffic issues that may arise from the Project, as follows:

- Concern regarding traffic; would like to see a traffic signal or a stop sign installed on Linden Avenue if a truck entrance/exit is placed on Linden Avenue.
- Concern regarding truck travel on Cedar Avenue. The center median does not allow trucks to make U-turns and would impede trucks from making left-turns in and out of the project site on Cedar Avenue
- Trucks are currently using local residential streets to access Cedar Avenue. Concern that Project traffic will similarly use residential streets.
- Speed limit on Cedar Ave should be evaluated. It is currently too fast of a road for any type of non-motorized transportation.
- Concern regarding road damage/maintenance.

Noticing and Project Information

- Concern about the time of the day and place the scoping meeting took place, indicating it should be held at a more accessible time.
- Scoping meeting presentation was requested (e.g. posted on website).
- It was mentioned that some neighbors did not receive a Notice of Preparation/Meeting Notice.

Air Quality and Hazardous Materials

- Concern about the potential of air quality pollution to sensitive receptors (nearby schools) due to on-site construction and Project operation.
- Residents received past information from unknown source (possibly private party or County Health) about potential chromium soil contamination associated with a former cement site located at Tarragona Drive, El Revino Road and Cedar Avenue. The chromium was allegedly dispersed by wind and potentially aerially deposited in the area.

Vandalism

- Concern about the potential for graffiti if a wall is installed on Linden. It was suggested that a sufficient setback with landscaping is installed from the sidewalk so that the wall is not as easily susceptible to graffiti. Vines were also suggested as a wall screening method.

Lighting

- Concern about the potential of lighting pollution. The resident living on the corner of Stallion Lane and Linden Avenue is concerned that lighting on the Project site will reflect directly into the bedroom which faces Linden Avenue.

Other

- Access road associated with flood control easement is currently used for horseback riding.
- Concern regarding property values.
- Suggestion that the CEQA process to be clarified as that may address many questions.
- Comment that conditions of approval could be required by the County to address some of the concerns that the public had regarding lighting, setbacks, traffic, etc.

LOZEAU DRURY LLP
T 510.836.4200
F 510.836.4205
410 12th Street, Suite 250
Oakland, Ca 94607
www.lozeaudrury.com
richard@lozeaudrury.com

BY US MAIL

April 1, 2016

Kevin White
San Bernardino County - Land Use Services Department
(909) 387-3067
385 N. Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0187

RE: Western Realco Bloomington Facility (SCH #2016031085)

Dear Mr. White:

I am writing on behalf of the Laborers International Union Local Number 783, and its many members living in San Bernardino County concerning the Notice of Preparation ("NOP") under the California Environmental Quality Act ("CEQA") for the Western Realco Bloomington Facility (SCH #2016031085) ("Project."). Thank you for inviting comments on the NOP. We request that the County prepare a full environmental impact report ("EIR") for the Project and analyze and propose mitigation for all significant impacts created by the Project.

We hereby request that the County of San Bernardino ("County") send by electronic mail or U.S. mail to our firm at the address below notice of any and all actions or hearings related to activities undertaken, authorized, approved, permitted, licensed, or certified by the County and any of its subdivisions, and/or supported, in whole or in part, through contracts, grants, subsidies, loans or other forms of assistance from the County, including, but not limited to the following:

- Notice of any public hearing in connection with the Project as required by California Planning and Zoning Law pursuant to Government Code Section 65091.
- Any and all notices prepared for the Project pursuant to the California Environmental Quality Act ("CEQA"), including, but not limited to:
    - Notices of any public hearing held pursuant to CEQA.
    - Notices of determination that an Environmental Impact Report ("EIR") is required for a project, prepared pursuant to Public Resources Code Section 21080.4.

- Notices of any scoping meeting held pursuant to Public Resources Code Section 21083.9.
- Notices of preparation of an EIR or a negative declaration for a project, prepared pursuant to Public Resources Code Section 21092.
- Notices of availability of an EIR or a negative declaration for a project, prepared pursuant to Public Resources Code Section 21152 and Section 15087 of Title 14 of the California Code of Regulations.
- Notices of approval and/or determination to carry out a project, prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notices of approval or certification of any EIR or negative declaration, prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notices of determination that a project is exempt from CEQA, prepared pursuant to Public Resources Code section 21152 or any other provision of law.
- Notice of any Final EIR prepared pursuant to CEQA.

Please note that we are requesting notices of CEQA actions and notices of any public hearings to be held under any provision of Title 7 of the California Government Code governing California Planning and Zoning Law. This request is filed pursuant to Public Resources Code Sections 21092.2 and 21167(f), and Government Code Section 65092, which require local counties to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

In addition, we request that the County send to us via email or U.S. Mail a copy of all County Board of Supervisors or Planning Commission meeting and/or hearing agendas.

Please send notice by electronic mail or U.S. mail to:

Richard Drury
Theresa Rettinghouse
Lozeau Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607
richard@lozeaudrury.com
theresa@lozeaudrury.com

Please call should you have any questions. Thank you for your attention to this matter.

Sincerely,

Richard Drury

Salas Puente, Ruben D

From: Gabrieleno Band of Mission Indians <gabrielenoindians@yahoo.com>
Sent: Tuesday, April 05, 2016 11:24 PM
To: kevin.white@lus.sbcounty.gov
Subject: western Realco Bloomington facility

Please forward any information regarding this project.

Sincerely,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
cell: (626)926-4131
email: gabrielenoindians@yahoo.com
website: www.gabrielenoindians.org

Salas Puente, Ruben D

From: Daniel McCarthy <DMcCarthy@sanmanuel-nsn.gov>
Sent: Thursday, April 07, 2016 12:13 PM
To: 'White, Kevin - LUS'
Subject: Scoping meeting for Western Realco Bloomington Facility

Hi Kevin,

We received the Scoping notice for the proposed Western Realco Bloomington Facility. We will not be able to attend due to prior commitments. However, we would like to offer for the record our recommendation that a cultural resources records search be conducted with a one mile search radius and that if the subject parcels have not been previously developed, that a Phase I cultural resources study be conducted, with a copy forwarded to our office for our information. If tribal cultural resources are identified during the records search and/or the study, we will opt for consultation.

Thank you,
Leslie Mouriquand MA, RPA

Daniel McCarthy, MS, RPA
Director
Cultural Resources Management Department
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346
Office: 909 864-8933 x 3248
Cell: 909 838-4175
dmccarthy@sanmanuel-nsn.gov

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 ♦ www.aqmd.gov

April 13, 2016

kevin.white@lus.sbcounty.gov
Kevin White, Senior Planner
San Bernardino County, Land Us Services Department
385 North Arrowhead Ave., 1st Floor
San Bernardino, CA 92415

Notice of Preparation of a CEQA Document for the
Western Realco Bloomington Facility

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The SCAQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the CEQA document upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. More recent guidance developed since this Handbook was published is also available on SCAQMD's website here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). SCAQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD staff requests that the Lead Agency quantify criteria pollutant emissions and compare the results to the recommended regional significance thresholds found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, the SCAQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-

toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Perspective*, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate these impacts. Pursuant to CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying possible mitigation measures for the project, including:

- Chapter 11 of the SCAQMD *CEQA Air Quality Handbook*
- SCAQMD's CEQA web pages at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies.
- CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.
- SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions
- Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf.

SCAQMD Recommendation for Truck Trip Rates for High Cube Warehouse Projects

SCAQMD recommends the use of truck trip rates from the Institute of Transportation Engineers (ITE) for high cube warehouse projects located in SCAQMD (i.e. 1.68 average daily vehicle trips per 1,000 s.f. and 0.64 average daily truck trips per 1,000 s.f.). Consistent with CEQA Guidelines, the EIR may use a non-default trip rate if there is substantial evidence indicating another rate is more appropriate for the air quality analysis.

For high cube warehouse projects, the SCAQMD staff has been working on a Warehouse Truck Trip Study to better quantify trip rates associated with local warehouse and distribution projects, as truck emission represent more than 90 percent of air quality impacts from these projects. Details regarding this study can be found online here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/high-cube-warehouse

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's webpage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project emissions are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at jcheng@aqmd.gov or call me at (909) 396-2448.

Sincerely,

Jillian Wong

Jillian Wong, Ph.D.
Program Supervisor
Planning, Rule Development & Area Sources

SBC160325-02
Control Number

State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
(909) 484-0459
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director

April 18, 2016

Kevin White, Planner
County of San Bernardino
Land Use Services Department
385 N. Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182

Subject: Notice of Preparation of a Draft Environmental Impact Report
Western Realco Bloomington Facility Project
State Clearinghouse No. 2016031085

Dear Mr. White:

The Department of Fish and Wildlife (Department) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Western Realco Bloomington Facility Project (project) [State Clearinghouse No. 2016031085]. The Department is responding to the NOP as a Trustee Agency for fish and wildlife resources (California Fish and Game Code Sections 711.7 and 1802, and the California Environmental Quality Act [CEQA] Guidelines Section 15386), and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines Section 15381), such as the issuance of a Lake or Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*) and/or a California Endangered Species Act (CESA) Permit for Incidental Take of Endangered, Threatened, and/or Candidate species (California Fish and Game Code Sections 2080 and 2080.1).

The approximately 35.54-acre project site is located west of Linden Avenue, approximately 650 feet south of Santa Ana Avenue, approximately 650 feet east of Cedar Avenue, and approximately 1,300 feet north of Jurupa Avenue; within the unincorporated community of Bloomington, in southwestern San Bernardino County, California; latitude 34°03'8.64", longitude -117°23'59.39". The proposed project consists of a General Plan Amendment to change the existing land use designation from residential and institutional uses to industrial uses, a Tentative Parcel Map to combine the existing 17 parcels into one lot, and a Conditional Use Permit to construct a 676,983 square foot industrial warehouse building and associated facilities and improvements. Associated facilities include a proposed guard booth, parking, bicycle racks, landscaping, and detention basins.

COMMENTS AND RECOMMENDATIONS

The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (i.e., biological resources); and administers the Natural Community Conservation Planning Program (NCCP Program). The Department offers the comments and recommendations presented below to assist the County of San Bernardino (County; the CEQA lead agency) in adequately identifying and/or mitigating the project's significant, or potentially significant, impacts on biological resources. The comments and recommendations are also offered to enable the Department to adequately review and comment on the proposed project with respect to impacts on biological resources. The Department recommends that the forthcoming DEIR address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable Department staff to adequately review and comment on the project, the DEIR should include a complete assessment of the flora and fauna within and adjacent to the project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats. The Department recommends that the DEIR specifically include:

1. An assessment of the various habitat types located within the project footprint, and a map that identifies the location of each habitat type. The Department recommends that floristic, alliance- and/or association based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions;

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the project. The Department's California Natural Diversity Database (CNDDB) in Sacramento should be contacted at (916) 322-2493 or bdb@wildlife.ca.gov to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed project. The Department recommends that CNDDB Field Survey Forms be completed and submitted to CNDDB to document survey results. Online forms can be obtained and submitted at: http://www.dfg.ca.gov/biogeodata/cnddb/submitting_data_to_cnddb.asp

Please note that the Department's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. The Department recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the project footprint and within offsite areas with the potential to be effected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the project area and should not be limited to resident species. Focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service, where necessary. Note that the Department generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following the Department's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see https://www.wildlife.ca.gov/Conservation/Plants);

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]);

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The DEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the project. To ensure that project impacts to biological resources are fully analyzed, the following information should be included in the DEIR:

1. A discussion of potential impacts from lighting, noise, human activity, and wildlife-human interactions created by zoning of development projects or other project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address project-related changes on drainage patterns and water quality within, upstream, and downstream of the project site, including: volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil

erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project site.

2. A discussion of potential indirect project impacts on biological resources, including resources in areas adjacent to the project footprint, such as nearby public lands (e.g. National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

3. A cumulative effects analysis developed as described under CEQA Guidelines § 15130. Please include all potential direct and indirect project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation Measures for Project Impacts to Biological Resources

The DEIR should include appropriate and adequate avoidance, minimization, and/or mitigation measures for all direct, indirect, and cumulative impacts that are expected to occur as a result of the construction and long-term operation and maintenance of the project. When proposing measures to avoid, minimize, or mitigate impacts, the Department recommends consideration of the following:

1. *Fully Protected Species*: Fully Protected Species (Fish and Game Code § 3511) have the potential to occur within or adjacent to the project area, including, but not limited to: white-tailed kite (*Elanus leucurus*). Fully protected species may not be taken or possessed at any time. Project activities described in the DEIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the project area. The Department also recommends that the DEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. The Department recommends that the Lead Agency include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species.

2. *Mitigation*: The Department considers adverse project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the DEIR should include mitigation measures for adverse project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement should be evaluated and discussed in detail. If onsite mitigation is not

feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

The DEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

3. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Migratory non-game native bird species are protected by international treaty under the federal Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et seq.*). In addition, sections 3503, 3503.5, and 3513 of the Fish and Game Code (FGC) also afford protective measures as follows: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by FGC or any regulation made pursuant thereto; Section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by FGC or any regulation adopted pursuant thereto; and Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

   The Department recommends that the DEIR include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: project phasing and timing, monitoring of project-related noise (where applicable), sound walls, and buffers, where appropriate. The DEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the project site. The Department recommends that pre-construction surveys be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner. Because different species commence nesting at different times of the year, the Department does not recommend relying on seasonal restrictions to preclude impacts to nesting birds. Rather, we recommend that pre-construction surveys be required regardless of the time of year.

4. *Burrowing Owl*: The Department is concerned that burrowing owls could potentially occupy areas very close to and/or within the project site. In the Department's

opinion, the potential for owls to occur within the project site and particularly to forage within the project site is high. The project has the potential to cause the loss of nesting and/or foraging habitat for burrowing owl.

The Department recommends that the City of Fontana follow the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012); available for download from the Department's website:

https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. The Department expects that the City of Fontana will follow the *Staff Report on Burrowing Owl Mitigation*, which specifies that the steps for project impact evaluations include:

a. A habitat assessment;
b. Surveys; and
c. An impact assessment.

As stated in the *Staff Report on Burrowing Owl Mitigation*, the three progressive steps are effective in evaluating whether a project will result in impacts to burrowing owls, and the information gained from the steps will inform any subsequent avoidance, minimization, and mitigation measures. Habitat assessments are conducted to evaluate the likelihood that a site supports burrowing owl. Burrowing owl surveys provide information needed to determine the potential effects of proposed projects and activities on burrowing owls, and to avoid take in accordance with FGC sections 86, 3503, and 3503.5. Impact assessments evaluate the extent to which burrowing owls and their habitat may be impacted, directly or indirectly, on and within a reasonable distance of a proposed CEQA project activity or non-CEQA project.

5. *Moving out of Harm's Way:* The proposed project is anticipated to result in the clearing of natural habitats that support native species. To avoid direct mortality, the Department recommends that the lead agency condition the DEIR to require that a Department-approved qualified biologist be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., the Department does not recommend relocation to other areas). Furthermore it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting project impacts associated with habitat loss.

6. *Translocation of Species*: The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare,

threatened, or endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful. Translocation

California Endangered Species Act

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to the California Endangered Species Act (CESA). The Department recommends that a CESA ITP be obtained if the project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the project. CESA ITPs are issued to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

The Department encourages early consultation, as significant modification to the proposed project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. Please note that the proposed avoidance, minimization, and mitigation measures must be sufficient for the Department to conclude that the project's impacts are fully mitigated and the measures, when taken in aggregate, must meet the full mitigation standard. Revisions to the California Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA ITP unless the Project CEQA document addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit.

Lake and Streambed Alteration Program

Fish and Game Code section 1602 requires an entity to notify the Department prior to commencing any activity that may do one or more of the following: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or Deposit debris, waste or other materials that could pass into any river, stream or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

Upon receipt of a complete notification, the Department determines if the proposed project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your project that would eliminate or reduce harmful impacts to fish and wildlife resources.

The Department's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if necessary, the DEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with the Department is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Lake or Streambed Alteration notification package, please go to https://www.wildlife.ca.gov/Conservation/LSA/Forms.

Additional Comments and Recommendations

California is experiencing one of the most severe droughts on record. To ameliorate the water demands of this project, the Department recommends incorporation of water-wise concepts in project landscape design plans. In particular the Department recommends xeriscaping with locally native California species, and installing water-efficient and targeted irrigation systems (such as drip irrigation). Local water agencies/districts, and resource conservation districts in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens (for example the Riverside-Corona Resource Conservation District in Riverside). Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: http://saveourwater.com/what-you-can-do/tips/landscaping/

Further Coordination

The Department appreciates the opportunity to comment on the NOP of a DEIR for the Western Realco Bloomington Facility Project (SCH No. 2016031085) and recommends that the County address the Department's comments and concerns in the forthcoming DEIR. If you should have any questions pertaining to the comments provided in this letter, or wish to schedule a meeting and/or site visit, please contact Gabriele Quillman at (909) 980-3818or at gabriele.quillman@wildlife.ca.gov.

Sincerely,

For Leslie MacNair
Regional Manager

Literature Cited

California Department of Fish and Game. (CDFG). 2012. Staff report on burrowing owl mitigation. State of California, Natural Resources Agency. Available for download at: https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

Salas Puente, Ruben D

From: Melody Segura <msegura@rialtoca.gov>
Sent: Tuesday, April 19, 2016 11:19 AM
To: 'kevin.white@lus.sbcounty.gov'
Cc: Gina Gibson
Subject: RE: Western Realco Bloomington Facility

Importance: High

Dear Mr. White,

Would you please send us the traffic study and the site plan for the Western Realco Bloomington Facility Project located on the Northwest corner of Cedar Avenue and Jurupa Avenue. Thank you for your assistance.

Best,
Melody Segura
Intern
City of Rialto/Development Services
909-820-2525 x 2211

Please consider the environment before printing this e-mail.

The information in this e-mail and any attachments are for the sole use of the intended recipient and may contain privileged and confidential information. If you are not the intended recipient, any use, disclosure, copying or distribution of this message or attachment is strictly prohibited. If you believe that you have received this e-mail in error, please contact the sender immediately and delete the e-mail and all of its attachments.

CITY OF FONTANA
C A L I F O R N I A

April 20, 2016

Kevin White
County of San Bernardino
385 North Arrowhead Ave, 1st Floor
San Bernardino, CA 92415

RE: Western Realco Bloomington Facility Notice of Preparation

Dear Mr. White:

Thank you for the opportunity to review and comment on the Notice of Preparation (NOP) for Draft Program Environmental Impact Report (DEIR) for the Western Realco Bloomington Facility Notice of Preparation. The City of Fontana appreciates the County of San Bernardino outreach efforts as part of the NOP process. We look forward to working with your agency throughout the project. Once available, please send a copy of the Draft Environmental Impact Report, and associated technical studies to my attention. My contact information is provided below:

Rina Leung
Assistant Planner
8353 Sierra Avenue
Fontana, CA 92335
(909) 350-6723
jtroyer@fontana.org

Thank you for inviting the City of Fontana to participate in the public review process.

Respectfully,

Rina Leung
Assistant Planner

825 East Third Street, San Bernardino, CA 92415-0835 | Phone: 909.387.8109 Fax: 909.387.7876
www.SBCounty.gov

SAN BERNARDINO COUNTY

Department of Public Works

Environmental & Construction • Flood Control
Operations • Solid Waste Management
Surveyor • Transportation

Gerry Newcombe
Director

April 21, 2016

San Bernardino County
Land Use Services Department
Kevin White, Senior Planner
Kevin.White@lus.sbcounty.gov

File: 10(ENV)-4.01

RE: CEQA - NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE WESTERN REALCO BLOOMINGTON FACILITY FOR THE COUNTY OF SAN BERNARDINO LAND USE SERVICES DEPARTMENT

Dear Mr. White:

Thank you for giving the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. **We received this request on March 24, 2016** and pursuant to our review, the following comments are provided:

Permits/Operations Support Division (Melissa Walker, Chief, 909-387-7995):

1. Any work affecting the San Bernardino County Flood Control District (District) parcels would need a Flood Control Permit since these parcels are for Comprehensive Storm Drain Plan (CSDP) 3-4 which is a master planned facility.

Flood Control Planning Division (David Lovell, PWE III, 909-387-7964):

1. We have reviewed the NOP and the project impacts to the District will include a Flood Control Easement going through the center of the property. We request that consideration in the NOP be given to the Facility improvements in CSDP #3. Also, in our cursory review, it appears the District right-of-way is about 50 ft., and not 25 ft. as indicated in the NOP. We can be more specific as the document is developed. The CSDP #3 document can be found in the DPW Planning Division.

Water Resources Division (Mary Lou Mermilliod, PWE III, 909-387-8213):

1. The NOP states that the existing District right-of-way would be abandoned and an alternate easement would be dedicated to the District to facilitate future drainage improvements. Details of this should be discussed with the District's Right-of-Way, Section Chief, Tom Williams at (909) 387-8256.

If you have any questions, please contact the individuals who provided the specific comment, as listed above.

Sincerely,

NIDHAM ARAM ALRAYES, MSCE, PE, QSD/P
Public Works Engineer III
Environmental Management

NAA:PE:sr

BOARD OF SUPERVISORS
ROBERT A. LOVINGOOD, Vice Chairman, First District | JANICE RUTHERFORD, Second District | JAMES RAMOS, Chairman, Third District | CURT HAGMAN, Fourth District | JOSIE GONZALES, Fifth District
GREGORY C. DEVEREAUX, Chief Executive Officer

SOUTHERN CALIFORNIA
ASSOCIATION of
GOVERNMENTS

Main Office

818 West 7th Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

Officers

President
Cheryl Viegas-Walker, El Centro

First Vice President
Michele Martinez, Santa Ana

Second Vice President
Margaret Finlay, Duarte

Immediate Past President
Carl Morehouse, San Buenaventura

Executive/Administration Committee Chair

Cheryl Viegas-Walker, El Centro

Policy Committee Chairs

Community, Economic and Human Development
Bill Jahn, Big Bear Lake

Energy & Environment
Deborah Robertson, Rialto

Transportation
Alan Wapner, San Bernardino Associated Governments

April 22, 2016

Mr. Kevin White, Senior Planner
County of San Bernardino
Land Use Services Department – Planning Division
385 North Arrowhead Avenue, First Floor
San Bernardino, California 92415
E-mail: kevin.white@lus.sbcounty.gov

RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Western Realco Bloomington Facility [SCAG NO. IGR8802]

Dear Mr. White,

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the Western Realco Bloomington Facility ("proposed project") to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review (IGR) of programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372. Additionally, SCAG reviews the Environmental Impact Reports of projects of regional significance for consistency with regional plans pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.

SCAG is also the designated Regional Transportation Planning Agency under state law, and is responsible for preparation of the Regional Transportation Plan (RTP) including the Sustainable Communities Strategy ((SCS) pursuant to Senate Bill (SB) 375. As the clearinghouse for regionally significant projects per Executive Order 12372, SCAG reviews the consistency of local plans, projects, and programs with regional plans.[1] Guidance provided by these reviews is intended to assist local agencies such as local jurisdictions and project proponents to take actions that help contribute to the attainment of the regional goals and policies in the RTP/SCS.

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Western Realco Bloomington Facility in unincorporated San Bernardino County. The proposed project includes the construction of a 676,983 square foot distribution building with associated facilities and improvements such as a guard booth, parking, bicycle racks, landscaping and detention basins on approximately 34.54 acres.

When available, please send environmental documentation to SCAG's *office in Los Angeles or by email to sunl@scag.ca.gov* providing, at a minimum, the full public comment period for review. If you have any questions regarding the attached comments, please contact the Inter-Governmental Review (IGR) Program, attn.: Lijin Sun, Senior Regional Planner, at (213) 236-1882 or sunl@scag.ca.gov. Thank you.

Sincerely,

Ping Chang

Ping Chang
Acting Manager, Compliance and Performance Monitoring

[1] Lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the 2016 RTP/SCS for the purpose of determining consistency for CEQA. Any "consistency" finding by SCAG pursuant to the IGR process should not be construed as a determination of consistency with the 2016 RTP/SCS for CEQA.

COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE WESTERN REALCO BLOOMINGTON FACILITY [SCAG NO. IGR8802]

CONSISTENCY WITH RTP/SCS

SCAG reviews environmental documents for regionally significant projects for their consistency with the adopted RTP/SCS. For the purpose of determining consistency with CEQA, lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the RTP/SCS.

2016 RTP/SCS GOALS

The SCAG Regional Council adopted the 2016 RTP/SCS in April 2016. The 2016 RTP/SCS seeks to improve mobility, promote sustainability, facilitate economic development and preserve the quality of life for the residents in the region. The long-range visioning plan balances future mobility and housing needs with goals for the environment, the regional economy, social equity and environmental justice, and public health (see http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx). The goals included in the 2016 RTP/SCS may be pertinent to the proposed project. These goals are meant to provide guidance for considering the proposed project within the context of regional goals and policies. Among the relevant goals of the 2016 RTP/SCS are the following:

SCAG 2016 RTP/SCS GOALS	
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region*
RTP/SCS G3:	*Ensure travel safety and reliability for all people and goods in the region*
RTP/SCS G4:	*Preserve and ensure a sustainable regional transportation system*
RTP/SCS G5:	*Maximize the productivity of our transportation system*
RTP/SCS G6:	*Protect the environment and health for our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking)*
RTP/SCS G7:	*Actively encourage and create incentives for energy efficiency, where possible*
RTP/SCS G8:	*Encourage land use and growth patterns that facilitate transit and active transportation*
RTP/SCS G9:	*Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies**
	**SCAG does not yet have an agreed-upon security performance measure.*

For ease of review, we encourage the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency or non-applicability of the goals and supportive analysis in a table format. Suggested format is as follows:

SCAG 2016 RTP/SCS GOALS		
	Goal	Analysis
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why;* *DEIR page number reference*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why;* *DEIR page number reference*
etc.		etc.

2016 RTP/SCS STRATEGIES

To achieve the goals of the 2016 RTP/SCS, a wide range of land use and transportation strategies are included in the 2016 RTP/SCS. Technical appendances of the 2016 RTP/SCS provide additional supporting information in detail. To view the 2016 RTP/SCS, please visit: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. The 2016 RTP/SCS builds upon the progress from the 2012 RTP/SCS and continues to focus on integrated, coordinated, and balanced planning for land use and transportation that the SCAG region strives toward a more sustainable region, while the region meets and exceeds in meeting all of applicable statutory requirements pertinent to the 2016 RTP/SCS. These strategies within the regional context are provided as guidance for lead agencies such as local jurisdictions when the proposed project is under consideration.

DEMOGRAPHICS AND GROWTH FORECASTS

Local input plays an important role in developing a reasonable growth forecast for the 2016 RTP/SCS. SCAG used a bottom-up local review and input process and engaged local jurisdictions in establishing the base geographic and socioeconomic projections including population, household and employment. At the time of this letter, the most recently adopted SCAG jurisdictional-level growth forecasts that were developed in accordance with the bottom-up local review and input process consist of the 2020, 2035, and 2040 population, households and employment forecasts. To view them, please visit http://www.scag.ca.gov/Documents/2016GrowthForecastByJurisdiction.pdf. The growth forecasts for the region and applicable jurisdictions are below.

	Adopted SCAG Region Wide Forecasts			Adopted Unincorporated San Bernardino County Forecasts		
	Year 2020	Year 2035	Year 2040	Year 2020	Year 2035	Year 2040
Population	19,663,000	22,091,000	22,138,800	304,300	340,400	344,100
Households	6,458,000	7,325,000	7,412,300	99,900	110,500	111,300
Employment	8,414,000	9,441,000	9,871,500	69,600	88,300	91,100

MITIGATION MEASURES

SCAG staff recommends that you review the Final Program Environmental Impact Report (Final PEIR) for the 2016 RTP/SCS for guidance, as appropriate. SCAG's Regional Council certified the Final PEIR and adopted the associated Findings of Fact and a Statement of Overriding Considerations (FOF/SOC) and Mitigation Monitoring and Reporting Program (MMRP) on April 7, 2016 (please see: http://scagrtpscs.net/Pages/FINAL2016PEIR.aspx). The Final PEIR includes a list of project-level performance standards-based mitigation measures that may be considered for adoption and implementation by lead, responsible, or trustee agencies in the region, as applicable and feasible. Project-level mitigation measures are within responsibility, authority, and/or jurisdiction of project-implementing agency or other public agency serving as lead agency under CEQA in subsequent project- and site- specific design, CEQA review, and decision-making processes, to meet the performance standards for each of the CEQA resource categories.

Salas Puente, Ruben D

From: Cruz <cruzsembello@hotmail.com>
Sent: Wednesday, April 13, 2016 8:24 PM
To: White, Kevin - LUS
Subject: April 13 Scoping Meeting

Hello! Kevin,
Thank you for today's "Scoping" meeting this morning. Wanted to reiterate some of my questions/comments.

1. Please consider having evening meeting for those not able to attend today's morning meeting. There are many concerns in my neighborhood on Stallion Lane.Meeting dates should be available in advance to all. MAC does not have website or does not publish meetings with agenda in advance so we may attend meetings. Especially in regards to development.

2. **Set Back-** to deter Graffiti. This would include landscaping.

3. **Lighting**-I know there is ordinance and guidelines in place...however do not want bright lights shining into homes.

4. **Linden Street Exit**-Consideration would be appreciated to detour traffic to Santa Ana, Jurupa or Cedar. Zimmerman Elementary School is across the street with already congestion. Safety issue for children/parents.

5. **Air Quality**-I know that is part of EIR...Truck, exhaust emissions are a concern because of surrounding schools and residents. How many trucks/vehicles will be exiting facility and adding to already existing problems.

6. **Safety**-Will there be added law enforcement to area due to added traffic issues.

Again, thank you for your attention. Please feel free to contact me if any questions.

Regards,

Cruz Baca (Sembello)
Owner: 18484 Stallion Lane
Bloomington, CA 92316

Phone: 626 806-9583

Salas Puente, Ruben D

From: ken graham <kengraham0000@gmail.com>
Sent: Wednesday, April 20, 2016 8:30 AM
To: White, Kevin - LUS
Subject: scoping meeting

Good morning Mr. White, I would like to apologize for talking to the MAC representative and missing the last statement of the meeting.I did not realize the meeting was ending. my main concerns about this project are,
(1) There is no way for the big rigs to turn left and go north so as a result they will be turning into residential area to make three right hand turns to end up on Jurupa and then turn left on Cedar Ave. to end up going north. This is already a problem since they erected a center island and residents can't turn left exiting residential streets now. Everyone is forced to use Jurupa to turn left in the neighborhood now and the added traffic of the big rigs using this route also would just clog up the light at Cedar since there is no dedicated left turn lane. We even have double trailers coming up 14 th street right now.
(2) The traffic at shift end and shift start from the sheer number of employees this distribution center would require using the same roads as children walking to and from school, and also getting rides to school would definitely create a safety hazard. There
are two elementary schools within a half mile, a high school within one mile, and another juinior high school within one mile,and a park at the corner of Linden and Jurupa with kids playing and little league baseball being played all the time.
(3) The nighttime noise of a business of this nature probably can't be muffled
(4) The hazards of chemical spills if chemical are allowed to be loaded and unloaded at this location. Would there be any restrictions since this is a residential area.
(5) what is the reason for no dirt disturbance for the last 10 - 15 years through code enforcement agency.
(6) Is this land for sale or is eminent domain going to be used to acquire all or part of said land.
(7) Commercial land just as large is already up for sale even closer to the 10 frwy than this site and it wouldn't even have to be rezoned.

Salas Puente, Ruben D

From: ken graham <kengraham0000@gmail.com>
Sent: Wednesday, April 20, 2016 8:30 AM
To: White, Kevin - LUS
Subject: scoping meeting

Good morning Mr. White, I would like to apologize for talking to the MAC representative and missing the last statement of the meeting.I did not realize the meeting was ending. my main concerns about this project are,
(1) There is no way for the big rigs to turn left and go north so as a result they will be turning into residential area to make three right hand turns to end up on Jurupa and then turn left on Cedar Ave. to end up going north. This is already a problem since they erected a center island and residents can't turn left exiting residential streets now. Everyone is forced to use Jurupa to turn left in the neighborhood now and the added traffic of the big rigs using this route also would just clog up the light at Cedar since there is no dedicated left turn lane. We even have double trailers coming up 14 th street right now.
(2) The traffic at shift end and shift start from the sheer number of employees this distribution center would require using the same roads as children walking to and from school, and also getting rides to school would definitely create a safety hazard. There
are two elementary schools within a half mile, a high school within one mile, and another juinior high school within one mile,and a park at the corner of Linden and Jurupa with kids playing and little league baseball being played all the time.
(3) The nighttime noise of a business of this nature probably can't be muffled
(4) The hazards of chemical spills if chemical are allowed to be loaded and unloaded at this location. Would there be any restrictions since this is a residential area.
(5) what is the reason for no dirt disturbance for the last 10 - 15 years through code enforcement agency.
(6) Is this land for sale or is eminent domain going to be used to acquire all or part of said land.
(7) Commercial land just as large is already up for sale even closer to the 10 frwy than this site and it wouldn't even have to be rezoned.

SAN BERNARDINO COUNTY

County of San Bernardino

EIR Public Scoping Meeting

Western Realco Bloomington Facility Project
San Bernardino County Government Center
April 13, 2016 at 9:00 a.m.

This form may be used to submit comments and suggestions in regard to environmental issues that should be included in the Draft Environmental Impact Report (EIR) for the proposed Western Realco Bloomington Facility Project.

Name (please print) PAMELA VALDEZ

Mailing Address 18375 STALLION LN

Telephone No. (daytime) BLM. CA 92316

Fax No.

E-mail address

Organization/Affiliation HOMEOWNER / BLOOMINGTON

The Draft EIR for the proposed Western Realco Bloomington Facility Project should address the following potentially significant environmental impacts:

TO CLOSE TO PUBLIC ELEMENTARY SCHOOL AND SURROUNDING HOMES.
WILL IMPACT NEIGHBORHOOD TRAFFIC WITH DAY USE OF OUR SURROUNDING STREETS

Signature

Thank you for your assistance.

Written comments will be accepted until **April 22, 2016** and may be directed to Kevin White, Senior Planner, at the Land Use Services Department, Planning Division, located at 385 North Arrowhead Avenue, First Floor, San Bernardino, CA 92415-0182, Fax (909) 387-3223 or E-mail Kevin.White@lus.sbcounty.gov.

To Mail, Fold and Staple

Appendix B
Air Quality, Greenhouse Gas, and Energy

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

Western Realco AQ

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	676.98	1000sqft	15.54	676,983.00	0
Other Non-Asphalt Surfaces	571.94	1000sqft	13.13	571,940.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - glitch

Construction Phase - Project construction anticipated to last 10 months. Carpentry, paving, and architectural coating assumed to occur simultaneously.

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - grading hauling is cut and fill on site.

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rate per TIA and SCAQMD

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Area Coating - Area Coating 50 g/L VOC-Non-Residential Interior and Exterior as project feature

Water And Wastewater - water usage assumes 20 g/person/day person/2500 sf

Construction Off-road Equipment Mitigation - per Rule 403

Area Mitigation - low VOC paint

Water Mitigation -

Operational Off-Road Equipment - operational equipment calculated separately

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00

tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	16
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	NumDays	440.00	140.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	45.00	20.00
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	10/20/2017	11/24/2017
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	2/24/2017	3/10/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	4/8/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	2/11/2017
tblGrading	AcresOfGrading	50.00	112.50
tblLandUse	LandUseSquareFeet	676,980.00	676,983.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.07	0.07

tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00

tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleTrips	ST_TR	2.59	1.68
tblVehicleTrips	SU_TR	2.59	1.68
tblVehicleTrips	WD_TR	2.59	1.68
tblWater	IndoorWaterUseRate	156,551,625.00	3,308,360.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	50.7605	69.6857	93.9322	0.1872	18.2675	3.4088	21.0231	9.9840	3.1843	12.5193						
Total	**50.7605**	**69.6857**	**93.9322**	**0.1872**	**18.2675**	**3.4088**	**21.0231**	**9.9840**	**3.1843**	**12.5193**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	50.7605	69.6857	93.9322	0.1872	8.4976	3.4088	11.9064	4.2987	3.1843	6.8339						
Total	**50.7605**	**69.6857**	**93.9322**	**0.1872**	**8.4976**	**3.4088**	**11.9064**	**4.2987**	**3.1843**	**6.8339**						

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.48**	**0.00**	**43.36**	**56.94**	**0.00**	**45.41**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Energy	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Mobile	5.4364	39.0753	75.1677	0.2003	10.4745	0.5872	11.0617	2.7972	0.5402	3.3374						
Total	**36.5643**	**39.4656**	**75.6245**	**0.2026**	**10.4745**	**0.6172**	**11.0917**	**2.7972**	**0.5703**	**3.3674**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Energy	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Mobile	5.4364	39.0753	75.1677	0.2003	10.4745	0.5872	11.0617	2.7972	0.5402	3.3374						
Total	**36.5643**	**39.4656**	**75.6245**	**0.2026**	**10.4745**	**0.6172**	**11.0917**	**2.7972**	**0.5703**	**3.3674**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	2/11/2017	3/10/2017	5	20	
3	Grading	Grading	3/11/2017	4/7/2017	5	20	
4	Building Construction	Building Construction	5/13/2017	11/24/2017	5	140	
5	Paving	Paving	5/13/2017	11/24/2017	5	140	
6	Architectural Coating	Architectural Coating	5/13/2017	11/24/2017	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,873,385; Non-Residential Outdoor: 624,462 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	277.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	525.00	205.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	105.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9981	0.0000	2.9981	0.4539	0.0000	0.4539						
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.9981**	**2.1252**	**5.1233**	**0.4539**	**1.9797**	**2.4337**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2300	3.5039	2.6347	0.0102	0.2413	0.0544	0.2957	0.0661	0.0501	0.1161						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.2874**	**3.5742**	**3.5628**	**0.0123**	**0.4090**	**0.0556**	**0.4646**	**0.1105**	**0.0512**	**0.1617**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2817	0.0000	1.2817	0.1941	0.0000	0.1941						
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**1.2817**	**2.1252**	**3.4069**	**0.1941**	**1.9797**	**2.1738**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2300	3.5039	2.6347	0.0102	0.2413	0.0544	0.2957	0.0661	0.0501	0.1161						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.2874**	**3.5742**	**3.5628**	**0.0123**	**0.4090**	**0.0556**	**0.4646**	**0.1105**	**0.0512**	**0.1617**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0688	0.0844	1.1138	2.5300e-003	0.2012	1.4400e-003	0.2026	0.0534	1.3300e-003	0.0547						
Total	**0.0688**	**0.0844**	**1.1138**	**2.5300e-003**	**0.2012**	**1.4400e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**7.7233**	**2.7542**	**10.4776**	**4.2454**	**2.5339**	**6.7793**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0688	0.0844	1.1138	2.5300e-003	0.2012	1.4400e-003	0.2026	0.0534	1.3300e-003	0.0547						
Total	**0.0688**	**0.0844**	**1.1138**	**2.5300e-003**	**0.2012**	**1.4400e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**						

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.9874	0.0000	11.9874	3.9543	0.0000	3.9543						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**11.9874**	**3.3172**	**15.3046**	**3.9543**	**3.0518**	**7.0062**						

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0764	0.0937	1.2375	2.8100e-003	0.2236	1.6000e-003	0.2252	0.0593	1.4700e-003	0.0608						
Total	**0.0764**	**0.0937**	**1.2375**	**2.8100e-003**	**0.2236**	**1.6000e-003**	**0.2252**	**0.0593**	**1.4700e-003**	**0.0608**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.1246	0.0000	5.1246	1.6905	0.0000	1.6905						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**5.1246**	**3.3172**	**8.4418**	**1.6905**	**3.0518**	**4.7423**						

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0764	0.0937	1.2375	2.8100e-003	0.2236	1.6000e-003	0.2252	0.0593	1.4700e-003	0.0608						
Total	**0.0764**	**0.0937**	**1.2375**	**2.8100e-003**	**0.2236**	**1.6000e-003**	**0.2252**	**0.0593**	**1.4700e-003**	**0.0608**						

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	1.6048	16.2802	19.2985	0.0445	1.2880	0.2643	1.5524	0.3678	0.2431	0.6109						
Worker	2.0067	2.4608	32.4845	0.0738	5.8683	0.0419	5.9102	1.5563	0.0387	1.5950						
Total	**3.6115**	**18.7410**	**51.7830**	**0.1183**	**7.1563**	**0.3063**	**7.4626**	**1.9240**	**0.2818**	**2.2058**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	1.6048	16.2802	19.2985	0.0445	1.2880	0.2643	1.5524	0.3678	0.2431	0.6109						
Worker	2.0067	2.4608	32.4845	0.0738	5.8683	0.0419	5.9102	1.5563	0.0387	1.5950						
Total	**3.6115**	**18.7410**	**51.7830**	**0.1183**	**7.1563**	**0.3063**	**7.4626**	**1.9240**	**0.2818**	**2.2058**						

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**						

3.6 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**						

3.6 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**						

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.3483					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**41.6806**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4013	0.4922	6.4969	0.0148	1.1737	8.3900e-003	1.1820	0.3113	7.7300e-003	0.3190						
Total	**0.4013**	**0.4922**	**6.4969**	**0.0148**	**1.1737**	**8.3900e-003**	**1.1820**	**0.3113**	**7.7300e-003**	**0.3190**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.3483					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**41.6806**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4013	0.4922	6.4969	0.0148	1.1737	8.3900e-003	1.1820	0.3113	7.7300e-003	0.3190						
Total	**0.4013**	**0.4922**	**6.4969**	**0.0148**	**1.1737**	**8.3900e-003**	**1.1820**	**0.3113**	**7.7300e-003**	**0.3190**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4364	39.0753	75.1677	0.2003	10.4745	0.5872	11.0617	2.7972	0.5402	3.3374						
Unmitigated	5.4364	39.0753	75.1677	0.2003	10.4745	0.5872	11.0617	2.7972	0.5402	3.3374						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1,137.33	1,137.33	1137.33	4,874,259	4,874,259
Total	1,137.33	1,137.33	1,137.33	4,874,259	4,874,259

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527950	0.073940	0.193966	0.000000	0.000000	0.000000	0.000000	0.204045	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
NaturalGas Unmitigated	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	3969.16	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Total		**0.0428**	**0.3891**	**0.3269**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	3.96916	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Total		**0.0428**	**0.3891**	**0.3269**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Unmitigated	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3439					0.0000	0.0000		0.0000	0.0000						
Consumer Products	24.7287					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0125	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Total	**31.0851**	**1.2300e-003**	**0.1299**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3439					0.0000	0.0000		0.0000	0.0000						
Consumer Products	24.7287					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0125	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Total	**31.0851**	**1.2300e-003**	**0.1299**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Western Realco AQ

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	676.98	1000sqft	15.54	676,983.00	0
Other Non-Asphalt Surfaces	571.94	1000sqft	13.13	571,940.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - glitch

Construction Phase - Project construction anticipated to last 10 months. Carpentry, paving, and architectural coating assumed to occur simultaneously.

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - grading hauling is cut and fill on site.

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rate per TIA and SCAQMD

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Area Coating - Area Coating 50 g/L VOC-Non-Residential Interior and Exterior as project feature

Water And Wastewater - water usage assumes 20 g/person/day person/2500 sf

Construction Off-road Equipment Mitigation - per Rule 403

Area Mitigation - low VOC paint

Water Mitigation -

Operational Off-Road Equipment - operational equipment calculated separately

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00

tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	16
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	NumDays	440.00	140.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	45.00	20.00
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	10/20/2017	11/24/2017
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	2/24/2017	3/10/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	4/8/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	2/11/2017
tblGrading	AcresOfGrading	50.00	112.50
tblLandUse	LandUseSquareFeet	676,980.00	676,983.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.07	0.07

tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00

tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleTrips	ST_TR	2.59	1.68
tblVehicleTrips	SU_TR	2.59	1.68
tblVehicleTrips	WD_TR	2.59	1.68
tblWater	IndoorWaterUseRate	156,551,625.00	3,308,360.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	50.7040	69.6921	91.0647	0.1787	18.2675	3.4114	21.0231	9.9840	3.1866	12.5193						
Total	**50.7040**	**69.6921**	**91.0647**	**0.1787**	**18.2675**	**3.4114**	**21.0231**	**9.9840**	**3.1866**	**12.5193**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	50.7040	69.6921	91.0647	0.1787	8.4976	3.4114	11.9090	4.2987	3.1866	6.8339						
Total	**50.7040**	**69.6921**	**91.0647**	**0.1787**	**8.4976**	**3.4114**	**11.9090**	**4.2987**	**3.1866**	**6.8339**						

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.48**	**0.00**	**43.35**	**56.94**	**0.00**	**45.41**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Energy	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Mobile	5.4146	40.5721	74.6206	0.1910	10.4745	0.5892	11.0637	2.7972	0.5421	3.3392						
Total	**36.5424**	**40.9624**	**75.0774**	**0.1933**	**10.4745**	**0.6192**	**11.0937**	**2.7972**	**0.5721**	**3.3693**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Energy	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Mobile	5.4146	40.5721	74.6206	0.1910	10.4745	0.5892	11.0637	2.7972	0.5421	3.3392						
Total	**36.5424**	**40.9624**	**75.0774**	**0.1933**	**10.4745**	**0.6192**	**11.0937**	**2.7972**	**0.5721**	**3.3693**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	2/11/2017	3/10/2017	5	20	
3	Grading	Grading	3/11/2017	4/7/2017	5	20	
4	Building Construction	Building Construction	5/13/2017	11/24/2017	5	140	
5	Paving	Paving	5/13/2017	11/24/2017	5	140	
6	Architectural Coating	Architectural Coating	5/13/2017	11/24/2017	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,873,385; Non-Residential Outdoor: 624,462 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	277.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	525.00	205.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	105.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9981	0.0000	2.9981	0.4539	0.0000	0.4539						
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**2.9981**	**2.1252**	**5.1233**	**0.4539**	**1.9797**	**2.4337**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2387	3.6422	2.9289	0.0101	0.2413	0.0545	0.2958	0.0661	0.0502	0.1162						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.2924**	**3.7172**	**3.7202**	**0.0121**	**0.4090**	**0.0557**	**0.4647**	**0.1105**	**0.0513**	**0.1618**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2817	0.0000	1.2817	0.1941	0.0000	0.1941						
Off-Road	4.0482	42.6971	33.8934	0.0399		2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**	**33.8934**	**0.0399**	**1.2817**	**2.1252**	**3.4069**	**0.1941**	**1.9797**	**2.1738**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2387	3.6422	2.9289	0.0101	0.2413	0.0545	0.2958	0.0661	0.0502	0.1162						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.2924**	**3.7172**	**3.7202**	**0.0121**	**0.4090**	**0.0557**	**0.4647**	**0.1105**	**0.0513**	**0.1618**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**18.0663**	**2.7542**	**20.8205**	**9.9307**	**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0644	0.0901	0.9496	2.3000e-003	0.2012	1.4400e-003	0.2026	0.0534	1.3300e-003	0.0547						
Total	**0.0644**	**0.0901**	**0.9496**	**2.3000e-003**	**0.2012**	**1.4400e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454						
Off-Road	4.8382	51.7535	39.3970	0.0391		2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**	**39.3970**	**0.0391**	**7.7233**	**2.7542**	**10.4776**	**4.2454**	**2.5339**	**6.7793**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0644	0.0901	0.9496	2.3000e-003	0.2012	1.4400e-003	0.2026	0.0534	1.3300e-003	0.0547						
Total	**0.0644**	**0.0901**	**0.9496**	**2.3000e-003**	**0.2012**	**1.4400e-003**	**0.2026**	**0.0534**	**1.3300e-003**	**0.0547**						

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					11.9874	0.0000	11.9874	3.9543	0.0000	3.9543						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**11.9874**	**3.3172**	**15.3046**	**3.9543**	**3.0518**	**7.0062**						

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0716	0.1001	1.0551	2.5600e-003	0.2236	1.6000e-003	0.2252	0.0593	1.4700e-003	0.0608						
Total	**0.0716**	**0.1001**	**1.0551**	**2.5600e-003**	**0.2236**	**1.6000e-003**	**0.2252**	**0.0593**	**1.4700e-003**	**0.0608**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.1246	0.0000	5.1246	1.6905	0.0000	1.6905						
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518						
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**5.1246**	**3.3172**	**8.4418**	**1.6905**	**3.0518**	**4.7423**						

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0716	0.1001	1.0551	2.5600e-003	0.2236	1.6000e-003	0.2252	0.0593	1.4700e-003	0.0608						
Total	**0.0716**	**0.1001**	**1.0551**	**2.5600e-003**	**0.2236**	**1.6000e-003**	**0.2252**	**0.0593**	**1.4700e-003**	**0.0608**						

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	1.7061	16.7085	22.3122	0.0442	1.2880	0.2669	1.5549	0.3678	0.2455	0.6132						
Worker	1.8783	2.6269	27.6974	0.0671	5.8683	0.0419	5.9102	1.5563	0.0387	1.5950						
Total	**3.5844**	**19.3354**	**50.0096**	**0.1113**	**7.1563**	**0.3088**	**7.4651**	**1.9240**	**0.2841**	**2.2082**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	1.7061	16.7085	22.3122	0.0442	1.2880	0.2669	1.5549	0.3678	0.2455	0.6132						
Worker	1.8783	2.6269	27.6974	0.0671	5.8683	0.0419	5.9102	1.5563	0.0387	1.5950						
Total	**3.5844**	**19.3354**	**50.0096**	**0.1113**	**7.1563**	**0.3088**	**7.4651**	**1.9240**	**0.2841**	**2.2082**						

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**						

3.6 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**						

3.6 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456						
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**						

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.3483					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**41.6806**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.3757	0.5254	5.5395	0.0134	1.1737	8.3900e-003	1.1820	0.3113	7.7300e-003	0.3190						
Total	**0.3757**	**0.5254**	**5.5395**	**0.0134**	**1.1737**	**8.3900e-003**	**1.1820**	**0.3113**	**7.7300e-003**	**0.3190**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.3483					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						
Total	**41.6806**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**						

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.3757	0.5254	5.5395	0.0134	1.1737	8.3900e-003	1.1820	0.3113	7.7300e-003	0.3190						
Total	**0.3757**	**0.5254**	**5.5395**	**0.0134**	**1.1737**	**8.3900e-003**	**1.1820**	**0.3113**	**7.7300e-003**	**0.3190**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4146	40.5721	74.6206	0.1910	10.4745	0.5892	11.0637	2.7972	0.5421	3.3392						
Unmitigated	5.4146	40.5721	74.6206	0.1910	10.4745	0.5892	11.0637	2.7972	0.5421	3.3392						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1,137.33	1,137.33	1137.33	4,874,259	4,874,259
Total	1,137.33	1,137.33	1,137.33	4,874,259	4,874,259

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527950	0.073940	0.193966	0.000000	0.000000	0.000000	0.000000	0.204045	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
NaturalGas Unmitigated	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	3969.16	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Total		**0.0428**	**0.3891**	**0.3269**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	3.96916	0.0428	0.3891	0.3269	2.3300e-003		0.0296	0.0296		0.0296	0.0296						
Total		**0.0428**	**0.3891**	**0.3269**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Unmitigated	31.0851	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3439					0.0000	0.0000		0.0000	0.0000						
Consumer Products	24.7287					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0125	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Total	**31.0851**	**1.2300e-003**	**0.1299**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3439					0.0000	0.0000		0.0000	0.0000						
Consumer Products	24.7287					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0125	1.2300e-003	0.1299	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004						
Total	**31.0851**	**1.2300e-003**	**0.1299**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

1.0 INTRODUCTION

The purpose of this Health Risk Assessment is to evaluate potential health risks associated with Toxic Air Contaminants (TAC) including Diesel Particulate Matter (DPM) resulting from the implementation of the proposed Bloomington Industrial Warehouse Project (project) in the community of Bloomington, unincorporated San Bernardino County, California. This Health Risk Assessment was prepared in accordance with the requirements of the South Coast Air Quality Management District (SCAQMD) and guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to determine if health risks are likely to occur from the proposed project.

1.1 PROJECT LOCATION

The Project site is located in unincorporated San Bernardino County within the community of Bloomington, between the cities of Rialto and Fontana, just north of the San Bernardino and Riverside County line California; refer to Exhibit 1, *Regional Vicinity*. Nearby cities include Fontana to the west, Rialto to the east and Jurupa Valley to the south. The Project site is located approximately 1.5 miles south of Interstate 10 (I-10), immediately west of Cedar Avenue, north of Jurupa Avenue, and east of Linden Avenue; refer to Exhibit 2, *Site Vicinity*.

1.2 PROJECT DESCRIPTION

The Project would construct a single 676,983 square foot distribution building within an approximately 34.54-acre property, with associated facilities and improvements such as a guard booth, parking, bicycle racks, landscaping and detention basins; refer to Exhibit 3, *Site Plan*. All existing structures on the Project site would be demolished prior to Project construction.

Two detention basins would be located near the Project's southern boundary along Cedar Avenue and Jurupa Avenue. Landscaping would be provided and would represent approximately 15 percent of the site coverage. There would be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. All parking and site paving would be concrete and asphalt, and would represent approximately 38 percent of the site coverage. Truck access would be from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, four (4) grade level ramps, and 110 dock high doors.

The existing San Bernardino County Flood Control District (SBCFCD) parcels are linear parcels that bifurcate the middle of the Project site as part of a flood control easement associated with a railroad drainage master plan to accept/convey drainage from the rail use to the north. While there are no existing flood control facilities on the Project site, the easement is intended to facilitate the development of future flood control improvements by setting aside an alignment for this future facility. In order to accommodate the Project, this alignment would be abandoned in favor of one which would direct future flows east along the northern Project boundary and south along Cedar Avenue. The Project would dedicate the easement to SBCFCD to facilitate the future drainage improvements.

Exhibit 1 – *Regional Vicinity*

Exhibit 2 – *Site Vicinity*

Exhibit 3 –*Site Plan*

2.0 EXISTING SETTING

2.1 CLIMATE AND METEOROLOGY

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The project site lies within the northwestern portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

Climate

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin. These factors along with applicable regulations are discussed below.

The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100°F in recent years.

Meteorology

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

A temperature inversion is defined as an increase in temperature with height, or to the layer within which such an increase occurs. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O_3) observed during summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the project is located offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

2.2 TOXIC AIR CONTAMINANTS

TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Hazardous Air Pollutants (HAP) is a term used by the Federal Clean Air Act (FCAA) that includes a variety of pollutants generated or emitted by industrial production activities. Identified as TACs under the California Clean Air Act (CCAA), ten have been singled out through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. CARB provides emission inventories for only the larger air basins.

TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment

Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports.

Toxic contaminants often result from fugitive emissions during fuel storage and transfer activities, and from leaking valves and pipes. For example, the electronics industry, including semiconductor manufacturing, uses highly toxic chlorinated solvents in semiconductor production processes. Sources of air toxics go beyond industry, however. Automobile exhaust also contains toxic air pollutants such as benzene and 1,3-butadiene. The following are health effects related to common Toxic Air Contaminants:

Acetaldehyde. Acetaldehyde is directly emitted into the atmosphere and is also formed in the atmosphere from photochemical oxidation. Acetaldehyde is generated as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. Acetaldehyde is a carcinogen that can also cause chronic non-cancer toxicity in the respiratory system. Symptoms of chronic intoxication of acetaldehyde in humans resemble those of alcoholism. The primary short-term effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract. At higher exposure levels, erythematic, coughing, and pulmonary edema, and necrosis may also occur.

Benzene. Approximately 84 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. Benzene is highly carcinogenic and occurs throughout California. Benzene also has non-cancer health effects. Brief inhalation exposure to high concentrations can cause central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions. Exposure to liquid and vapor may irritate the skin, eyes, and upper respiratory tract. Redness and blisters may result from dermal exposure to benzene. Chronic inhalation of certain levels of benzene causes blood disorders because benzene specifically affects bone marrow, which produces blood cells. Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene.

1,3-Butadiene. The majority of 1,3-butadiene emissions comes from incomplete combustion of gasoline and diesel fuels. 1,3-butadiene has been identified as a carcinogen in California. Butadiene vapors at elevated levels cause neurological effects such as blurred vision, fatigue, headache, and vertigo. Dermal exposure to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, and can lead to frostbite. Chronic exposure to 1,3-butadiene via inhalation has been shown to result in an increase in cardiovascular diseases, and increase in the occurrence

of leukemia, and an increased incidence of respiratory, bladder, stomach, and lymphato-hematopoietic cancers.

Carbon Tetrachloride. The primary sources of carbon tetrachloride in California include chemical manufacturing facilities and petroleum refineries. Carbon tetrachloride has been identified as a probable human carcinogen in California. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant. Acute inhalation and oral exposures to high levels of carbon tetrachloride can damage the liver and kidneys in humans and animals. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting.

Chromium, Hexavalent. Chromium planting and other metal finishing processes are the primary sources of hexavalent chromium emissions in California. California has identified hexavalent chromium as a carcinogen. Exposure to inhaled hexavalent chromium may result in lung cancer, and short-term exposure symptoms may include renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Inhalation exposure of hexavalent exposure targets the respiratory tract. Exposure to very high concentrations of hexavalent chromium can include burns, effects on the respiratory tract such as perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness. Chronic human exposure to high levels of hexavalent chromium by inhalation or oral exposure may adversely affect the liver, kidney, and gastrointestinal and immune system.

Para-Dichlorobenzene. The primary sources of para-dichlorobenzene include consumer products such as non-aerosol insect repellents and solid air fresheners. These sources contribute 99 percent of statewide para-dichlorobenzene emissions. In California, para-dichlorobenzene has been identified as a carcinogen. Acute exposure to 1,4-dichlorobenzene via inhalation in humans results in irritation to the eyes, skin, and throat. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system.

Formaldehyde. Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Formaldehyde is a product of incomplete combustion, and one of the primary sources of formaldehyde is vehicular exhaust. Formaldehyde can also be found in many consumer products as an antimicrobial agent and is used in fumigants and soil disinfectants.

Acute formaldehyde inhalation exposure can result in eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic inhalation exposure to formaldehyde has been associated with respiratory symptoms and eye, nose, and throat irritation. In California, formaldehyde has been identified as a carcinogen, and occupational studies have

shown associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer.

Methylene Chloride. Methylene chloride is a solvent used in paint stripping operations and as a blowing and cleaning agent in the manufacture of polyurethane foam and plastic. Paint removers account for the largest use of methylene chloride in California. Inhalation exposure to extremely high levels of methylene chloride can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride can result in decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride are headaches, dizziness, nausea, and memory loss. Chronic exposure can also lead to bone marrow, hepatic, and renal toxicity. California considers methylene chloride to be carcinogenic.

Perchloroethylene. Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos and laboratory solvents. Perchloroethylene vapors are irritating to the eyes and respiratory tract and chronic exposure can result in liver toxicity, kidney dysfunction, and neurological disorders. California identifies perchloroethylene as a carcinogen.

Diesel Particulate Matter. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total DPM. It should be noted that CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan (DRRP), the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Reporting System (DOORS). The PERP and DOORS programs allow owners or operators of portable engines and certain other types of equipment can register their units in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by OEHHA. CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using

information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancers in a population of 1 million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, diesel exhaust particles have been identified as a carcinogen.

2.3 SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Table 1, *Sensitive Receptors*, lists the distances and locations of sensitive receptors within the project vicinity. The distances depicted in Table 1 are based on the distance from the project site to the sensitive receptor.

Table 1
Sensitive Receptors

Type	Distance from Project Site (feet)[1]	Direction from Project Site	Location
Residential	350	North	Along Cedar Avenue
	120	South	Across Jurupa Avenue
	110	East	Across Cedar Avenue
	90	West	Across Linden Avenue
Schools	260	Northwest	Walter Zimmerman Elementary School, across Linden Avenue
	862	East	Crestmore Elementary, at the northwest corner of Jurupa Avenue and Larch Avenue
Parks	380	Southwest	Kessler Park, at the southwest corner of Jurupa Avenue and Linden Avenue

Source: Google Earth 2016.

3.0 REGULATORY FRAMEWORK

FEDERAL CLEAN AIR ACT

The FCAA was amended in 1990 to address a large number of air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. 188 specific pollutants and chemical groups were initially identified as HAPs, and the list has been modified over time. The FCAA Amendments included new regulatory programs to control acid deposition and for the issuance of stationary source operating permits.

In 2001, the U.S. Environmental Protection Agency (EPA) issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health and included benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and DPM. More recently, the EPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the criteria pollutants, toxics do not have National Ambient Air Quality Standards (NAAQS) making evaluation of their impacts more subjective.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) were incorporated into a greatly expanded program for controlling toxic air pollutants. The provisions for attainment and maintenance of the NAAQS were substantially modified and expanded. Other revisions included provisions regarding stratospheric ozone protection, increased enforcement authority, and expanded research programs.

Section 112 of the FCAA Amendments governs the federal control program for HAPs. NESHAPs are issued to limit the release of specified HAPs from specific industrial sectors. These standards are technology-based, meaning that they represent the best available control technology an industrial sector could afford. The level of emissions controls required by NESHAPs are not based on health risk considerations because allowable releases and resulting concentrations have not been determined to be safe for the general public. The FCAA does not establish air quality standards for HAPs that define legally acceptable concentrations of these pollutants in ambient air.

CALIFORNIA AIR RESOURCES BOARD

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807 the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to

below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.my cow

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline.[1] The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter (PM) and oxides of nitrogen (NO_x) emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks must be retrofitted with PM filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses would need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of the CARB Air Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling is to reduce public exposure to diesel particulate matter and criteria

[1] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

pollutants by limiting the idling of diesel-fueled commercial vehicles.[2] The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system (APS) for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, beginning in 2008, would require that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The California Clean Air Act (CCAA) provides the South Coast Air Quality Management District (SCAQMD) with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, CARB regulates motor vehicles and fuels for their emissions.

The Air Toxics Control Plan (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of the SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within the SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

The SCAQMD has conducted an in-depth analysis of the toxic air contaminants and their resulting health risks for all of Southern California. This study, the *Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV,"* shows that cancer risk has decreased more than 50 percent between MATES III (2008) and MATES IV (2015).

MATES-IV is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the South Coast Air Basin emissions. Therefore, MATES-IV study represents the baseline health risk for a cumulative analysis. MATES-IV estimates the average excess cancer risk level from exposure to TACs is less than 400 in one million basin-wide. These model estimates were based on monitoring data collected at ten fixed sites within the South Coast Air Basin. None of the fixed monitoring sites are within the local area of the Project site. However,

[2] The ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is codified in Title 13 of the California Code of Regulations, Chapter 10, Section 2485.

MATES-IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES-IV modeling predicted an excess cancer risk of 427 in one million for the Project area. DPM is included in this cancer risk along with all other TAC sources. DPM accounts for 68 percent of the total risk shown in MATES-IV. Cumulative Project generated TACs are limited to DPM.

4.0 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 SIGNIFICANCE CRITERIA

HEALTH RISK ANALYSIS THRESHOLDS

In order to determine whether or not a proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. While the final determination of significance thresholds is within the purview of the lead agency pursuant to the State CEQA Guidelines, the SCAQMD recommends that the following air pollution thresholds be used by lead agencies in determining whether the proposed project is significant. If the lead agency finds that the proposed project has the potential to exceed the air pollution thresholds, the project should be considered significant. The thresholds for air toxic emissions are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to DPM exposure. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulative impact. The 10 in one million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in a million which is 100 times more than the SCAQMD's threshold of 10 in one million.

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

4.2 METHODOLOGY

HEALTH RISK ASSESSMENT

The air dispersion modeling for the HRA was performed using the U.S. EPA AERMOD

dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources (not a factor in this case). AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Surface and upper air meteorological data provided by the SCAQMD for San Bernardino County was selected as being the most representative meteorology.

Emissions sources in the model include two area sources for the loading dock area on the south side of the proposed warehouse and the loading dock area on the north side of the warehouse. Additionally, emissions sources in the model include a line source (comprised of 23 volume sources) representing the truck delivery route at the project site, and a separate line source (comprised of 38 volume sources) representing the truck delivery route between the project site and Interstate 10. The maximum daily exhaust emissions for all diesel equipment was used to produce an emission rate in terms of grams per second per square meter. Emissions from heavy trucks were assigned a release height of three meters.

The model was run to obtain the peak 24-hour and annual average concentration in micrograms per cubic meter [$\mu g/m^3$] at nearby sensitive receptors. Receptors used included the nearby sensitive receptors depicted in Table 1 with 50 meter (164 feet) spacing. Note that the concentration estimate developed using this methodology is considered conservative, and is not a specific prediction of the actual concentrations that would occur as a result of the project any one point in time. Actual 24-hour and annual average and concentrations are dependent on many variables, particularly the number and type of equipment working at specific distances during time periods of adverse meteorology.

A health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 70-year lifetime basis, 30-year, and 9-year exposure scenarios. The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the U.S. EPA Human Health Evaluation Manual (1991) and the OEHHA Guidance Manual. Only the risk associated with operations of the proposed Project was assessed as construction emissions would be negligible.

RISK AND HAZARD ASSESSMENT

Cancer Risk

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average DPM concentrations is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home (for residents only), and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. It is important to note that exposure duration is based on approximately 350 days of heavy truck operation at the project site. Cancer risk must be separately calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk

estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation (Dose-air) is a function of the function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so Dose-air is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\text{Dose-air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6}$$

Where:

Dose-air	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (μg/m^3) from air dispersion model
{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (225 L\kg BW-day for 3rd Trimester, 658 L/kg BW-day for 0<2 years, 535 L/kg BW-day for 2<9 years, 452 L/kg BW-day for 2<16 years, 210 L/kg BW-day for 16<30 years, and 185 L/kg BW-day 16<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to age <2 years, 85 percent of time is spent at home; from age 2 through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$Risk_{inh\text{-}res} = (Dose_{air} * CPH * ASF * ED/AT * FAH)$$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Chronic Non-Cancer Hazard

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\text{Hazard Quotient} = Ci/RELi$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in $\mu g/m^3$)
RELi	=	Chronic noncancer Reference Exposure Level for substance i ($\mu g/m^3$)

Acute Non-Cancer Hazard

The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts. The equation is as follows:

$$\text{Acute HQ} = \text{Maximum Hourly Air Concentration } (\mu g/m^3) \text{ / Acute REL } (\mu g/m^3)$$

5.0 POTENTIAL HEALTH RISK IMPACTS

5.1 LONG-TERM IMPACTS

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel exhaust is composed of two phases, either gas or particulate – both contribute to the risk. The gas phase is composed of many of the urban HAPs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[3] compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the project is proposing an industrial warehouse requiring daily visits from heavy-duty diesel trucks during operations, an analysis was performed using the EPA-approved AERMOD model.

NON-CARCINOGENIC HAZARDS

The significance thresholds for TAC exposure also require an evaluation of non-cancer risk stated in terms of a hazard index. An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the reference exposure level. The chronic and acute hazard index associated with the emissions from the project would be 0.002 and 0.052, respectively. Therefore, non-carcinogenic hazards are calculated to be within acceptable limits and a less than significant impact would occur.

CARCINOGENIC RISK

Vehicle DPM emissions were estimated using emission factors for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) generated with the 2014 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2014 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2014, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled (VMT) by speed, and number of starts per day.

The most important improvement in EMFAC 2014 is the integration of the new data and methods to estimate emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

[3] This term is specifically used for gases.

Finally, the impacts of the recession on emissions that were quantified as part of the truck and bus rulemaking are included.

For this project, annual average $PM_{2.5}$ emission factors were generated by running EMFAC 2014 in EMFAC Mode for vehicles in the SCAQMD within San Bernardino County. The EMFAC Mode generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of vehicle speed, temperature, and relative humidity. The model was run for speeds traveled on and within the vicinity of the project site. The vehicle travel speeds for each segment modeled are summarized below.

- Idling – on-site loading/unloading; and
- 5 miles per hour – on-site vehicle movement including driving and maneuvering; and
- 25 miles per hour – off-site vehicle movement including driving and maneuvering.

The average $PM_{2.5}$ emission factors for heavy trucks were calculated based on the annual average emission factors for various exposure periods associated with assumptions for evaluating exposure over three different periods (i.e., 70-, 30-, and 9-year exposure scenarios).

Based on the AERMOD outputs, the expected annual average diesel $PM_{2.5}$ emission concentrations at a sensitive receptor resulting from operation of the project (232 daily heavy truck deliveries) would be 0.01 $\mu g/m^3$ at the greatest. This level of concentration would be experienced at the residential neighborhood directly west of the project site across Linden Avenue as well as residences directly east of the project site across Cedar Avenue. These are the closest sensitive receptors to the project site. The calculated carcinogenic risk at these locations, directly west and directly east of the site, as a result of the project is depicted in Table 2, *Operational Health Risk*. The calculations conservatively assume no cleaner technology with lower emissions in future years, and assume that residents will live in the same home (and thus be exposed to emissions) for the entire exposure period. As depicted in Table 2, the highest concentration would result in a risk of 4.92 in one million over the 70-year exposure period, which is below the threshold of 10 in one million. The calculated risk is also below the threshold for the 30- and 9-year exposure periods. Therefore, impacts related to cancer risk from heavy trucks would be less than significant.

Table 2
Maximum Operational Health Risk

Exposure Scenario	Maximum Cancer Risk (Risk per Million)[1]	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
70-Year Exposure	4.92	10	No
30-Year Exposure	4.14	10	No
9-Year Exposure	2.98	10	No

Notes:
1. Refer to Appendix A, *Modeling Data*.

It is noted that the maximum operational health risk depicted in Table 2 represents the highest pollutant concentration at a sensitive receptor. This level of concentration would be experienced at residences directly west of the project site across Linden Avenue as well as residences directly east of the project site across Cedar Avenue. As identified in Table 1, there are two schools in the project vicinity and the calculated carcinogenic risk at these locations as a result of the project is depicted in Table 3, *Operational Health Risk at Project Vicinity Schools*. Cancer risk calculations for schools are based on a 9-year exposure period. As shown, impacts related to cancer risk and $PM_{2.5}$ concentrations from heavy trucks would also be less than significant at each of the project vicinity school sites.

Table 3
Maximum Operational Health Risk at Project Vicinity Schools

Exposure Scenario	Maximum Cancer Risk (Risk per Million)[1]	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
Crestmore Elementary (9-Year Exposure)	2.98	10	No
Walter Zimmerman Elementary (9-Year Exposure)	0.30	10	No

Notes:
1. Refer to Appendix A, *Modeling Data*.

It is further noted that there are measures currently employed statewide to reduce the risk impacts of heavy trucks. In 1984, as a result of public concern for exposure to airborne carcinogens, the CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile sources, such as trucks. According to CARB, between 1990-2012 ambient concentration and emission trends for diesel particulate matter has declined significantly. The decline in ambient concentration and emission trends of diesel particulate matter are a result of various regulations CARB has implemented to address cancer risk. For instance, in 2000 CARB's Diesel Risk Reduction Plan (DRRP) recommended the replacement and retrofit of diesel-fueled engines and the use of ultra-low-sulfur (<15ppm) diesel fuel. As a result of these measures, diesel particulate matter concentrations have declined 68 percent, even though the state's population increased 31 percent and the amount of diesel vehicles miles traveled increased 81 percent. With the implementation of these diesel-related control regulations, CARB expects a decline in diesel particulate matter of 71 percent for 2000-2020.

It is noted that the maximum operational health risk depicted in Table 2 represents the highest pollutant concentration at a sensitive receptor. This level of concentration would be experienced at residences directly west of the project site across Linden Avenue as well as residences directly east of the project site across Cedar Avenue. As identified in Table 1, the nearest residence to the project site is 90 feet distant. Furthermore, a review of the project Site Plan (see **Figure 3**) shows the driveway entrance to the project site that is designated for inbound heavy duty truck access directly across from residential front yards and outdoor activity areas. Therefore, while the increased cancer risk from heavy trucks would be below the applicable significance threshold **Mitigation Measure HRA-1** is recommended in order to enforce existing regulation and reduce

the generation of diesel particulate matter. Trucks that run at least partially on electricity are projected by the SCAQMD to become available during the life of the project as discussed in SCAQMD's 2012 Regional Transportation Plan. Mitigation Measure HRA-1 requires the project to make this electrical infrastructure available when the project is built so that it is ready when this technology becomes commercially available. Additionally, Mitigation Measure HRA-1 enforces existing regulation and provides incentives for alternative fuel use, both of which will reduce the generation of diesel particulate matter.

Mitigation Measures:

HRA-1 Prior to the certificate of occupancy issuance, the project Applicant shall demonstrate to the satisfaction of the San Bernardino County Land Use Services Director that the following measures would be implemented during project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the San Bernardino County Land Use Services Director.

- The proposed warehouse shall be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in in anticipation of future technology allowing trucks to operate partially on electricity.

- At least 3 percent of all vehicle parking spaces (including for trucks) shall include EV charging stations.

- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five (5) minutes; and 3) telephone numbers of the building facilities manager and CARB to report violations.
- In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles_and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of: 1) alternatively fueled cargo handling equipment; 2) grant programs for diesel fueled vehicle engine retrofit and/or replacement; 3) designated truck parking

locations in the project vicinity; 4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and 5) the United States Environmental Protection Agency's SmartWay program.

Level of Significance After Mitigation: *Less than Significant.*

6.0 REFERENCES

6.1 LIST OF PREPARERS

MICHAEL BAKER INTERNATIONAL, INC.
14725 Alton Parkway
Irvine, California 92618
949/472-3505

Eddie Torres, INCE, Environmental Sciences Manager
Achilles Malisos, Manager of Air and Noise Studies
Seth Myers, Air Quality Specialist
Faye Stroud, Graphic Artist

6.2 DOCUMENTS

1. Bastien and Associates, Inc., *Western Realco – Cedar Avenue Site Plan*, January 25, 2016.

2. California Air Pollution Control Officers Association, *Health Risk Assessment for Proposed Land Use Projects*, July 2009.

3. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

4. California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003.

5. California Environmental Protection Agency and Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidance Manual for Preparation of Health Risk Assessments*, February 2015.

6. D. Bruce Turner, CCM and Richard H. Schulze, P.E., QEP, *Practical Guide to Atmospheric Dispersion Modeling*, 2007.

7. Google Earth, 2016.

8. Kunzman Associates, Inc., Bloomington Option C Traffic Impact Analysis, May 6, 2016.

9. South Coast Air Quality Management District, *High Cube Warehouse Trip Rate Study for Air Quality Analysis*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/high-cube-warehouse, accessed June 2016.

10. South Coast Air Quality Management District, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III).* September 2008.

11. South Coast Air Quality Management District, *Modeling Guidance for AERMOD, http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance,* accessed June 2016.

12. South Coast Air Quality Management District, Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV). May 2015.

13. U.S. Environmental Protection Agency, *Exposure Factors Handbook: 2011 Edition,* September 2011.

6.3 WEB SITES/PROGRAMS

U.S. Environmental Protection Agency, AERMOD Dispersion Model.

Lakes Environmental, Gaussian Plume Air Dispersion Model, Version 9.1.

Health Risk at Walter Zimmerman School

Risk Calculations

1 Hour Avg Concentration:	0.080
24 Hour Avg Concentration:	0.010
Annual Avg Concentration	0.001

Cancer Risk

	3rd trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
DOSEair = (Cair*(BR/BW)*A*EF*10^{-6})	2.15753E-07	6.30959E-07	5.13014E-07	4.33425E-07	2.0137E-07	1.77397E-07
Risk = DOSEair * CPF * ASF * ED/AT * FAH	7.20462E-09	1.68556E-07	1.21892E-07	2.05963E-07	3.234000E-08	1.0989E-07

		Risk	in one million
Cancer Risk:	9-year exposure	2.98E-07	0.30

Threshold: 10 in one million

	DOSEair		mg/kg-d	Dose through inhalation
	CPF	1.1	(mg/kg/day)$^{-1}$	Cancer Potency Factor for DPM
BR/BW	BR/BW (3rd trimester)	225	L/kg bodyweight-day	Daily Breathing rate normalized to body weigh
	BR/BW (0 < 2 years)	658		
	BR/BW (2 < 9 years)	535		
	BR/BW (2 < 16 years)	452		
	BR/BW (16 < 30 years)	210		
	BR/BW (16 < 70 years)	185		
	10^{-6}	1.00E-06		Micrograms to milligrams conversions, liters to cubic meters conversion
	Cair	0.001	ug/m^3	Concentration in air (ug/m^3), modeled annual average concentration
	A	1		Inhalation absorption factor
	EF	0.96	days/year	Exposure frequency (days/year)
ED	ED (3rd trimester)	0.25	years	Exposure duration (years)
	ED (0 < 2 years)	2		
	ED (2 < 9 years)	7		
	ED (2 < 16, 16 < 30 years)	14		
	ED (16 - 70 years)	54		
	AT	70	years	Averaging time period over which exposure is averaged
ASF	ASF (3rd trimester - 2 years)	10		Age Sensitivity Factor
	ASF (2 - 16 years)	3		
	ASF (16 - 70 years)	1		
FAH	FAH (3rd trimester - 2 years)	0.85		Fraction of time spent at home (unitless)
	FAH (2 - 16 years)	0.72		
	FAH (16 - 70 years)	0.73		

Chronic Noncancer Hazard

Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = 2.00E-04

C_i 1.00E-03 Concentration (annual average)

REL_i 5 Reference Exposure Level

Acute NonCancer Hazard

Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

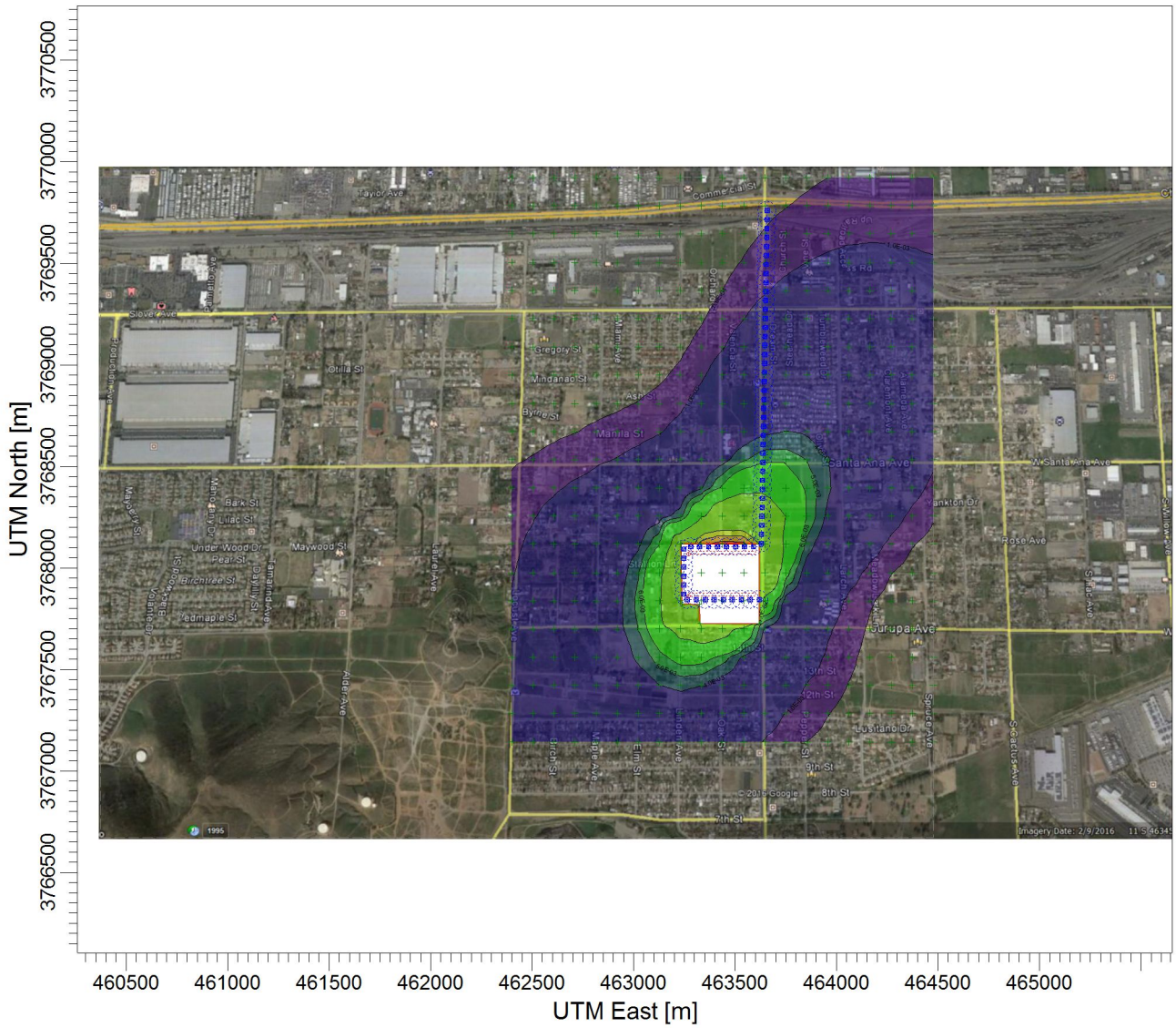
Acute HQ = 5.26E-03

Max Hourly 1.00E-03

Acute REL (Acrolein) 0.19

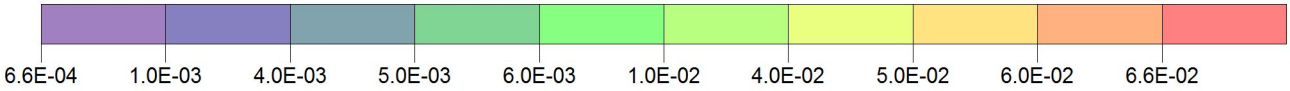
PROJECT TITLE:

C:\Emissions Models\San Bernardino County\Bloomington - Western Real



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 6.6E-02 [ug/m^3] at (463437.86, 3768115.75)



COMMENTS:	SOURCES: **4**	COMPANY NAME:	
	RECEPTORS: **447**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:33,934 0 1 km	
	MAX: **6.6E-02 ug/m^3**	DATE: **10/26/2016**	PROJECT NO.:

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.2.0
** Lakes Environmental Software Inc.
** Date: 10/25/2016
** File: C:\Emissions Models\San Bernardino County\Bloomington - Western
Realco\Bloomington Warehouse\Bloomington Warehouse.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Emissions Models\San Bernardino County\Bloomington - Western
Real
   MODELOPT CONC FLAT
   AVERTIME 1 24 ANNUAL
   URBANOPT 23851
   POLLUTID PM_2.5
   RUNORNOT RUN
   ERRORFIL "Bloomington Warehouse.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ------------------------------------------------------------------
** Line Source Represented by Separated Volume Sources (2W)
** LINE VOLUME Source ID = SLINE
** DESCRSRC On-Site Circ
** PREFIX
** Length of Side = 22.15
** Configuration = Separated 2W
** Emission Rate = 1.25E-06
** Vertical Dimension = 5.10
** SZINIT = 2.37
** Nodes = 4
** 463630.000, 3767843.000, 0.00, 2.55, 20.60
** 463248.000, 3767843.000, 0.00, 2.55, 20.60
** 463248.000, 3768104.000, 0.00, 2.55, 20.60
** 463630.000, 3768104.000, 0.00, 2.55, 20.60
** ------------------------------------------------------------------
   LOCATION L0000169     VOLUME   463618.925 3767843.000 0.0
   LOCATION L0000170     VOLUME   463574.625 3767843.000 0.0
   LOCATION L0000171     VOLUME   463530.325 3767843.000 0.0
   LOCATION L0000172     VOLUME   463486.025 3767843.000 0.0
   LOCATION L0000173     VOLUME   463441.725 3767843.000 0.0
   LOCATION L0000174     VOLUME   463397.425 3767843.000 0.0
   LOCATION L0000175     VOLUME   463353.125 3767843.000 0.0
   LOCATION L0000176     VOLUME   463308.825 3767843.000 0.0
   LOCATION L0000177     VOLUME   463264.525 3767843.000 0.0
   LOCATION L0000178     VOLUME   463248.000 3767870.775 0.0
   LOCATION L0000179     VOLUME   463248.000 3767915.075 0.0
   LOCATION L0000180     VOLUME   463248.000 3767959.375 0.0
   LOCATION L0000181     VOLUME   463248.000 3768003.675 0.0
```

```
   LOCATION L0000182     VOLUME   463248.000 3768047.975 0.0
   LOCATION L0000183     VOLUME   463248.000 3768092.275 0.0
   LOCATION L0000184     VOLUME   463280.575 3768104.000 0.0
   LOCATION L0000185     VOLUME   463324.875 3768104.000 0.0
   LOCATION L0000186     VOLUME   463369.175 3768104.000 0.0
   LOCATION L0000187     VOLUME   463413.475 3768104.000 0.0
   LOCATION L0000188     VOLUME   463457.775 3768104.000 0.0
   LOCATION L0000189     VOLUME   463502.075 3768104.000 0.0
   LOCATION L0000190     VOLUME   463546.375 3768104.000 0.0
   LOCATION L0000191     VOLUME   463590.675 3768104.000 0.0
** End of LINE VOLUME Source ID = SLINE
   LOCATION AREA1        AREA       463271.000  3767860.000          0.0
** DESCRSRC Idling Area
   LOCATION AREA2        AREA       463271.000  3768069.000          0.0
** DESCRSRC Idling Area
** ----------------------------------------------------------------------
** Line Source Represented by Separated Volume Sources (2W)
** LINE VOLUME Source ID = SLINE2
** DESCRSRC Off site travel
** PREFIX
** Length of Side = 22.15
** Configuration = Separated 2W
** Emission Rate = 6.93E-07
** Vertical Dimension = 5.10
** SZINIT = 2.37
** Nodes = 2
** 463630.000, 3768110.000, 0.00, 2.55, 20.60
** 463659.000, 3769792.000, 0.00, 2.55, 20.60
** ----------------------------------------------------------------------
   LOCATION L0000192     VOLUME   463630.191 3768121.073 0.0
   LOCATION L0000193     VOLUME   463630.955 3768165.367 0.0
   LOCATION L0000194     VOLUME   463631.718 3768209.660 0.0
   LOCATION L0000195     VOLUME   463632.482 3768253.954 0.0
   LOCATION L0000196     VOLUME   463633.246 3768298.247 0.0
   LOCATION L0000197     VOLUME   463634.009 3768342.540 0.0
   LOCATION L0000198     VOLUME   463634.773 3768386.834 0.0
   LOCATION L0000199     VOLUME   463635.537 3768431.127 0.0
   LOCATION L0000200     VOLUME   463636.300 3768475.421 0.0
   LOCATION L0000201     VOLUME   463637.064 3768519.714 0.0
   LOCATION L0000202     VOLUME   463637.828 3768564.008 0.0
   LOCATION L0000203     VOLUME   463638.591 3768608.301 0.0
   LOCATION L0000204     VOLUME   463639.355 3768652.594 0.0
   LOCATION L0000205     VOLUME   463640.119 3768696.888 0.0
   LOCATION L0000206     VOLUME   463640.882 3768741.181 0.0
   LOCATION L0000207     VOLUME   463641.646 3768785.475 0.0
   LOCATION L0000208     VOLUME   463642.410 3768829.768 0.0
   LOCATION L0000209     VOLUME   463643.173 3768874.061 0.0
   LOCATION L0000210     VOLUME   463643.937 3768918.355 0.0
   LOCATION L0000211     VOLUME   463644.701 3768962.648 0.0
   LOCATION L0000212     VOLUME   463645.465 3769006.942 0.0
   LOCATION L0000213     VOLUME   463646.228 3769051.235 0.0
   LOCATION L0000214     VOLUME   463646.992 3769095.529 0.0
   LOCATION L0000215     VOLUME   463647.756 3769139.822 0.0
   LOCATION L0000216     VOLUME   463648.519 3769184.115 0.0
   LOCATION L0000217     VOLUME   463649.283 3769228.409 0.0
   LOCATION L0000218     VOLUME   463650.047 3769272.702 0.0
   LOCATION L0000219     VOLUME   463650.810 3769316.996 0.0
   LOCATION L0000220     VOLUME   463651.574 3769361.289 0.0
   LOCATION L0000221     VOLUME   463652.338 3769405.582 0.0
   LOCATION L0000222     VOLUME   463653.101 3769449.876 0.0
   LOCATION L0000223     VOLUME   463653.865 3769494.169 0.0
   LOCATION L0000224     VOLUME   463654.629 3769538.463 0.0
   LOCATION L0000225     VOLUME   463655.392 3769582.756 0.0
   LOCATION L0000226     VOLUME   463656.156 3769627.050 0.0
   LOCATION L0000227     VOLUME   463656.920 3769671.343 0.0
   LOCATION L0000228     VOLUME   463657.683 3769715.636 0.0
```

```
   LOCATION L0000229     VOLUME   463658.447 3769759.930 0.0
** End of LINE VOLUME Source ID = SLINE2
** Source Parameters **
** LINE VOLUME Source ID = SLINE
   SRCPARAM L0000169     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000170     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000171     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000172     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000173     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000174     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000175     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000176     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000177     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000178     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000179     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000180     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000181     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000182     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000183     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000184     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000185     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000186     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000187     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000188     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000189     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000190     0.00000005435      2.55     20.60      2.37
   SRCPARAM L0000191     0.00000005435      2.55     20.60      2.37
** ----------------------------------------------------------------------
   SRCPARAM AREA1         5.39E-08     3.000   330.000    14.050     0.000
3.010
   SRCPARAM AREA2         5.39E-08     3.000   330.000    14.050     0.000
3.010
** LINE VOLUME Source ID = SLINE2
   SRCPARAM L0000192     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000193     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000194     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000195     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000196     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000197     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000198     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000199     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000200     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000201     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000202     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000203     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000204     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000205     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000206     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000207     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000208     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000209     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000210     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000211     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000212     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000213     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000214     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000215     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000216     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000217     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000218     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000219     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000220     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000221     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000222     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000223     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000224     0.00000001824      2.55     20.60      2.37
```

```
   SRCPARAM L0000225     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000226     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000227     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000228     0.00000001824      2.55     20.60      2.37
   SRCPARAM L0000229     0.00000001824      2.55     20.60      2.37
** ---------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
** DESCRREC "UCART1" "Receptors generated from Uniform Cartesian Grid"
   DISCCART    462399.46   3767143.17
   DISCCART    462503.30   3767143.17
   DISCCART    462607.14   3767143.17
   DISCCART    462710.98   3767143.17
   DISCCART    462814.82   3767143.17
   DISCCART    462918.66   3767143.17
   DISCCART    463022.50   3767143.17
   DISCCART    463126.34   3767143.17
   DISCCART    463230.18   3767143.17
   DISCCART    463334.02   3767143.17
   DISCCART    463437.86   3767143.17
   DISCCART    463541.70   3767143.17
   DISCCART    463645.54   3767143.17
   DISCCART    463749.38   3767143.17
   DISCCART    463853.22   3767143.17
   DISCCART    463957.06   3767143.17
   DISCCART    464060.90   3767143.17
   DISCCART    464164.74   3767143.17
   DISCCART    464268.58   3767143.17
   DISCCART    464372.42   3767143.17
   DISCCART    464476.26   3767143.17
   DISCCART    462399.46   3767282.11
   DISCCART    462503.30   3767282.11
   DISCCART    462607.14   3767282.11
   DISCCART    462710.98   3767282.11
   DISCCART    462814.82   3767282.11
   DISCCART    462918.66   3767282.11
   DISCCART    463022.50   3767282.11
   DISCCART    463126.34   3767282.11
   DISCCART    463230.18   3767282.11
   DISCCART    463334.02   3767282.11
   DISCCART    463437.86   3767282.11
   DISCCART    463541.70   3767282.11
   DISCCART    463645.54   3767282.11
   DISCCART    463749.38   3767282.11
   DISCCART    463853.22   3767282.11
   DISCCART    463957.06   3767282.11
   DISCCART    464060.90   3767282.11
   DISCCART    464164.74   3767282.11
   DISCCART    464268.58   3767282.11
   DISCCART    464372.42   3767282.11
   DISCCART    464476.26   3767282.11
   DISCCART    462399.46   3767421.05
   DISCCART    462503.30   3767421.05
   DISCCART    462607.14   3767421.05
   DISCCART    462710.98   3767421.05
   DISCCART    462814.82   3767421.05
   DISCCART    462918.66   3767421.05
   DISCCART    463022.50   3767421.05
```

DISCCART	463126.34	3767421.05
DISCCART	463230.18	3767421.05
DISCCART	463334.02	3767421.05
DISCCART	463437.86	3767421.05
DISCCART	463541.70	3767421.05
DISCCART	463645.54	3767421.05
DISCCART	463749.38	3767421.05
DISCCART	463853.22	3767421.05
DISCCART	463957.06	3767421.05
DISCCART	464060.90	3767421.05
DISCCART	464164.74	3767421.05
DISCCART	464268.58	3767421.05
DISCCART	464372.42	3767421.05
DISCCART	464476.26	3767421.05
DISCCART	462399.46	3767559.99
DISCCART	462503.30	3767559.99
DISCCART	462607.14	3767559.99
DISCCART	462710.98	3767559.99
DISCCART	462814.82	3767559.99
DISCCART	462918.66	3767559.99
DISCCART	463022.50	3767559.99
DISCCART	463126.34	3767559.99
DISCCART	463230.18	3767559.99
DISCCART	463334.02	3767559.99
DISCCART	463437.86	3767559.99
DISCCART	463541.70	3767559.99
DISCCART	463645.54	3767559.99
DISCCART	463749.38	3767559.99
DISCCART	463853.22	3767559.99
DISCCART	463957.06	3767559.99
DISCCART	464060.90	3767559.99
DISCCART	464164.74	3767559.99
DISCCART	464268.58	3767559.99
DISCCART	464372.42	3767559.99
DISCCART	464476.26	3767559.99
DISCCART	462399.46	3767698.93
DISCCART	462503.30	3767698.93
DISCCART	462607.14	3767698.93
DISCCART	462710.98	3767698.93
DISCCART	462814.82	3767698.93
DISCCART	462918.66	3767698.93
DISCCART	463022.50	3767698.93
DISCCART	463126.34	3767698.93
DISCCART	463230.18	3767698.93
DISCCART	463334.02	3767698.93
DISCCART	463437.86	3767698.93
DISCCART	463541.70	3767698.93
DISCCART	463645.54	3767698.93
DISCCART	463749.38	3767698.93
DISCCART	463853.22	3767698.93
DISCCART	463957.06	3767698.93
DISCCART	464060.90	3767698.93
DISCCART	464164.74	3767698.93
DISCCART	464268.58	3767698.93
DISCCART	464372.42	3767698.93
DISCCART	464476.26	3767698.93
DISCCART	462399.46	3767837.87
DISCCART	462503.30	3767837.87
DISCCART	462607.14	3767837.87
DISCCART	462710.98	3767837.87
DISCCART	462814.82	3767837.87
DISCCART	462918.66	3767837.87
DISCCART	463022.50	3767837.87
DISCCART	463126.34	3767837.87
DISCCART	463230.18	3767837.87
DISCCART	463334.02	3767837.87

DISCCART	463437.86	3767837.87
DISCCART	463541.70	3767837.87
DISCCART	463645.54	3767837.87
DISCCART	463749.38	3767837.87
DISCCART	463853.22	3767837.87
DISCCART	463957.06	3767837.87
DISCCART	464060.90	3767837.87
DISCCART	464164.74	3767837.87
DISCCART	464268.58	3767837.87
DISCCART	464372.42	3767837.87
DISCCART	464476.26	3767837.87
DISCCART	462399.46	3767976.81
DISCCART	462503.30	3767976.81
DISCCART	462607.14	3767976.81
DISCCART	462710.98	3767976.81
DISCCART	462814.82	3767976.81
DISCCART	462918.66	3767976.81
DISCCART	463022.50	3767976.81
DISCCART	463126.34	3767976.81
DISCCART	463230.18	3767976.81
DISCCART	463334.02	3767976.81
DISCCART	463437.86	3767976.81
DISCCART	463541.70	3767976.81
DISCCART	463645.54	3767976.81
DISCCART	463749.38	3767976.81
DISCCART	463853.22	3767976.81
DISCCART	463957.06	3767976.81
DISCCART	464060.90	3767976.81
DISCCART	464164.74	3767976.81
DISCCART	464268.58	3767976.81
DISCCART	464372.42	3767976.81
DISCCART	464476.26	3767976.81
DISCCART	462399.46	3768115.75
DISCCART	462503.30	3768115.75
DISCCART	462607.14	3768115.75
DISCCART	462710.98	3768115.75
DISCCART	462814.82	3768115.75
DISCCART	462918.66	3768115.75
DISCCART	463022.50	3768115.75
DISCCART	463126.34	3768115.75
DISCCART	463230.18	3768115.75
DISCCART	463334.02	3768115.75
DISCCART	463437.86	3768115.75
DISCCART	463541.70	3768115.75
DISCCART	463645.54	3768115.75
DISCCART	463749.38	3768115.75
DISCCART	463853.22	3768115.75
DISCCART	463957.06	3768115.75
DISCCART	464060.90	3768115.75
DISCCART	464164.74	3768115.75
DISCCART	464268.58	3768115.75
DISCCART	464372.42	3768115.75
DISCCART	464476.26	3768115.75
DISCCART	462399.46	3768254.69
DISCCART	462503.30	3768254.69
DISCCART	462607.14	3768254.69
DISCCART	462710.98	3768254.69
DISCCART	462814.82	3768254.69
DISCCART	462918.66	3768254.69
DISCCART	463022.50	3768254.69
DISCCART	463126.34	3768254.69
DISCCART	463230.18	3768254.69
DISCCART	463334.02	3768254.69
DISCCART	463437.86	3768254.69
DISCCART	463541.70	3768254.69
DISCCART	463645.54	3768254.69

DISCCART	463749.38	3768254.69
DISCCART	463853.22	3768254.69
DISCCART	463957.06	3768254.69
DISCCART	464060.90	3768254.69
DISCCART	464164.74	3768254.69
DISCCART	464268.58	3768254.69
DISCCART	464372.42	3768254.69
DISCCART	464476.26	3768254.69
DISCCART	462399.46	3768393.63
DISCCART	462503.30	3768393.63
DISCCART	462607.14	3768393.63
DISCCART	462710.98	3768393.63
DISCCART	462814.82	3768393.63
DISCCART	462918.66	3768393.63
DISCCART	463022.50	3768393.63
DISCCART	463126.34	3768393.63
DISCCART	463230.18	3768393.63
DISCCART	463334.02	3768393.63
DISCCART	463437.86	3768393.63
DISCCART	463541.70	3768393.63
DISCCART	463645.54	3768393.63
DISCCART	463749.38	3768393.63
DISCCART	463853.22	3768393.63
DISCCART	463957.06	3768393.63
DISCCART	464060.90	3768393.63
DISCCART	464164.74	3768393.63
DISCCART	464268.58	3768393.63
DISCCART	464372.42	3768393.63
DISCCART	464476.26	3768393.63
DISCCART	462399.46	3768532.57
DISCCART	462503.30	3768532.57
DISCCART	462607.14	3768532.57
DISCCART	462710.98	3768532.57
DISCCART	462814.82	3768532.57
DISCCART	462918.66	3768532.57
DISCCART	463022.50	3768532.57
DISCCART	463126.34	3768532.57
DISCCART	463230.18	3768532.57
DISCCART	463334.02	3768532.57
DISCCART	463437.86	3768532.57
DISCCART	463541.70	3768532.57
DISCCART	463645.54	3768532.57
DISCCART	463749.38	3768532.57
DISCCART	463853.22	3768532.57
DISCCART	463957.06	3768532.57
DISCCART	464060.90	3768532.57
DISCCART	464164.74	3768532.57
DISCCART	464268.58	3768532.57
DISCCART	464372.42	3768532.57
DISCCART	464476.26	3768532.57
DISCCART	462399.46	3768671.51
DISCCART	462503.30	3768671.51
DISCCART	462607.14	3768671.51
DISCCART	462710.98	3768671.51
DISCCART	462814.82	3768671.51
DISCCART	462918.66	3768671.51
DISCCART	463022.50	3768671.51
DISCCART	463126.34	3768671.51
DISCCART	463230.18	3768671.51
DISCCART	463334.02	3768671.51
DISCCART	463437.86	3768671.51
DISCCART	463541.70	3768671.51
DISCCART	463645.54	3768671.51
DISCCART	463749.38	3768671.51
DISCCART	463853.22	3768671.51
DISCCART	463957.06	3768671.51

DISCCART	464060.90	3768671.51
DISCCART	464164.74	3768671.51
DISCCART	464268.58	3768671.51
DISCCART	464372.42	3768671.51
DISCCART	464476.26	3768671.51
DISCCART	462399.46	3768810.45
DISCCART	462503.30	3768810.45
DISCCART	462607.14	3768810.45
DISCCART	462710.98	3768810.45
DISCCART	462814.82	3768810.45
DISCCART	462918.66	3768810.45
DISCCART	463022.50	3768810.45
DISCCART	463126.34	3768810.45
DISCCART	463230.18	3768810.45
DISCCART	463334.02	3768810.45
DISCCART	463437.86	3768810.45
DISCCART	463541.70	3768810.45
DISCCART	463645.54	3768810.45
DISCCART	463749.38	3768810.45
DISCCART	463853.22	3768810.45
DISCCART	463957.06	3768810.45
DISCCART	464060.90	3768810.45
DISCCART	464164.74	3768810.45
DISCCART	464268.58	3768810.45
DISCCART	464372.42	3768810.45
DISCCART	464476.26	3768810.45
DISCCART	462399.46	3768949.39
DISCCART	462503.30	3768949.39
DISCCART	462607.14	3768949.39
DISCCART	462710.98	3768949.39
DISCCART	462814.82	3768949.39
DISCCART	462918.66	3768949.39
DISCCART	463022.50	3768949.39
DISCCART	463126.34	3768949.39
DISCCART	463230.18	3768949.39
DISCCART	463334.02	3768949.39
DISCCART	463437.86	3768949.39
DISCCART	463541.70	3768949.39
DISCCART	463645.54	3768949.39
DISCCART	463749.38	3768949.39
DISCCART	463853.22	3768949.39
DISCCART	463957.06	3768949.39
DISCCART	464060.90	3768949.39
DISCCART	464164.74	3768949.39
DISCCART	464268.58	3768949.39
DISCCART	464372.42	3768949.39
DISCCART	464476.26	3768949.39
DISCCART	462399.46	3769088.33
DISCCART	462503.30	3769088.33
DISCCART	462607.14	3769088.33
DISCCART	462710.98	3769088.33
DISCCART	462814.82	3769088.33
DISCCART	462918.66	3769088.33
DISCCART	463022.50	3769088.33
DISCCART	463126.34	3769088.33
DISCCART	463230.18	3769088.33
DISCCART	463334.02	3769088.33
DISCCART	463437.86	3769088.33
DISCCART	463541.70	3769088.33
DISCCART	463645.54	3769088.33
DISCCART	463749.38	3769088.33
DISCCART	463853.22	3769088.33
DISCCART	463957.06	3769088.33
DISCCART	464060.90	3769088.33
DISCCART	464164.74	3769088.33
DISCCART	464268.58	3769088.33

DISCCART	464372.42	3769088.33
DISCCART	464476.26	3769088.33
DISCCART	462399.46	3769227.27
DISCCART	462503.30	3769227.27
DISCCART	462607.14	3769227.27
DISCCART	462710.98	3769227.27
DISCCART	462814.82	3769227.27
DISCCART	462918.66	3769227.27
DISCCART	463022.50	3769227.27
DISCCART	463126.34	3769227.27
DISCCART	463230.18	3769227.27
DISCCART	463334.02	3769227.27
DISCCART	463437.86	3769227.27
DISCCART	463541.70	3769227.27
DISCCART	463645.54	3769227.27
DISCCART	463749.38	3769227.27
DISCCART	463853.22	3769227.27
DISCCART	463957.06	3769227.27
DISCCART	464060.90	3769227.27
DISCCART	464164.74	3769227.27
DISCCART	464268.58	3769227.27
DISCCART	464372.42	3769227.27
DISCCART	464476.26	3769227.27
DISCCART	462399.46	3769366.21
DISCCART	462503.30	3769366.21
DISCCART	462607.14	3769366.21
DISCCART	462710.98	3769366.21
DISCCART	462814.82	3769366.21
DISCCART	462918.66	3769366.21
DISCCART	463022.50	3769366.21
DISCCART	463126.34	3769366.21
DISCCART	463230.18	3769366.21
DISCCART	463334.02	3769366.21
DISCCART	463437.86	3769366.21
DISCCART	463541.70	3769366.21
DISCCART	463645.54	3769366.21
DISCCART	463749.38	3769366.21
DISCCART	463853.22	3769366.21
DISCCART	463957.06	3769366.21
DISCCART	464060.90	3769366.21
DISCCART	464164.74	3769366.21
DISCCART	464268.58	3769366.21
DISCCART	464372.42	3769366.21
DISCCART	464476.26	3769366.21
DISCCART	462399.46	3769505.15
DISCCART	462503.30	3769505.15
DISCCART	462607.14	3769505.15
DISCCART	462710.98	3769505.15
DISCCART	462814.82	3769505.15
DISCCART	462918.66	3769505.15
DISCCART	463022.50	3769505.15
DISCCART	463126.34	3769505.15
DISCCART	463230.18	3769505.15
DISCCART	463334.02	3769505.15
DISCCART	463437.86	3769505.15
DISCCART	463541.70	3769505.15
DISCCART	463645.54	3769505.15
DISCCART	463749.38	3769505.15
DISCCART	463853.22	3769505.15
DISCCART	463957.06	3769505.15
DISCCART	464060.90	3769505.15
DISCCART	464164.74	3769505.15
DISCCART	464268.58	3769505.15
DISCCART	464372.42	3769505.15
DISCCART	464476.26	3769505.15
DISCCART	462399.46	3769644.09

```
   DISCCART    462503.30   3769644.09
   DISCCART    462607.14   3769644.09
   DISCCART    462710.98   3769644.09
   DISCCART    462814.82   3769644.09
   DISCCART    462918.66   3769644.09
   DISCCART    463022.50   3769644.09
   DISCCART    463126.34   3769644.09
   DISCCART    463230.18   3769644.09
   DISCCART    463334.02   3769644.09
   DISCCART    463437.86   3769644.09
   DISCCART    463541.70   3769644.09
   DISCCART    463645.54   3769644.09
   DISCCART    463749.38   3769644.09
   DISCCART    463853.22   3769644.09
   DISCCART    463957.06   3769644.09
   DISCCART    464060.90   3769644.09
   DISCCART    464164.74   3769644.09
   DISCCART    464268.58   3769644.09
   DISCCART    464372.42   3769644.09
   DISCCART    464476.26   3769644.09
   DISCCART    462399.46   3769783.03
   DISCCART    462503.30   3769783.03
   DISCCART    462607.14   3769783.03
   DISCCART    462710.98   3769783.03
   DISCCART    462814.82   3769783.03
   DISCCART    462918.66   3769783.03
   DISCCART    463022.50   3769783.03
   DISCCART    463126.34   3769783.03
   DISCCART    463230.18   3769783.03
   DISCCART    463334.02   3769783.03
   DISCCART    463437.86   3769783.03
   DISCCART    463541.70   3769783.03
   DISCCART    463645.54   3769783.03
   DISCCART    463749.38   3769783.03
   DISCCART    463853.22   3769783.03
   DISCCART    463957.06   3769783.03
   DISCCART    464060.90   3769783.03
   DISCCART    464164.74   3769783.03
   DISCCART    464268.58   3769783.03
   DISCCART    464372.42   3769783.03
   DISCCART    464476.26   3769783.03
   DISCCART    462399.46   3769921.97
   DISCCART    462503.30   3769921.97
   DISCCART    462607.14   3769921.97
   DISCCART    462710.98   3769921.97
   DISCCART    462814.82   3769921.97
   DISCCART    462918.66   3769921.97
   DISCCART    463022.50   3769921.97
   DISCCART    463126.34   3769921.97
   DISCCART    463230.18   3769921.97
   DISCCART    463334.02   3769921.97
   DISCCART    463437.86   3769921.97
   DISCCART    463541.70   3769921.97
   DISCCART    463645.54   3769921.97
   DISCCART    463749.38   3769921.97
   DISCCART    463853.22   3769921.97
   DISCCART    463957.06   3769921.97
   DISCCART    464060.90   3769921.97
   DISCCART    464164.74   3769921.97
   DISCCART    464268.58   3769921.97
   DISCCART    464372.42   3769921.97
   DISCCART    464476.26   3769921.97
** Discrete Cartesian Plant Boundary - Primary Receptors
** Plant Boundary Name PLBN1
** DESCRREC "FENCEPRI" "Cartesian plant boundary Primary Receptors"
   DISCCART    463236.00   3768116.00
```

```
   DISCCART    463239.00   3767823.00
   DISCCART    463326.00   3767821.00
   DISCCART    463328.00   3767727.00
   DISCCART    463619.00   3767725.00
   DISCCART    463618.00   3768116.00
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE ..\HRA\snbo8.sfc
   PROFFILE ..\HRA\snbo8.pfl
   SURFDATA 0 2007
   UAIRDATA 3190 2007
   SITEDATA 99999 2007
   PROFBASE 300.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "Bloomington Warehouse.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "Bloomington Warehouse.AD\24H1GALL.PLT" 32
   PLOTFILE ANNUAL ALL "Bloomington Warehouse.AD\AN00GALL.PLT" 33
   SUMMFILE "Bloomington Warehouse.sum"
OU FINISHED

 ************************************
 *** SETUP Finishes Successfully ***
 ************************************

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   1
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                            ***     MODEL SETUP OPTIONS
SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for    63 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =     23851.0 ;  Urban Roughness Length =  1.000 m
```

```
 **Model Allows User-Specified Options:
        1. Stack-tip Downwash.
        2. Model Assumes Receptors on FLAT Terrain.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Used.

 **Other Options Specified:
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
    and Calculates ANNUAL Averages

 **This Run Includes:     63 Source(s);       1 Source Group(s); and     447
Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:     61 VOLUME source(s)
                and:      2 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 OPENPIT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor
(RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm
Hours
                                                                 m for Missing
Hours
                                                                 b for Both
Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   300.00 ;
Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Detailed Error/Message File:   Bloomington Warehouse.err

 **File for Summary of Results:   Bloomington Warehouse.sum

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                             ***        16:22:19
```

**MODELOPTs: NonDFAULT CONC FLAT URBAN

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	SY (METERS)	SZ (METERS)	INIT. SOURCE SCALAR VARY BY	INIT. URBAN
L0000169	0	0.54350E-07	463618.9	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000170	0	0.54350E-07	463574.6	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000171	0	0.54350E-07	463530.3	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000172	0	0.54350E-07	463486.0	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000173	0	0.54350E-07	463441.7	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000174	0	0.54350E-07	463397.4	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000175	0	0.54350E-07	463353.1	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000176	0	0.54350E-07	463308.8	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000177	0	0.54350E-07	463264.5	3767843.0	300.0	2.55	20.60	2.37	YES	
L0000178	0	0.54350E-07	463248.0	3767870.8	300.0	2.55	20.60	2.37	YES	
L0000179	0	0.54350E-07	463248.0	3767915.1	300.0	2.55	20.60	2.37	YES	
L0000180	0	0.54350E-07	463248.0	3767959.4	300.0	2.55	20.60	2.37	YES	
L0000181	0	0.54350E-07	463248.0	3768003.7	300.0	2.55	20.60	2.37	YES	
L0000182	0	0.54350E-07	463248.0	3768048.0	300.0	2.55	20.60	2.37	YES	
L0000183	0	0.54350E-07	463248.0	3768092.3	300.0	2.55	20.60	2.37	YES	
L0000184	0	0.54350E-07	463280.6	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000185	0	0.54350E-07	463324.9	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000186	0	0.54350E-07	463369.2	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000187	0	0.54350E-07	463413.5	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000188	0	0.54350E-07	463457.8	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000189	0	0.54350E-07	463502.1	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000190	0	0.54350E-07	463546.4	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000191	0	0.54350E-07	463590.7	3768104.0	300.0	2.55	20.60	2.37	YES	
L0000192	0	0.18240E-07	463630.2	3768121.1	300.0	2.55	20.60	2.37	YES	
L0000193	0	0.18240E-07	463631.0	3768165.4	300.0	2.55	20.60	2.37	YES	
L0000194	0	0.18240E-07	463631.7	3768209.7	300.0	2.55				

```
20.60     2.37     YES
 L0000195         0   0.18240E-07  463632.5 3768254.0   300.0     2.55
20.60     2.37     YES
 L0000196         0   0.18240E-07  463633.2 3768298.2   300.0     2.55
20.60     2.37     YES
 L0000197         0   0.18240E-07  463634.0 3768342.5   300.0     2.55
20.60     2.37     YES
 L0000198         0   0.18240E-07  463634.8 3768386.8   300.0     2.55
20.60     2.37     YES
 L0000199         0   0.18240E-07  463635.5 3768431.1   300.0     2.55
20.60     2.37     YES
 L0000200         0   0.18240E-07  463636.3 3768475.4   300.0     2.55
20.60     2.37     YES
 L0000201         0   0.18240E-07  463637.1 3768519.7   300.0     2.55
20.60     2.37     YES
 L0000202         0   0.18240E-07  463637.8 3768564.0   300.0     2.55
20.60     2.37     YES
 L0000203         0   0.18240E-07  463638.6 3768608.3   300.0     2.55
20.60     2.37     YES
 L0000204         0   0.18240E-07  463639.4 3768652.6   300.0     2.55
20.60     2.37     YES
 L0000205         0   0.18240E-07  463640.1 3768696.9   300.0     2.55
20.60     2.37     YES
 L0000206         0   0.18240E-07  463640.9 3768741.2   300.0     2.55
20.60     2.37     YES
 L0000207         0   0.18240E-07  463641.6 3768785.5   300.0     2.55
20.60     2.37     YES
 L0000208         0   0.18240E-07  463642.4 3768829.8   300.0     2.55
20.60     2.37     YES
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   3
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE
INIT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
     SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS)
(METERS) (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

 L0000209         0   0.18240E-07  463643.2 3768874.1   300.0     2.55
20.60     2.37     YES
 L0000210         0   0.18240E-07  463643.9 3768918.4   300.0     2.55
20.60     2.37     YES
 L0000211         0   0.18240E-07  463644.7 3768962.6   300.0     2.55
20.60     2.37     YES
 L0000212         0   0.18240E-07  463645.5 3769006.9   300.0     2.55
20.60     2.37     YES
 L0000213         0   0.18240E-07  463646.2 3769051.2   300.0     2.55
20.60     2.37     YES
 L0000214         0   0.18240E-07  463647.0 3769095.5   300.0     2.55
20.60     2.37     YES
 L0000215         0   0.18240E-07  463647.8 3769139.8   300.0     2.55
20.60     2.37     YES
 L0000216         0   0.18240E-07  463648.5 3769184.1   300.0     2.55
20.60     2.37     YES
 L0000217         0   0.18240E-07  463649.3 3769228.4   300.0     2.55
```

```
20.60     2.37     YES
 L0000218         0   0.18240E-07  463650.0 3769272.7   300.0     2.55
20.60     2.37     YES
 L0000219         0   0.18240E-07  463650.8 3769317.0   300.0     2.55
20.60     2.37     YES
 L0000220         0   0.18240E-07  463651.6 3769361.3   300.0     2.55
20.60     2.37     YES
 L0000221         0   0.18240E-07  463652.3 3769405.6   300.0     2.55
20.60     2.37     YES
 L0000222         0   0.18240E-07  463653.1 3769449.9   300.0     2.55
20.60     2.37     YES
 L0000223         0   0.18240E-07  463653.9 3769494.2   300.0     2.55
20.60     2.37     YES
 L0000224         0   0.18240E-07  463654.6 3769538.5   300.0     2.55
20.60     2.37     YES
 L0000225         0   0.18240E-07  463655.4 3769582.8   300.0     2.55
20.60     2.37     YES
 L0000226         0   0.18240E-07  463656.2 3769627.0   300.0     2.55
20.60     2.37     YES
 L0000227         0   0.18240E-07  463656.9 3769671.3   300.0     2.55
20.60     2.37     YES
 L0000228         0   0.18240E-07  463657.7 3769715.6   300.0     2.55
20.60     2.37     YES
 L0000229         0   0.18240E-07  463658.4 3769759.9   300.0     2.55
20.60     2.37     YES
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   4
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN


                                                     *** AREA SOURCE DATA ***

               NUMBER EMISSION RATE  COORD (SW CORNER)  BASE     RELEASE
X-DIM     Y-DIM    ORIENT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF
AREA   OF AREA   OF AREA     SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)
(METERS)  (METERS)   (DEG.)  (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -

 AREA1            0   0.53900E-07  463271.0 3767860.0   300.0     3.00
330.00     14.05      0.00     3.01     YES
 AREA2            0   0.53900E-07  463271.0 3768069.0   300.0     3.00
330.00     14.05      0.00     3.01     YES
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   5
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN


                                                *** SOURCE IDs DEFINING SOURCE
GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------


  ALL        L0000169    , L0000170    , L0000171    , L0000172    , L0000173
```

```
  , L0000174    , L0000175    , L0000176    ,

            L0000177    , L0000178    , L0000179    , L0000180    , L0000181
  , L0000182    , L0000183    , L0000184    ,

            L0000185    , L0000186    , L0000187    , L0000188    , L0000189
  , L0000190    , L0000191    , AREA1       ,

            AREA2       , L0000192    , L0000193    , L0000194    , L0000195
  , L0000196    , L0000197    , L0000198    ,

            L0000199    , L0000200    , L0000201    , L0000202    , L0000203
  , L0000204    , L0000205    , L0000206    ,

            L0000207    , L0000208    , L0000209    , L0000210    , L0000211
  , L0000212    , L0000213    , L0000214    ,

            L0000215    , L0000216    , L0000217    , L0000218    , L0000219
  , L0000220    , L0000221    , L0000222    ,

            L0000223    , L0000224    , L0000225    , L0000226    , L0000227
  , L0000228    , L0000229    ,
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   6
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN


                                          *** SOURCE IDs DEFINED AS URBAN
SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------


               23851.   L0000169    , L0000170    , L0000171    , L0000172
, L0000173    , L0000174    , L0000175    ,
 L0000176    ,

            L0000177    , L0000178    , L0000179    , L0000180    , L0000181
  , L0000182    , L0000183    , L0000184    ,

            L0000185    , L0000186    , L0000187    , L0000188    , L0000189
  , L0000190    , L0000191    , AREA1       ,

            AREA2       , L0000192    , L0000193    , L0000194    , L0000195
  , L0000196    , L0000197    , L0000198    ,

            L0000199    , L0000200    , L0000201    , L0000202    , L0000203
  , L0000204    , L0000205    , L0000206    ,

            L0000207    , L0000208    , L0000209    , L0000210    , L0000211
  , L0000212    , L0000213    , L0000214    ,

            L0000215    , L0000216    , L0000217    , L0000218    , L0000219
  , L0000220    , L0000221    , L0000222    ,

            L0000223    , L0000224    , L0000225    , L0000226    , L0000227
  , L0000228    , L0000229    ,
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19
```

```
                                        PAGE   7
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                          *** DISCRETE CARTESIAN RECEPTORS
***
                                         (X-COORD, Y-COORD, ZELEV, ZHILL,
ZFLAG)
                                                        (METERS)

     ( 462399.5, 3767143.2,     300.0,     300.0,       0.0);         (
462503.3, 3767143.2,     300.0,     300.0,       0.0);
     ( 462607.1, 3767143.2,     300.0,     300.0,       0.0);         (
462711.0, 3767143.2,     300.0,     300.0,       0.0);
     ( 462814.8, 3767143.2,     300.0,     300.0,       0.0);         (
462918.7, 3767143.2,     300.0,     300.0,       0.0);
     ( 463022.5, 3767143.2,     300.0,     300.0,       0.0);         (
463126.3, 3767143.2,     300.0,     300.0,       0.0);
     ( 463230.2, 3767143.2,     300.0,     300.0,       0.0);         (
463334.0, 3767143.2,     300.0,     300.0,       0.0);
     ( 463437.9, 3767143.2,     300.0,     300.0,       0.0);         (
463541.7, 3767143.2,     300.0,     300.0,       0.0);
     ( 463645.5, 3767143.2,     300.0,     300.0,       0.0);         (
463749.4, 3767143.2,     300.0,     300.0,       0.0);
     ( 463853.2, 3767143.2,     300.0,     300.0,       0.0);         (
463957.1, 3767143.2,     300.0,     300.0,       0.0);
     ( 464060.9, 3767143.2,     300.0,     300.0,       0.0);         (
464164.7, 3767143.2,     300.0,     300.0,       0.0);
     ( 464268.6, 3767143.2,     300.0,     300.0,       0.0);         (
464372.4, 3767143.2,     300.0,     300.0,       0.0);
     ( 464476.3, 3767143.2,     300.0,     300.0,       0.0);         (
462399.5, 3767282.1,     300.0,     300.0,       0.0);
     ( 462503.3, 3767282.1,     300.0,     300.0,       0.0);         (
462607.1, 3767282.1,     300.0,     300.0,       0.0);
     ( 462711.0, 3767282.1,     300.0,     300.0,       0.0);         (
462814.8, 3767282.1,     300.0,     300.0,       0.0);
     ( 462918.7, 3767282.1,     300.0,     300.0,       0.0);         (
463022.5, 3767282.1,     300.0,     300.0,       0.0);
     ( 463126.3, 3767282.1,     300.0,     300.0,       0.0);         (
463230.2, 3767282.1,     300.0,     300.0,       0.0);
     ( 463334.0, 3767282.1,     300.0,     300.0,       0.0);         (
463437.9, 3767282.1,     300.0,     300.0,       0.0);
     ( 463541.7, 3767282.1,     300.0,     300.0,       0.0);         (
463645.5, 3767282.1,     300.0,     300.0,       0.0);
     ( 463749.4, 3767282.1,     300.0,     300.0,       0.0);         (
463853.2, 3767282.1,     300.0,     300.0,       0.0);
     ( 463957.1, 3767282.1,     300.0,     300.0,       0.0);         (
464060.9, 3767282.1,     300.0,     300.0,       0.0);
     ( 464164.7, 3767282.1,     300.0,     300.0,       0.0);         (
464268.6, 3767282.1,     300.0,     300.0,       0.0);
     ( 464372.4, 3767282.1,     300.0,     300.0,       0.0);         (
464476.3, 3767282.1,     300.0,     300.0,       0.0);
     ( 462399.5, 3767421.0,     300.0,     300.0,       0.0);         (
462503.3, 3767421.0,     300.0,     300.0,       0.0);
     ( 462607.1, 3767421.0,     300.0,     300.0,       0.0);         (
462711.0, 3767421.0,     300.0,     300.0,       0.0);
     ( 462814.8, 3767421.0,     300.0,     300.0,       0.0);         (
462918.7, 3767421.0,     300.0,     300.0,       0.0);
     ( 463022.5, 3767421.0,     300.0,     300.0,       0.0);         (
463126.3, 3767421.0,     300.0,     300.0,       0.0);
     ( 463230.2, 3767421.0,     300.0,     300.0,       0.0);         (
463334.0, 3767421.0,     300.0,     300.0,       0.0);
     ( 463437.9, 3767421.0,     300.0,     300.0,       0.0);         (
463541.7, 3767421.0,     300.0,     300.0,       0.0);
     ( 463645.5, 3767421.0,     300.0,     300.0,       0.0);         (
463749.4, 3767421.0,     300.0,     300.0,       0.0);
```

```
     ( 463853.2, 3767421.0,     300.0,     300.0,       0.0);         (
463957.1, 3767421.0,     300.0,     300.0,       0.0);
     ( 464060.9, 3767421.0,     300.0,     300.0,       0.0);         (
464164.7, 3767421.0,     300.0,     300.0,       0.0);
     ( 464268.6, 3767421.0,     300.0,     300.0,       0.0);         (
464372.4, 3767421.0,     300.0,     300.0,       0.0);
     ( 464476.3, 3767421.0,     300.0,     300.0,       0.0);         (
462399.5, 3767560.0,     300.0,     300.0,       0.0);
     ( 462503.3, 3767560.0,     300.0,     300.0,       0.0);         (
462607.1, 3767560.0,     300.0,     300.0,       0.0);
     ( 462711.0, 3767560.0,     300.0,     300.0,       0.0);         (
462814.8, 3767560.0,     300.0,     300.0,       0.0);
     ( 462918.7, 3767560.0,     300.0,     300.0,       0.0);         (
463022.5, 3767560.0,     300.0,     300.0,       0.0);
     ( 463126.3, 3767560.0,     300.0,     300.0,       0.0);         (
463230.2, 3767560.0,     300.0,     300.0,       0.0);
     ( 463334.0, 3767560.0,     300.0,     300.0,       0.0);         (
463437.9, 3767560.0,     300.0,     300.0,       0.0);
     ( 463541.7, 3767560.0,     300.0,     300.0,       0.0);         (
463645.5, 3767560.0,     300.0,     300.0,       0.0);
     ( 463749.4, 3767560.0,     300.0,     300.0,       0.0);         (
463853.2, 3767560.0,     300.0,     300.0,       0.0);
     ( 463957.1, 3767560.0,     300.0,     300.0,       0.0);         (
464060.9, 3767560.0,     300.0,     300.0,       0.0);
     ( 464164.7, 3767560.0,     300.0,     300.0,       0.0);         (
464268.6, 3767560.0,     300.0,     300.0,       0.0);
     ( 464372.4, 3767560.0,     300.0,     300.0,       0.0);         (
464476.3, 3767560.0,     300.0,     300.0,       0.0);
     ( 462399.5, 3767698.9,     300.0,     300.0,       0.0);         (
462503.3, 3767698.9,     300.0,     300.0,       0.0);
     ( 462607.1, 3767698.9,     300.0,     300.0,       0.0);         (
462711.0, 3767698.9,     300.0,     300.0,       0.0);
     ( 462814.8, 3767698.9,     300.0,     300.0,       0.0);         (
462918.7, 3767698.9,     300.0,     300.0,       0.0);
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   8
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                          *** DISCRETE CARTESIAN RECEPTORS
***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL,
ZFLAG)
                                                              (METERS)

     ( 463022.5, 3767698.9,     300.0,     300.0,       0.0);         (
463126.3, 3767698.9,     300.0,     300.0,       0.0);
     ( 463230.2, 3767698.9,     300.0,     300.0,       0.0);         (
463334.0, 3767698.9,     300.0,     300.0,       0.0);
     ( 463437.9, 3767698.9,     300.0,     300.0,       0.0);         (
463541.7, 3767698.9,     300.0,     300.0,       0.0);
     ( 463645.5, 3767698.9,     300.0,     300.0,       0.0);         (
463749.4, 3767698.9,     300.0,     300.0,       0.0);
     ( 463853.2, 3767698.9,     300.0,     300.0,       0.0);         (
463957.1, 3767698.9,     300.0,     300.0,       0.0);
     ( 464060.9, 3767698.9,     300.0,     300.0,       0.0);         (
464164.7, 3767698.9,     300.0,     300.0,       0.0);
     ( 464268.6, 3767698.9,     300.0,     300.0,       0.0);         (
464372.4, 3767698.9,     300.0,     300.0,       0.0);
     ( 464476.3, 3767698.9,     300.0,     300.0,       0.0);         (
462399.5, 3767837.9,     300.0,     300.0,       0.0);
     ( 462503.3, 3767837.9,     300.0,     300.0,       0.0);         (
462607.1, 3767837.9,     300.0,     300.0,       0.0);
```

```
     ( 462711.0, 3767837.9,     300.0,     300.0,       0.0);          (
462814.8, 3767837.9,     300.0,     300.0,       0.0);
     ( 462918.7, 3767837.9,     300.0,     300.0,       0.0);          (
463022.5, 3767837.9,     300.0,     300.0,       0.0);
     ( 463126.3, 3767837.9,     300.0,     300.0,       0.0);          (
463230.2, 3767837.9,     300.0,     300.0,       0.0);
     ( 463334.0, 3767837.9,     300.0,     300.0,       0.0);          (
463437.9, 3767837.9,     300.0,     300.0,       0.0);
     ( 463541.7, 3767837.9,     300.0,     300.0,       0.0);          (
463645.5, 3767837.9,     300.0,     300.0,       0.0);
     ( 463749.4, 3767837.9,     300.0,     300.0,       0.0);          (
463853.2, 3767837.9,     300.0,     300.0,       0.0);
     ( 463957.1, 3767837.9,     300.0,     300.0,       0.0);          (
464060.9, 3767837.9,     300.0,     300.0,       0.0);
     ( 464164.7, 3767837.9,     300.0,     300.0,       0.0);          (
464268.6, 3767837.9,     300.0,     300.0,       0.0);
     ( 464372.4, 3767837.9,     300.0,     300.0,       0.0);          (
464476.3, 3767837.9,     300.0,     300.0,       0.0);
     ( 462399.5, 3767976.8,     300.0,     300.0,       0.0);          (
462503.3, 3767976.8,     300.0,     300.0,       0.0);
     ( 462607.1, 3767976.8,     300.0,     300.0,       0.0);          (
462711.0, 3767976.8,     300.0,     300.0,       0.0);
     ( 462814.8, 3767976.8,     300.0,     300.0,       0.0);          (
462918.7, 3767976.8,     300.0,     300.0,       0.0);
     ( 463022.5, 3767976.8,     300.0,     300.0,       0.0);          (
463126.3, 3767976.8,     300.0,     300.0,       0.0);
     ( 463230.2, 3767976.8,     300.0,     300.0,       0.0);          (
463334.0, 3767976.8,     300.0,     300.0,       0.0);
     ( 463437.9, 3767976.8,     300.0,     300.0,       0.0);          (
463541.7, 3767976.8,     300.0,     300.0,       0.0);
     ( 463645.5, 3767976.8,     300.0,     300.0,       0.0);          (
463749.4, 3767976.8,     300.0,     300.0,       0.0);
     ( 463853.2, 3767976.8,     300.0,     300.0,       0.0);          (
463957.1, 3767976.8,     300.0,     300.0,       0.0);
     ( 464060.9, 3767976.8,     300.0,     300.0,       0.0);          (
464164.7, 3767976.8,     300.0,     300.0,       0.0);
     ( 464268.6, 3767976.8,     300.0,     300.0,       0.0);          (
464372.4, 3767976.8,     300.0,     300.0,       0.0);
     ( 464476.3, 3767976.8,     300.0,     300.0,       0.0);          (
462399.5, 3768115.8,     300.0,     300.0,       0.0);
     ( 462503.3, 3768115.8,     300.0,     300.0,       0.0);          (
462607.1, 3768115.8,     300.0,     300.0,       0.0);
     ( 462711.0, 3768115.8,     300.0,     300.0,       0.0);          (
462814.8, 3768115.8,     300.0,     300.0,       0.0);
     ( 462918.7, 3768115.8,     300.0,     300.0,       0.0);          (
463022.5, 3768115.8,     300.0,     300.0,       0.0);
     ( 463126.3, 3768115.8,     300.0,     300.0,       0.0);          (
463230.2, 3768115.8,     300.0,     300.0,       0.0);
     ( 463334.0, 3768115.8,     300.0,     300.0,       0.0);          (
463437.9, 3768115.8,     300.0,     300.0,       0.0);
     ( 463541.7, 3768115.8,     300.0,     300.0,       0.0);          (
463645.5, 3768115.8,     300.0,     300.0,       0.0);
     ( 463749.4, 3768115.8,     300.0,     300.0,       0.0);          (
463853.2, 3768115.8,     300.0,     300.0,       0.0);
     ( 463957.1, 3768115.8,     300.0,     300.0,       0.0);          (
464060.9, 3768115.8,     300.0,     300.0,       0.0);
     ( 464164.7, 3768115.8,     300.0,     300.0,       0.0);          (
464268.6, 3768115.8,     300.0,     300.0,       0.0);
     ( 464372.4, 3768115.8,     300.0,     300.0,       0.0);          (
464476.3, 3768115.8,     300.0,     300.0,       0.0);
     ( 462399.5, 3768254.7,     300.0,     300.0,       0.0);          (
462503.3, 3768254.7,     300.0,     300.0,       0.0);
     ( 462607.1, 3768254.7,     300.0,     300.0,       0.0);          (
462711.0, 3768254.7,     300.0,     300.0,       0.0);
     ( 462814.8, 3768254.7,     300.0,     300.0,       0.0);          (
462918.7, 3768254.7,     300.0,     300.0,       0.0);
```

```
     ( 463022.5, 3768254.7,     300.0,     300.0,       0.0);         (
463126.3, 3768254.7,     300.0,     300.0,       0.0);
     ( 463230.2, 3768254.7,     300.0,     300.0,       0.0);         (
463334.0, 3768254.7,     300.0,     300.0,       0.0);
     ( 463437.9, 3768254.7,     300.0,     300.0,       0.0);         (
463541.7, 3768254.7,     300.0,     300.0,       0.0);
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE   9
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                          *** DISCRETE CARTESIAN RECEPTORS
***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL,
ZFLAG)
                                                              (METERS)

     ( 463645.5, 3768254.7,     300.0,     300.0,       0.0);         (
463749.4, 3768254.7,     300.0,     300.0,       0.0);
     ( 463853.2, 3768254.7,     300.0,     300.0,       0.0);         (
463957.1, 3768254.7,     300.0,     300.0,       0.0);
     ( 464060.9, 3768254.7,     300.0,     300.0,       0.0);         (
464164.7, 3768254.7,     300.0,     300.0,       0.0);
     ( 464268.6, 3768254.7,     300.0,     300.0,       0.0);         (
464372.4, 3768254.7,     300.0,     300.0,       0.0);
     ( 464476.3, 3768254.7,     300.0,     300.0,       0.0);         (
462399.5, 3768393.6,     300.0,     300.0,       0.0);
     ( 462503.3, 3768393.6,     300.0,     300.0,       0.0);         (
462607.1, 3768393.6,     300.0,     300.0,       0.0);
     ( 462711.0, 3768393.6,     300.0,     300.0,       0.0);         (
462814.8, 3768393.6,     300.0,     300.0,       0.0);
     ( 462918.7, 3768393.6,     300.0,     300.0,       0.0);         (
463022.5, 3768393.6,     300.0,     300.0,       0.0);
     ( 463126.3, 3768393.6,     300.0,     300.0,       0.0);         (
463230.2, 3768393.6,     300.0,     300.0,       0.0);
     ( 463334.0, 3768393.6,     300.0,     300.0,       0.0);         (
463437.9, 3768393.6,     300.0,     300.0,       0.0);
     ( 463541.7, 3768393.6,     300.0,     300.0,       0.0);         (
463645.5, 3768393.6,     300.0,     300.0,       0.0);
     ( 463749.4, 3768393.6,     300.0,     300.0,       0.0);         (
463853.2, 3768393.6,     300.0,     300.0,       0.0);
     ( 463957.1, 3768393.6,     300.0,     300.0,       0.0);         (
464060.9, 3768393.6,     300.0,     300.0,       0.0);
     ( 464164.7, 3768393.6,     300.0,     300.0,       0.0);         (
464268.6, 3768393.6,     300.0,     300.0,       0.0);
     ( 464372.4, 3768393.6,     300.0,     300.0,       0.0);         (
464476.3, 3768393.6,     300.0,     300.0,       0.0);
     ( 462399.5, 3768532.6,     300.0,     300.0,       0.0);         (
462503.3, 3768532.6,     300.0,     300.0,       0.0);
     ( 462607.1, 3768532.6,     300.0,     300.0,       0.0);         (
462711.0, 3768532.6,     300.0,     300.0,       0.0);
     ( 462814.8, 3768532.6,     300.0,     300.0,       0.0);         (
462918.7, 3768532.6,     300.0,     300.0,       0.0);
     ( 463022.5, 3768532.6,     300.0,     300.0,       0.0);         (
463126.3, 3768532.6,     300.0,     300.0,       0.0);
     ( 463230.2, 3768532.6,     300.0,     300.0,       0.0);         (
463334.0, 3768532.6,     300.0,     300.0,       0.0);
     ( 463437.9, 3768532.6,     300.0,     300.0,       0.0);         (
463541.7, 3768532.6,     300.0,     300.0,       0.0);
     ( 463645.5, 3768532.6,     300.0,     300.0,       0.0);         (
463749.4, 3768532.6,     300.0,     300.0,       0.0);
     ( 463853.2, 3768532.6,     300.0,     300.0,       0.0);         (
463957.1, 3768532.6,     300.0,     300.0,       0.0);
```

```
     ( 464060.9, 3768532.6,     300.0,     300.0,       0.0);         (
464164.7, 3768532.6,     300.0,     300.0,       0.0);
     ( 464268.6, 3768532.6,     300.0,     300.0,       0.0);         (
464372.4, 3768532.6,     300.0,     300.0,       0.0);
     ( 464476.3, 3768532.6,     300.0,     300.0,       0.0);         (
462399.5, 3768671.5,     300.0,     300.0,       0.0);
     ( 462503.3, 3768671.5,     300.0,     300.0,       0.0);         (
462607.1, 3768671.5,     300.0,     300.0,       0.0);
     ( 462711.0, 3768671.5,     300.0,     300.0,       0.0);         (
462814.8, 3768671.5,     300.0,     300.0,       0.0);
     ( 462918.7, 3768671.5,     300.0,     300.0,       0.0);         (
463022.5, 3768671.5,     300.0,     300.0,       0.0);
     ( 463126.3, 3768671.5,     300.0,     300.0,       0.0);         (
463230.2, 3768671.5,     300.0,     300.0,       0.0);
     ( 463334.0, 3768671.5,     300.0,     300.0,       0.0);         (
463437.9, 3768671.5,     300.0,     300.0,       0.0);
     ( 463541.7, 3768671.5,     300.0,     300.0,       0.0);         (
463645.5, 3768671.5,     300.0,     300.0,       0.0);
     ( 463749.4, 3768671.5,     300.0,     300.0,       0.0);         (
463853.2, 3768671.5,     300.0,     300.0,       0.0);
     ( 463957.1, 3768671.5,     300.0,     300.0,       0.0);         (
464060.9, 3768671.5,     300.0,     300.0,       0.0);
     ( 464164.7, 3768671.5,     300.0,     300.0,       0.0);         (
464268.6, 3768671.5,     300.0,     300.0,       0.0);
     ( 464372.4, 3768671.5,     300.0,     300.0,       0.0);         (
464476.3, 3768671.5,     300.0,     300.0,       0.0);
     ( 462399.5, 3768810.4,     300.0,     300.0,       0.0);         (
462503.3, 3768810.4,     300.0,     300.0,       0.0);
     ( 462607.1, 3768810.4,     300.0,     300.0,       0.0);         (
462711.0, 3768810.4,     300.0,     300.0,       0.0);
     ( 462814.8, 3768810.4,     300.0,     300.0,       0.0);         (
462918.7, 3768810.4,     300.0,     300.0,       0.0);
     ( 463022.5, 3768810.4,     300.0,     300.0,       0.0);         (
463126.3, 3768810.4,     300.0,     300.0,       0.0);
     ( 463230.2, 3768810.4,     300.0,     300.0,       0.0);         (
463334.0, 3768810.4,     300.0,     300.0,       0.0);
     ( 463437.9, 3768810.4,     300.0,     300.0,       0.0);         (
463541.7, 3768810.4,     300.0,     300.0,       0.0);
     ( 463645.5, 3768810.4,     300.0,     300.0,       0.0);         (
463749.4, 3768810.4,     300.0,     300.0,       0.0);
     ( 463853.2, 3768810.4,     300.0,     300.0,       0.0);         (
463957.1, 3768810.4,     300.0,     300.0,       0.0);
     ( 464060.9, 3768810.4,     300.0,     300.0,       0.0);         (
464164.7, 3768810.4,     300.0,     300.0,       0.0);
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  10
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                          *** DISCRETE CARTESIAN RECEPTORS
***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL,
ZFLAG)
                                                              (METERS)

     ( 464268.6, 3768810.4,     300.0,     300.0,       0.0);         (
464372.4, 3768810.4,     300.0,     300.0,       0.0);
     ( 464476.3, 3768810.4,     300.0,     300.0,       0.0);         (
462399.5, 3768949.4,     300.0,     300.0,       0.0);
     ( 462503.3, 3768949.4,     300.0,     300.0,       0.0);         (
462607.1, 3768949.4,     300.0,     300.0,       0.0);
     ( 462711.0, 3768949.4,     300.0,     300.0,       0.0);         (
462814.8, 3768949.4,     300.0,     300.0,       0.0);
```

```
     ( 462918.7, 3768949.4,     300.0,     300.0,       0.0);          (
463022.5, 3768949.4,     300.0,     300.0,       0.0);
     ( 463126.3, 3768949.4,     300.0,     300.0,       0.0);          (
463230.2, 3768949.4,     300.0,     300.0,       0.0);
     ( 463334.0, 3768949.4,     300.0,     300.0,       0.0);          (
463437.9, 3768949.4,     300.0,     300.0,       0.0);
     ( 463541.7, 3768949.4,     300.0,     300.0,       0.0);          (
463645.5, 3768949.4,     300.0,     300.0,       0.0);
     ( 463749.4, 3768949.4,     300.0,     300.0,       0.0);          (
463853.2, 3768949.4,     300.0,     300.0,       0.0);
     ( 463957.1, 3768949.4,     300.0,     300.0,       0.0);          (
464060.9, 3768949.4,     300.0,     300.0,       0.0);
     ( 464164.7, 3768949.4,     300.0,     300.0,       0.0);          (
464268.6, 3768949.4,     300.0,     300.0,       0.0);
     ( 464372.4, 3768949.4,     300.0,     300.0,       0.0);          (
464476.3, 3768949.4,     300.0,     300.0,       0.0);
     ( 462399.5, 3769088.3,     300.0,     300.0,       0.0);          (
462503.3, 3769088.3,     300.0,     300.0,       0.0);
     ( 462607.1, 3769088.3,     300.0,     300.0,       0.0);          (
462711.0, 3769088.3,     300.0,     300.0,       0.0);
     ( 462814.8, 3769088.3,     300.0,     300.0,       0.0);          (
462918.7, 3769088.3,     300.0,     300.0,       0.0);
     ( 463022.5, 3769088.3,     300.0,     300.0,       0.0);          (
463126.3, 3769088.3,     300.0,     300.0,       0.0);
     ( 463230.2, 3769088.3,     300.0,     300.0,       0.0);          (
463334.0, 3769088.3,     300.0,     300.0,       0.0);
     ( 463437.9, 3769088.3,     300.0,     300.0,       0.0);          (
463541.7, 3769088.3,     300.0,     300.0,       0.0);
     ( 463645.5, 3769088.3,     300.0,     300.0,       0.0);          (
463749.4, 3769088.3,     300.0,     300.0,       0.0);
     ( 463853.2, 3769088.3,     300.0,     300.0,       0.0);          (
463957.1, 3769088.3,     300.0,     300.0,       0.0);
     ( 464060.9, 3769088.3,     300.0,     300.0,       0.0);          (
464164.7, 3769088.3,     300.0,     300.0,       0.0);
     ( 464268.6, 3769088.3,     300.0,     300.0,       0.0);          (
464372.4, 3769088.3,     300.0,     300.0,       0.0);
     ( 464476.3, 3769088.3,     300.0,     300.0,       0.0);          (
462399.5, 3769227.3,     300.0,     300.0,       0.0);
     ( 462503.3, 3769227.3,     300.0,     300.0,       0.0);          (
462607.1, 3769227.3,     300.0,     300.0,       0.0);
     ( 462711.0, 3769227.3,     300.0,     300.0,       0.0);          (
462814.8, 3769227.3,     300.0,     300.0,       0.0);
     ( 462918.7, 3769227.3,     300.0,     300.0,       0.0);          (
463022.5, 3769227.3,     300.0,     300.0,       0.0);
     ( 463126.3, 3769227.3,     300.0,     300.0,       0.0);          (
463230.2, 3769227.3,     300.0,     300.0,       0.0);
     ( 463334.0, 3769227.3,     300.0,     300.0,       0.0);          (
463437.9, 3769227.3,     300.0,     300.0,       0.0);
     ( 463541.7, 3769227.3,     300.0,     300.0,       0.0);          (
463645.5, 3769227.3,     300.0,     300.0,       0.0);
     ( 463749.4, 3769227.3,     300.0,     300.0,       0.0);          (
463853.2, 3769227.3,     300.0,     300.0,       0.0);
     ( 463957.1, 3769227.3,     300.0,     300.0,       0.0);          (
464060.9, 3769227.3,     300.0,     300.0,       0.0);
     ( 464164.7, 3769227.3,     300.0,     300.0,       0.0);          (
464268.6, 3769227.3,     300.0,     300.0,       0.0);
     ( 464372.4, 3769227.3,     300.0,     300.0,       0.0);          (
464476.3, 3769227.3,     300.0,     300.0,       0.0);
     ( 462399.5, 3769366.2,     300.0,     300.0,       0.0);          (
462503.3, 3769366.2,     300.0,     300.0,       0.0);
     ( 462607.1, 3769366.2,     300.0,     300.0,       0.0);          (
462711.0, 3769366.2,     300.0,     300.0,       0.0);
     ( 462814.8, 3769366.2,     300.0,     300.0,       0.0);          (
462918.7, 3769366.2,     300.0,     300.0,       0.0);
     ( 463022.5, 3769366.2,     300.0,     300.0,       0.0);          (
463126.3, 3769366.2,     300.0,     300.0,       0.0);
```

```
     ( 463230.2, 3769366.2,     300.0,     300.0,       0.0);         (
463334.0, 3769366.2,     300.0,     300.0,       0.0);
     ( 463437.9, 3769366.2,     300.0,     300.0,       0.0);         (
463541.7, 3769366.2,     300.0,     300.0,       0.0);
     ( 463645.5, 3769366.2,     300.0,     300.0,       0.0);         (
463749.4, 3769366.2,     300.0,     300.0,       0.0);
     ( 463853.2, 3769366.2,     300.0,     300.0,       0.0);         (
463957.1, 3769366.2,     300.0,     300.0,       0.0);
     ( 464060.9, 3769366.2,     300.0,     300.0,       0.0);         (
464164.7, 3769366.2,     300.0,     300.0,       0.0);
     ( 464268.6, 3769366.2,     300.0,     300.0,       0.0);         (
464372.4, 3769366.2,     300.0,     300.0,       0.0);
     ( 464476.3, 3769366.2,     300.0,     300.0,       0.0);         (
462399.5, 3769505.1,     300.0,     300.0,       0.0);
     ( 462503.3, 3769505.1,     300.0,     300.0,       0.0);         (
462607.1, 3769505.1,     300.0,     300.0,       0.0);
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  11
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                          *** DISCRETE CARTESIAN RECEPTORS
***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL,
ZFLAG)
                                                              (METERS)

     ( 462711.0, 3769505.1,     300.0,     300.0,       0.0);         (
462814.8, 3769505.1,     300.0,     300.0,       0.0);
     ( 462918.7, 3769505.1,     300.0,     300.0,       0.0);         (
463022.5, 3769505.1,     300.0,     300.0,       0.0);
     ( 463126.3, 3769505.1,     300.0,     300.0,       0.0);         (
463230.2, 3769505.1,     300.0,     300.0,       0.0);
     ( 463334.0, 3769505.1,     300.0,     300.0,       0.0);         (
463437.9, 3769505.1,     300.0,     300.0,       0.0);
     ( 463541.7, 3769505.1,     300.0,     300.0,       0.0);         (
463645.5, 3769505.1,     300.0,     300.0,       0.0);
     ( 463749.4, 3769505.1,     300.0,     300.0,       0.0);         (
463853.2, 3769505.1,     300.0,     300.0,       0.0);
     ( 463957.1, 3769505.1,     300.0,     300.0,       0.0);         (
464060.9, 3769505.1,     300.0,     300.0,       0.0);
     ( 464164.7, 3769505.1,     300.0,     300.0,       0.0);         (
464268.6, 3769505.1,     300.0,     300.0,       0.0);
     ( 464372.4, 3769505.1,     300.0,     300.0,       0.0);         (
464476.3, 3769505.1,     300.0,     300.0,       0.0);
     ( 462399.5, 3769644.1,     300.0,     300.0,       0.0);         (
462503.3, 3769644.1,     300.0,     300.0,       0.0);
     ( 462607.1, 3769644.1,     300.0,     300.0,       0.0);         (
462711.0, 3769644.1,     300.0,     300.0,       0.0);
     ( 462814.8, 3769644.1,     300.0,     300.0,       0.0);         (
462918.7, 3769644.1,     300.0,     300.0,       0.0);
     ( 463022.5, 3769644.1,     300.0,     300.0,       0.0);         (
463126.3, 3769644.1,     300.0,     300.0,       0.0);
     ( 463230.2, 3769644.1,     300.0,     300.0,       0.0);         (
463334.0, 3769644.1,     300.0,     300.0,       0.0);
     ( 463437.9, 3769644.1,     300.0,     300.0,       0.0);         (
463541.7, 3769644.1,     300.0,     300.0,       0.0);
     ( 463645.5, 3769644.1,     300.0,     300.0,       0.0);         (
463749.4, 3769644.1,     300.0,     300.0,       0.0);
     ( 463853.2, 3769644.1,     300.0,     300.0,       0.0);         (
463957.1, 3769644.1,     300.0,     300.0,       0.0);
     ( 464060.9, 3769644.1,     300.0,     300.0,       0.0);         (
464164.7, 3769644.1,     300.0,     300.0,       0.0);
```

```
     ( 464268.6, 3769644.1,     300.0,     300.0,       0.0);         (
464372.4, 3769644.1,     300.0,     300.0,       0.0);
     ( 464476.3, 3769644.1,     300.0,     300.0,       0.0);         (
462399.5, 3769783.0,     300.0,     300.0,       0.0);
     ( 462503.3, 3769783.0,     300.0,     300.0,       0.0);         (
462607.1, 3769783.0,     300.0,     300.0,       0.0);
     ( 462711.0, 3769783.0,     300.0,     300.0,       0.0);         (
462814.8, 3769783.0,     300.0,     300.0,       0.0);
     ( 462918.7, 3769783.0,     300.0,     300.0,       0.0);         (
463022.5, 3769783.0,     300.0,     300.0,       0.0);
     ( 463126.3, 3769783.0,     300.0,     300.0,       0.0);         (
463230.2, 3769783.0,     300.0,     300.0,       0.0);
     ( 463334.0, 3769783.0,     300.0,     300.0,       0.0);         (
463437.9, 3769783.0,     300.0,     300.0,       0.0);
     ( 463541.7, 3769783.0,     300.0,     300.0,       0.0);         (
463645.5, 3769783.0,     300.0,     300.0,       0.0);
     ( 463749.4, 3769783.0,     300.0,     300.0,       0.0);         (
463853.2, 3769783.0,     300.0,     300.0,       0.0);
     ( 463957.1, 3769783.0,     300.0,     300.0,       0.0);         (
464060.9, 3769783.0,     300.0,     300.0,       0.0);
     ( 464164.7, 3769783.0,     300.0,     300.0,       0.0);         (
464268.6, 3769783.0,     300.0,     300.0,       0.0);
     ( 464372.4, 3769783.0,     300.0,     300.0,       0.0);         (
464476.3, 3769783.0,     300.0,     300.0,       0.0);
     ( 462399.5, 3769922.0,     300.0,     300.0,       0.0);         (
462503.3, 3769922.0,     300.0,     300.0,       0.0);
     ( 462607.1, 3769922.0,     300.0,     300.0,       0.0);         (
462711.0, 3769922.0,     300.0,     300.0,       0.0);
     ( 462814.8, 3769922.0,     300.0,     300.0,       0.0);         (
462918.7, 3769922.0,     300.0,     300.0,       0.0);
     ( 463022.5, 3769922.0,     300.0,     300.0,       0.0);         (
463126.3, 3769922.0,     300.0,     300.0,       0.0);
     ( 463230.2, 3769922.0,     300.0,     300.0,       0.0);         (
463334.0, 3769922.0,     300.0,     300.0,       0.0);
     ( 463437.9, 3769922.0,     300.0,     300.0,       0.0);         (
463541.7, 3769922.0,     300.0,     300.0,       0.0);
     ( 463645.5, 3769922.0,     300.0,     300.0,       0.0);         (
463749.4, 3769922.0,     300.0,     300.0,       0.0);
     ( 463853.2, 3769922.0,     300.0,     300.0,       0.0);         (
463957.1, 3769922.0,     300.0,     300.0,       0.0);
     ( 464060.9, 3769922.0,     300.0,     300.0,       0.0);         (
464164.7, 3769922.0,     300.0,     300.0,       0.0);
     ( 464268.6, 3769922.0,     300.0,     300.0,       0.0);         (
464372.4, 3769922.0,     300.0,     300.0,       0.0);
     ( 464476.3, 3769922.0,     300.0,     300.0,       0.0);         (
463236.0, 3768116.0,     300.0,     300.0,       0.0);
     ( 463239.0, 3767823.0,     300.0,     300.0,       0.0);         (
463326.0, 3767821.0,     300.0,     300.0,       0.0);
     ( 463328.0, 3767727.0,     300.0,     300.0,       0.0);         (
463619.0, 3767725.0,     300.0,     300.0,       0.0);
     ( 463618.0, 3768116.0,     300.0,     300.0,       0.0);

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                               ***        16:22:19

                                          PAGE  12
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                      * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS
MAY NOT BE PERFORMED *
                        LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM
FOR FASTAREA/FASTALL
```

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000169	463645.5	3767837.9	-17.19
L0000170	463541.7	3767837.9	-10.97
L0000171	463541.7	3767837.9	-31.81
L0000173	463437.9	3767837.9	-37.87
L0000174	463437.9	3767837.9	-3.53
L0000175	463334.0	3767837.9	-24.51
L0000175	463326.0	3767821.0	-9.36
L0000176	463334.0	3767837.9	-18.58
L0000176	463326.0	3767821.0	-16.38
L0000177	463230.2	3767837.9	-9.56
L0000177	463239.0	3767823.0	-11.86
L0000178	463230.2	3767837.9	-6.87
L0000180	463230.2	3767976.8	-19.36
L0000181	463230.2	3767976.8	-12.05
L0000183	463230.2	3768115.8	-14.82
L0000183	463236.0	3768116.0	-17.70
L0000185	463334.0	3768115.8	-29.40
L0000186	463334.0	3768115.8	-7.22
L0000187	463437.9	3768115.8	-17.22
L0000188	463437.9	3768115.8	-21.17
L0000189	463541.7	3768115.8	-2.96
L0000190	463541.7	3768115.8	-31.64
L0000191	463618.0	3768116.0	-14.45
L0000192	463645.5	3768115.8	-28.04
L0000192	463618.0	3768116.0	-31.09
L0000195	463645.5	3768254.7	-31.21
L0000196	463645.5	3768254.7	0.97
L0000198	463645.5	3768393.6	-31.56
L0000199	463645.5	3768393.6	-5.48
L0000201	463645.5	3768532.6	

```
   -28.89
                              L0000202            463645.5     3768532.6
   -11.92
                              L0000204            463645.5     3768671.5
   -24.39
                              L0000205            463645.5     3768671.5
   -18.34
                              L0000207            463645.5     3768810.4
   -19.01
                              L0000208            463645.5     3768810.4
   -24.72
                              L0000210            463645.5     3768949.4
   -13.21
                              L0000211            463645.5     3768949.4
   -31.01
                              L0000213            463645.5     3769088.3
    -7.19
                              L0000214            463645.5     3769088.3
   -36.95
                              L0000216            463645.5     3769227.3
    -1.03
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  13
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                       * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS
MAY NOT BE PERFORMED *
                        LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM
FOR FASTAREA/FASTALL


                               SOURCE          - - RECEPTOR LOCATION - -
 DISTANCE
                                 ID            XR (METERS)   YR (METERS)
 (METERS)
                            - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

                              L0000217            463645.5     3769227.3
   -40.38
                              L0000220            463645.5     3769366.2
   -36.50
                              L0000221            463645.5     3769366.2
    -4.34
                              L0000223            463645.5     3769505.1
   -30.51
                              L0000224            463645.5     3769505.1
    -9.76
                              L0000226            463645.5     3769644.1
   -24.21
                              L0000227            463645.5     3769644.1
   -14.76
                              L0000229            463645.5     3769783.0
   -17.83
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  14
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN
```

```
                                                    *** METEOROLOGICAL DAYS SELECTED
FOR PROCESSING ***
                                                                          (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

```
                                        *** UPPER BOUND OF FIRST THROUGH FIFTH WIND
SPEED CATEGORIES ***
                                                                    (METERS/SEC)

                                                     1.54,   3.09,   5.14,   8.23,
 10.80,
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                               ***        16:22:19

                                           PAGE  15
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                        *** UP TO THE FIRST 24 HOURS OF
METEOROLOGICAL DATA ***

   Surface file:   ..\HRA\snbo8.sfc
                      Met Version:  14134
   Profile file:   ..\HRA\snbo8.pfl

   Surface format: FREE

   Profile format: FREE

   Surface station no.:        0                  Upper air station no.:
3190
                  Name: UNKNOWN                                      Name:
UNKNOWN
                  Year:   2007                                       Year:
2007

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN
ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -
 07 01 01   1 01   -0.5  0.030 -9.000 -9.000 -999.   12.      4.4  0.32   1.00
  1.00    0.50   27.    9.1  279.9    5.5
 07 01 01   1 02   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3  0.32   1.00
  1.00    0.50    7.    9.1  279.2    5.5
```

```
 07 01 01   1 03   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3  0.32   1.00
  1.00    0.50   97.    9.1  278.8    5.5
 07 01 01   1 04   -0.7  0.030 -9.000 -9.000 -999.   12.      3.1  0.32   1.00
  1.00    0.50  148.    9.1  278.1    5.5
 07 01 01   1 05   -2.4  0.054 -9.000 -9.000 -999.   30.      5.5  0.32   1.00
  1.00    0.90   87.    9.1  278.1    5.5
 07 01 01   1 06   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00
  1.00    0.90  208.    9.1  277.0    5.5
 07 01 01   1 07   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00
  1.00    0.90  156.    9.1  277.5    5.5
 07 01 01   1 08   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00
  0.52    0.90   60.    9.1  277.5    5.5
 07 01 01   1 09   34.6  0.390  0.621  0.005  241.  585.   -149.6  0.32   1.00
  0.31    3.10  264.    9.1  282.5    5.5
 07 01 01   1 10   78.0  0.267  1.066  0.005  541.  341.    -21.3  0.32   1.00
  0.24    1.80  242.    9.1  289.2    5.5
 07 01 01   1 11  112.9  0.612  1.395  0.019  839. 1149.   -176.9  0.32   1.00
  0.21    4.90   82.    9.1  290.4    5.5
 07 01 01   1 12  130.3  0.615  1.611  0.020 1120. 1158.   -155.8  0.32   1.00
  0.20    4.90   74.    9.1  290.9    5.5
 07 01 01   1 13  128.2  0.671  1.662  0.015 1250. 1315.   -204.9  0.32   1.00
  0.20    5.40   59.    9.1  290.9    5.5
 07 01 01   1 14  107.5  0.712  1.575  0.007 1267. 1439.   -292.1  0.32   1.00
  0.22    5.80   58.    9.1  291.4    5.5
 07 01 01   1 15   68.1  0.602  1.356  0.021 1277. 1137.   -279.3  0.32   1.00
  0.25    4.90   40.    9.1  291.4    5.5
 07 01 01   1 16   18.1  0.438  0.872  0.021 1278.  724.   -405.7  0.32   1.00
  0.34    3.60  312.    9.1  292.0    5.5
 07 01 01   1 17  -25.8  0.263 -9.000 -9.000 -999.  353.     61.6  0.32   1.00
  0.63    2.70  342.    9.1  290.9    5.5
 07 01 01   1 18   -4.9  0.077 -9.000 -9.000 -999.  114.      8.1  0.32   1.00
  1.00    1.30  256.    9.1  289.2    5.5
 07 01 01   1 19   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00
  1.00    1.30  191.    9.1  289.9    5.5
 07 01 01   1 20   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00
  1.00    1.30  197.    9.1  289.9    5.5
 07 01 01   1 21   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00
  1.00    1.30  190.    9.1  289.9    5.5
 07 01 01   1 22   -2.4  0.054 -9.000 -9.000 -999.   30.      5.6  0.32   1.00
  1.00    0.90  188.    9.1  289.2    5.5
 07 01 01   1 23   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00
  1.00    1.80  162.    9.1  289.9    5.5
 07 01 01   1 24   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00
  1.00    1.80   42.    9.1  289.2    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 07 01 01 01    5.5 0 -999.  -99.00   279.9   99.0  -99.00  -99.00
 07 01 01 01    9.1 1   27.    0.50  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                               ***        16:22:19

                                          PAGE  16
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                    *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                     INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                 L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
```

```
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                            ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
  Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         462399.46    3767143.17        0.00102                       462503.30
   3767143.17        0.00115
         462607.14    3767143.17        0.00130                       462710.98
   3767143.17        0.00148
         462814.82    3767143.17        0.00169                       462918.66
   3767143.17        0.00192
         463022.50    3767143.17        0.00212                       463126.34
   3767143.17        0.00222
         463230.18    3767143.17        0.00214                       463334.02
   3767143.17        0.00190
         463437.86    3767143.17        0.00156                       463541.70
   3767143.17        0.00123
         463645.54    3767143.17        0.00097                       463749.38
   3767143.17        0.00079
         463853.22    3767143.17        0.00066                       463957.06
   3767143.17        0.00057
         464060.90    3767143.17        0.00049                       464164.74
   3767143.17        0.00043
         464268.58    3767143.17        0.00037                       464372.42
   3767143.17        0.00033
         464476.26    3767143.17        0.00029                       462399.46
   3767282.11        0.00107
         462503.30    3767282.11        0.00124                       462607.14
   3767282.11        0.00144
         462710.98    3767282.11        0.00168                       462814.82
   3767282.11        0.00197
         462918.66    3767282.11        0.00230                       463022.50
   3767282.11        0.00266
         463126.34    3767282.11        0.00293                       463230.18
   3767282.11        0.00295
         463334.02    3767282.11        0.00266                       463437.86
   3767282.11        0.00216
         463541.70    3767282.11        0.00164                       463645.54
   3767282.11        0.00124
         463749.38    3767282.11        0.00098                       463853.22
   3767282.11        0.00080
         463957.06    3767282.11        0.00067                       464060.90
   3767282.11        0.00056
         464164.74    3767282.11        0.00048                       464268.58
   3767282.11        0.00041
         464372.42    3767282.11        0.00035                       464476.26
   3767282.11        0.00031
         462399.46    3767421.05        0.00110                       462503.30
   3767421.05        0.00130
         462607.14    3767421.05        0.00155                       462710.98
   3767421.05        0.00187
         462814.82    3767421.05        0.00226                       462918.66
   3767421.05        0.00276
         463022.50    3767421.05        0.00337                       463126.34
   3767421.05        0.00398
         463230.18    3767421.05        0.00429                       463334.02
```

```
   3767421.05        0.00401
         463437.86    3767421.05        0.00323                      463541.70
   3767421.05        0.00234
         463645.54    3767421.05        0.00166                      463749.38
   3767421.05        0.00125
         463853.22    3767421.05        0.00098                      463957.06
   3767421.05        0.00079
         464060.90    3767421.05        0.00065                      464164.74
   3767421.05        0.00053
         464268.58    3767421.05        0.00044                      464372.42
   3767421.05        0.00037
         464476.26    3767421.05        0.00032                      462399.46
   3767559.99        0.00110
         462503.30    3767559.99        0.00131                      462607.14
   3767559.99        0.00159
         462710.98    3767559.99        0.00198                      462814.82
   3767559.99        0.00250
         462918.66    3767559.99        0.00323                      463022.50
   3767559.99        0.00424
         463126.34    3767559.99        0.00556                      463230.18
   3767559.99        0.00671
         463334.02    3767559.99        0.00673                      463437.86
   3767559.99        0.00554
         463541.70    3767559.99        0.00375                      463645.54
   3767559.99        0.00239
         463749.38    3767559.99        0.00166                      463853.22
   3767559.99        0.00122
         463957.06    3767559.99        0.00093                      464060.90
   3767559.99        0.00072
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                               ***        16:22:19

                                          PAGE  17
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                    *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
  Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         464164.74    3767559.99        0.00057                      464268.58
   3767559.99        0.00047
         464372.42    3767559.99        0.00039                      464476.26
   3767559.99        0.00033
         462399.46    3767698.93        0.00107                      462503.30
   3767698.93        0.00128
         462607.14    3767698.93        0.00158                      462710.98
   3767698.93        0.00200
```

462814.82	3767698.93	0.00261	462918.66	3767698.93
0.00353				
463022.50	3767698.93	0.00503	463126.34	3767698.93
0.00767				
463230.18	3767698.93	0.01180	463334.02	3767698.93
0.01377				
463437.86	3767698.93	0.01219	463541.70	3767698.93
0.00789				
463645.54	3767698.93	0.00387	463749.38	3767698.93
0.00227				
463853.22	3767698.93	0.00149	463957.06	3767698.93
0.00106				
464060.90	3767698.93	0.00079	464164.74	3767698.93
0.00062				
464268.58	3767698.93	0.00050	464372.42	3767698.93
0.00041				
464476.26	3767698.93	0.00034	462399.46	3767837.87
0.00103				
462503.30	3767837.87	0.00123	462607.14	3767837.87
0.00151				
462710.98	3767837.87	0.00191	462814.82	3767837.87
0.00252				
462918.66	3767837.87	0.00352	463022.50	3767837.87
0.00530				
463126.34	3767837.87	0.00902	463230.18	3767837.87
0.02332				
463334.02	3767837.87	0.06529	463437.86	3767837.87
0.06522				
463541.70	3767837.87	0.05541	463645.54	3767837.87
0.00835				
463749.38	3767837.87	0.00326	463853.22	3767837.87
0.00190				
463957.06	3767837.87	0.00126	464060.90	3767837.87
0.00090				
464164.74	3767837.87	0.00069	464268.58	3767837.87
0.00055				
464372.42	3767837.87	0.00045	464476.26	3767837.87
0.00038				
462399.46	3767976.81	0.00097	462503.30	3767976.81
0.00116				
462607.14	3767976.81	0.00142	462710.98	3767976.81
0.00179				
462814.82	3767976.81	0.00235	462918.66	3767976.81
0.00324				
463022.50	3767976.81	0.00486	463126.34	3767976.81
0.00836				
463230.18	3767976.81	0.01766	463334.02	3767976.81
0.03321				
463437.86	3767976.81	0.03989	463541.70	3767976.81
0.03421				
463645.54	3767976.81	0.01848	463749.38	3767976.81
0.00661				
463853.22	3767976.81	0.00305	463957.06	3767976.81
0.00179				
464060.90	3767976.81	0.00120	464164.74	3767976.81
0.00087				
464268.58	3767976.81	0.00067	464372.42	3767976.81
0.00053				
464476.26	3767976.81	0.00044	462399.46	3768115.75
0.00091				
462503.30	3768115.75	0.00108	462607.14	3768115.75
0.00130				
462710.98	3768115.75	0.00159	462814.82	3768115.75
0.00202				
462918.66	3768115.75	0.00266	463022.50	3768115.75
0.00372				

```
        463126.34    3768115.75        0.00594                      463230.18
   3768115.75        0.01326
        463334.02    3768115.75        0.05712                      463437.86
   3768115.75        0.06630
        463541.70    3768115.75        0.06405                      463645.54
   3768115.75        0.02436
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  18
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
  Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        463749.38    3768115.75        0.00881                      463853.22
   3768115.75        0.00467
        463957.06    3768115.75        0.00272                      464060.90
   3768115.75        0.00175
        464164.74    3768115.75        0.00121                      464268.58
   3768115.75        0.00089
        464372.42    3768115.75        0.00068                      464476.26
   3768115.75        0.00054
        462399.46    3768254.69        0.00084                      462503.30
   3768254.69        0.00097
        462607.14    3768254.69        0.00114                      462710.98
   3768254.69        0.00135
        462814.82    3768254.69        0.00163                      462918.66
   3768254.69        0.00201
        463022.50    3768254.69        0.00254                      463126.34
   3768254.69        0.00329
        463230.18    3768254.69        0.00454                      463334.02
   3768254.69        0.00870
        463437.86    3768254.69        0.01457                      463541.70
   3768254.69        0.01734
        463645.54    3768254.69        0.01570                      463749.38
   3768254.69        0.01001
        463853.22    3768254.69        0.00596                      463957.06
   3768254.69        0.00372
        464060.90    3768254.69        0.00243                      464164.74
   3768254.69        0.00167
        464268.58    3768254.69        0.00120                      464372.42
   3768254.69        0.00090
        464476.26    3768254.69        0.00070                      462399.46
   3768393.63        0.00073
        462503.30    3768393.63        0.00083                      462607.14
```

```
   3768393.63        0.00094
         462710.98    3768393.63        0.00107                       462814.82
   3768393.63        0.00123
         462918.66    3768393.63        0.00141                       463022.50
   3768393.63        0.00164
         463126.34    3768393.63        0.00194                       463230.18
   3768393.63        0.00246
         463334.02    3768393.63        0.00385                       463437.86
   3768393.63        0.00626
         463541.70    3768393.63        0.00846                       463645.54
   3768393.63        0.00918
         463749.38    3768393.63        0.00795                       463853.22
   3768393.63        0.00596
         463957.06    3768393.63        0.00421                       464060.90
   3768393.63        0.00296
         464164.74    3768393.63        0.00211                       464268.58
   3768393.63        0.00154
         464372.42    3768393.63        0.00116                       464476.26
   3768393.63        0.00090
         462399.46    3768532.57        0.00062                       462503.30
   3768532.57        0.00068
         462607.14    3768532.57        0.00075                       462710.98
   3768532.57        0.00083
         462814.82    3768532.57        0.00092                       462918.66
   3768532.57        0.00102
         463022.50    3768532.57        0.00114                       463126.34
   3768532.57        0.00131
         463230.18    3768532.57        0.00161                       463334.02
   3768532.57        0.00231
         463437.86    3768532.57        0.00351                       463541.70
   3768532.57        0.00484
         463645.54    3768532.57        0.00569                       463749.38
   3768532.57        0.00568
         463853.22    3768532.57        0.00499                       463957.06
   3768532.57        0.00404
         464060.90    3768532.57        0.00313                       464164.74
   3768532.57        0.00238
         464268.58    3768532.57        0.00181                       464372.42
   3768532.57        0.00139
         464476.26    3768532.57        0.00108                       462399.46
   3768671.51        0.00051
         462503.30    3768671.51        0.00055                       462607.14
   3768671.51        0.00060
         462710.98    3768671.51        0.00065                       462814.82
   3768671.51        0.00071
         462918.66    3768671.51        0.00077                       463022.50
   3768671.51        0.00085
         463126.34    3768671.51        0.00096                       463230.18
   3768671.51        0.00116
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  19
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
```

L0000192 , L0000193 , L0000194 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
463334.02	3768671.51	0.00159	463437.86	3768671.51	0.00228
463541.70	3768671.51	0.00311	463645.54	3768671.51	0.00376
463749.38	3768671.51	0.00403	463853.22	3768671.51	0.00389
463957.06	3768671.51	0.00348	464060.90	3768671.51	0.00296
464164.74	3768671.51	0.00242	464268.58	3768671.51	0.00194
464372.42	3768671.51	0.00155	464476.26	3768671.51	0.00123
462399.46	3768810.45	0.00043	462503.30	3768810.45	0.00046
462607.14	3768810.45	0.00049	462710.98	3768810.45	0.00053
462814.82	3768810.45	0.00057	462918.66	3768810.45	0.00061
463022.50	3768810.45	0.00067	463126.34	3768810.45	0.00075
463230.18	3768810.45	0.00090	463334.02	3768810.45	0.00118
463437.86	3768810.45	0.00162	463541.70	3768810.45	0.00216
463645.54	3768810.45	0.00264	463749.38	3768810.45	0.00293
463853.22	3768810.45	0.00298	463957.06	3768810.45	0.00285
464060.90	3768810.45	0.00260	464164.74	3768810.45	0.00228
464268.58	3768810.45	0.00194	464372.42	3768810.45	0.00161
464476.26	3768810.45	0.00133	462399.46	3768949.39	0.00037
462503.30	3768949.39	0.00039	462607.14	3768949.39	0.00041
462710.98	3768949.39	0.00044	462814.82	3768949.39	0.00046
462918.66	3768949.39	0.00050	463022.50	3768949.39	0.00054
463126.34	3768949.39	0.00061	463230.18	3768949.39	0.00072
463334.02	3768949.39	0.00093	463437.86	3768949.39	0.00123
463541.70	3768949.39	0.00160	463645.54	3768949.39	0.00195
463749.38	3768949.39	0.00220	463853.22	3768949.39	0.00231
463957.06	3768949.39	0.00230	464060.90	3768949.39	0.00220
464164.74	3768949.39	0.00203	464268.58	3768949.39	0.00182
464372.42	3768949.39	0.00159	464476.26	3768949.39	0.00136

```
        462399.46    3769088.33        0.00032                       462503.30
   3769088.33        0.00033
        462607.14    3769088.33        0.00035                       462710.98
   3769088.33        0.00037
        462814.82    3769088.33        0.00039                       462918.66
   3769088.33        0.00042
        463022.50    3769088.33        0.00045                       463126.34
   3769088.33        0.00051
        463230.18    3769088.33        0.00060                       463334.02
   3769088.33        0.00075
        463437.86    3769088.33        0.00097                       463541.70
   3769088.33        0.00123
        463645.54    3769088.33        0.00150                       463749.38
   3769088.33        0.00170
        463853.22    3769088.33        0.00182                       463957.06
   3769088.33        0.00186
        464060.90    3769088.33        0.00183                       464164.74
   3769088.33        0.00175
        464268.58    3769088.33        0.00164                       464372.42
   3769088.33        0.00149
        464476.26    3769088.33        0.00133                       462399.46
   3769227.27        0.00028
        462503.30    3769227.27        0.00029                       462607.14
   3769227.27        0.00030
        462710.98    3769227.27        0.00032                       462814.82
   3769227.27        0.00033
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  20
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
  Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462918.66    3769227.27        0.00036                       463022.50
   3769227.27        0.00039
        463126.34    3769227.27        0.00043                       463230.18
   3769227.27        0.00051
        463334.02    3769227.27        0.00063                       463437.86
   3769227.27        0.00079
        463541.70    3769227.27        0.00099                       463645.54
   3769227.27        0.00119
        463749.38    3769227.27        0.00135                       463853.22
   3769227.27        0.00147
        463957.06    3769227.27        0.00153                       464060.90
```

```
3769227.27        0.00153
      464164.74    3769227.27        0.00150                        464268.58
3769227.27        0.00144
      464372.42    3769227.27        0.00135                        464476.26
3769227.27        0.00125
      462399.46    3769366.21        0.00024                        462503.30
3769366.21        0.00025
      462607.14    3769366.21        0.00026                        462710.98
3769366.21        0.00028
      462814.82    3769366.21        0.00029                        462918.66
3769366.21        0.00031
      463022.50    3769366.21        0.00034                        463126.34
3769366.21        0.00037
      463230.18    3769366.21        0.00044                        463334.02
3769366.21        0.00053
      463437.86    3769366.21        0.00066                        463541.70
3769366.21        0.00081
      463645.54    3769366.21        0.00097                        463749.38
3769366.21        0.00110
      463853.22    3769366.21        0.00120                        463957.06
3769366.21        0.00127
      464060.90    3769366.21        0.00129                        464164.74
3769366.21        0.00128
      464268.58    3769366.21        0.00125                        464372.42
3769366.21        0.00121
      464476.26    3769366.21        0.00114                        462399.46
3769505.15        0.00021
      462503.30    3769505.15        0.00022                        462607.14
3769505.15        0.00023
      462710.98    3769505.15        0.00025                        462814.82
3769505.15        0.00026
      462918.66    3769505.15        0.00027                        463022.50
3769505.15        0.00030
      463126.34    3769505.15        0.00033                        463230.18
3769505.15        0.00038
      463334.02    3769505.15        0.00046                        463437.86
3769505.15        0.00056
      463541.70    3769505.15        0.00068                        463645.54
3769505.15        0.00080
      463749.38    3769505.15        0.00091                        463853.22
3769505.15        0.00100
      463957.06    3769505.15        0.00106                        464060.90
3769505.15        0.00110
      464164.74    3769505.15        0.00110                        464268.58
3769505.15        0.00109
      464372.42    3769505.15        0.00107                        464476.26
3769505.15        0.00103
      462399.46    3769644.09        0.00019                        462503.30
3769644.09        0.00020
      462607.14    3769644.09        0.00021                        462710.98
3769644.09        0.00022
      462814.82    3769644.09        0.00023                        462918.66
3769644.09        0.00024
      463022.50    3769644.09        0.00026                        463126.34
3769644.09        0.00029
      463230.18    3769644.09        0.00034                        463334.02
3769644.09        0.00040
      463437.86    3769644.09        0.00048                        463541.70
3769644.09        0.00058
      463645.54    3769644.09        0.00068                        463749.38
3769644.09        0.00077
      463853.22    3769644.09        0.00084                        463957.06
3769644.09        0.00090
      464060.90    3769644.09        0.00094                        464164.74
3769644.09        0.00096
      464268.58    3769644.09        0.00095                        464372.42
```

```
   3769644.09        0.00094
         464476.26    3769644.09        0.00092                      462399.46
   3769783.03        0.00017
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  21
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED
OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                 L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                 L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                 L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
  Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         462503.30    3769783.03        0.00018                      462607.14
   3769783.03        0.00019
         462710.98    3769783.03        0.00020                      462814.82
   3769783.03        0.00021
         462918.66    3769783.03        0.00022                      463022.50
   3769783.03        0.00024
         463126.34    3769783.03        0.00026                      463230.18
   3769783.03        0.00030
         463334.02    3769783.03        0.00036                      463437.86
   3769783.03        0.00042
         463541.70    3769783.03        0.00050                      463645.54
   3769783.03        0.00058
         463749.38    3769783.03        0.00065                      463853.22
   3769783.03        0.00071
         463957.06    3769783.03        0.00077                      464060.90
   3769783.03        0.00081
         464164.74    3769783.03        0.00083                      464268.58
   3769783.03        0.00084
         464372.42    3769783.03        0.00083                      464476.26
   3769783.03        0.00082
         462399.46    3769921.97        0.00016                      462503.30
   3769921.97        0.00017
         462607.14    3769921.97        0.00017                      462710.98
   3769921.97        0.00018
         462814.82    3769921.97        0.00019                      462918.66
   3769921.97        0.00020
         463022.50    3769921.97        0.00021                      463126.34
   3769921.97        0.00024
         463230.18    3769921.97        0.00027                      463334.02
   3769921.97        0.00032
         463437.86    3769921.97        0.00037                      463541.70
   3769921.97        0.00043
         463645.54    3769921.97        0.00049                      463749.38
   3769921.97        0.00056
```

```
        463853.22    3769921.97        0.00061                      463957.06
   3769921.97        0.00066
        464060.90    3769921.97        0.00071                      464164.74
   3769921.97        0.00073
        464268.58    3769921.97        0.00074                      464372.42
   3769921.97        0.00074
        464476.26    3769921.97        0.00073                      463236.00
   3768116.00        0.01411
        463239.00    3767823.00        0.02516                      463326.00
   3767821.00        0.04511
        463328.00    3767727.00        0.01664                      463619.00
   3767725.00        0.00524
        463618.00    3768116.00        0.04048

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  22
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462399.46   3767143.17        0.03237  (07090101)
462503.30   3767143.17        0.03461  (10092803)
        462607.14   3767143.17        0.03736  (07090105)
462710.98   3767143.17        0.04007  (08062101)
        462814.82   3767143.17        0.04278  (09092624)
462918.66   3767143.17        0.04565  (07090102)
        463022.50   3767143.17        0.04778  (10092421)
463126.34   3767143.17        0.04966  (08062024)
        463230.18   3767143.17        0.05061  (08062202)
463334.02   3767143.17        0.05129  (08093022)
        463437.86   3767143.17        0.05128  (07111422)
463541.70   3767143.17        0.05125  (07090302)
        463645.54   3767143.17        0.05068  (07102301)
463749.38   3767143.17        0.04944  (08042703)
        463853.22   3767143.17        0.04783  (07090303)
463957.06   3767143.17        0.04502  (11092701)
        464060.90   3767143.17        0.04254  (08090706)
464164.74   3767143.17        0.03992  (07111319)
        464268.58   3767143.17        0.03674  (07111302)
464372.42   3767143.17        0.03463  (07102303)
        464476.26   3767143.17        0.03195  (10103119)
462399.46   3767282.11        0.03393  (10092424)
        462503.30   3767282.11        0.03705  (07090103)
```

```
462607.14   3767282.11        0.04029  (07090101)
        462710.98   3767282.11        0.04381  (09090324)
462814.82   3767282.11        0.04779  (07090402)
        462918.66   3767282.11        0.05152  (09092624)
463022.50   3767282.11        0.05492  (08042722)
        463126.34   3767282.11        0.05790  (11090520)
463230.18   3767282.11        0.05939  (09092301)
        463334.02   3767282.11        0.05991  (10090422)
463437.86   3767282.11        0.05993  (07111422)
        463541.70   3767282.11        0.06005  (09101606)
463645.54   3767282.11        0.05910  (08062105)
        463749.38   3767282.11        0.05771  (07102321)
463853.22   3767282.11        0.05481  (07102222)
        463957.06   3767282.11        0.05130  (11082701)
464060.90   3767282.11        0.04737  (11082606)
        464164.74   3767282.11        0.04386  (07090124)
464268.58   3767282.11        0.04015  (07090122)
        464372.42   3767282.11        0.03679  (07090224)
464476.26   3767282.11        0.03401  (08042702)
        462399.46   3767421.05        0.03537  (09090106)
462503.30   3767421.05        0.03860  (10082401)
        462607.14   3767421.05        0.04241  (09090101)
462710.98   3767421.05        0.04720  (07090103)
        462814.82   3767421.05        0.05243  (10092803)
462918.66   3767421.05        0.05853  (08041222)
        463022.50   3767421.05        0.06434  (09092624)
463126.34   3767421.05        0.06900  (11090701)
        463230.18   3767421.05        0.07138  (08062024)
463334.02   3767421.05        0.07191  (10090422)
        463437.86   3767421.05        0.07178  (07102320)
463541.70   3767421.05        0.07172  (08041223)
        463645.54   3767421.05        0.07103  (08042703)
463749.38   3767421.05        0.06861  (07102222)
        463853.22   3767421.05        0.06422  (11082701)
463957.06   3767421.05        0.05814  (11082606)
        464060.90   3767421.05        0.05247  (07090122)
464164.74   3767421.05        0.04680  (07090224)
        464268.58   3767421.05        0.04239  (08042702)
464372.42   3767421.05        0.03844  (11093022)
        464476.26   3767421.05        0.03514  (09090501)
462399.46   3767559.99        0.03610  (08041124)
        462503.30   3767559.99        0.03971  (07090304)
462607.14   3767559.99        0.04369  (09091101)
        462710.98   3767559.99        0.04914  (09090106)
462814.82   3767559.99        0.05620  (09082824)
        462918.66   3767559.99        0.06501  (10092723)
463022.50   3767559.99        0.07569  (07090105)
        463126.34   3767559.99        0.08588  (11090622)
463230.18   3767559.99        0.09053  (11090520)
        463334.02   3767559.99        0.09053  (09083121)
463437.86   3767559.99        0.09002  (07102320)
        463541.70   3767559.99        0.09044  (08093023)
463645.54   3767559.99        0.09049  (07090303)
        463749.38   3767559.99        0.08563  (11082701)
463853.22   3767559.99        0.07526  (07090124)
        463957.06   3767559.99        0.06442  (09042023)
464060.90   3767559.99        0.05551  (10092806)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                                ***        16:22:19

                                           PAGE  23
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                *** THE   1ST HIGHEST  1-HR AVERAGE
```

```
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                                 *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                              ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                                 **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        464164.74   3767559.99        0.04878  (11090422)
464268.58   3767559.99        0.04357  (11070605)
        464372.42   3767559.99        0.03927  (07081304)
464476.26   3767559.99        0.03592  (07071403)
        462399.46   3767698.93        0.03631  (10092623)
462503.30   3767698.93        0.03980  (10092623)
        462607.14   3767698.93        0.04438  (11082502)
462710.98   3767698.93        0.05107  (09090103)
        462814.82   3767698.93        0.05990  (10090224)
462918.66   3767698.93        0.07202  (08041124)
        463022.50   3767698.93        0.08777  (10071602)
463126.34   3767698.93        0.10949  (09083022)
        463230.18   3767698.93        0.12971  (08102124)
463334.02   3767698.93        0.12820  (09092301)
        463437.86   3767698.93        0.12648  (07090302)
463541.70   3767698.93        0.12812  (07102321)
        463645.54   3767698.93        0.12970  (08062022)
463749.38   3767698.93        0.10900  (07090122)
        463853.22   3767698.93        0.08687  (11090422)
463957.06   3767698.93        0.07150  (08032303)
        464060.90   3767698.93        0.05943  (09090123)
464164.74   3767698.93        0.05062  (09090205)
        464268.58   3767698.93        0.04405  (07081703)
464372.42   3767698.93        0.03951  (07081703)
        464476.26   3767698.93        0.03607  (07081703)
462399.46   3767837.87        0.03594  (10082603)
        462503.30   3767837.87        0.03961  (10082603)
462607.14   3767837.87        0.04468  (10082603)
        462710.98   3767837.87        0.05219  (10082603)
462814.82   3767837.87        0.06391  (10082603)
        462918.66   3767837.87        0.08292  (10082603)
463022.50   3767837.87        0.11537  (10082603)
        463126.34   3767837.87        0.18145  (10082503)
463230.18   3767837.87        0.33956  (10092623)
        463334.02   3767837.87        0.34984  (09082923)
463437.86   3767837.87        0.33038  (07102321)
        463541.70   3767837.87        0.34902  (09090123)
463645.54   3767837.87        0.33189  (07081703)
        463749.38   3767837.87        0.17895  (11090722)
463853.22   3767837.87        0.11259  (09093003)
        463957.06   3767837.87        0.08118  (07062602)
464060.90   3767837.87        0.06317  (07062602)
        464164.74   3767837.87        0.05173  (07062602)
464268.58   3767837.87        0.04414  (07062602)
        464372.42   3767837.87        0.03903  (09093003)
464476.26   3767837.87        0.03596  (11090722)
```

```
        462399.46   3767976.81        0.03564  (10081722)
462503.30   3767976.81        0.03881  (10082603)
        462607.14   3767976.81        0.04347  (09090306)
462710.98   3767976.81        0.05051  (10082503)
        462814.82   3767976.81        0.06119  (09090424)
462918.66   3767976.81        0.07716  (07102324)
        463022.50   3767976.81        0.10062  (09090103)
463126.34   3767976.81        0.12991  (08041124)
        463230.18   3767976.81        0.13891  (09090106)
463334.02   3767976.81        0.13187  (07090103)
        463437.86   3767976.81        0.12316  (08062124)
463541.70   3767976.81        0.13244  (07090224)
        463645.54   3767976.81        0.13882  (09090501)
463749.38   3767976.81        0.12873  (08032303)
        463853.22   3767976.81        0.09919  (09090205)
463957.06   3767976.81        0.07557  (07111206)
        464060.90   3767976.81        0.06037  (07102724)
464164.74   3767976.81        0.05026  (07083004)
        464268.58   3767976.81        0.04355  (11090722)
464372.42   3767976.81        0.03854  (08061923)
        464476.26   3767976.81        0.03545  (08042701)
462399.46   3768115.75        0.03587  (10082706)
        462503.30   3768115.75        0.03956  (08042623)
462607.14   3768115.75        0.04483  (08042623)
        462710.98   3768115.75        0.05251  (08042623)
462814.82   3768115.75        0.06413  (08042623)
        462918.66   3768115.75        0.08224  (08070402)
463022.50   3768115.75        0.11397  (10082706)
        463126.34   3768115.75        0.17576  (08051823)
463230.18   3768115.75        0.28298  (09090323)
        463334.02   3768115.75        0.29113  (08100721)
463437.86   3768115.75        0.28028  (10082523)
        463541.70   3768115.75        0.29223  (07090301)
463645.54   3768115.75        0.28049  (07090401)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  24
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
        463749.38   3768115.75        0.17086  (11090406)
463853.22   3768115.75        0.11170  (08061923)
        463957.06   3768115.75        0.08175  (08061923)
```

464060.90 3768115.75 0.06330 (08061923)
464164.74 3768115.75 0.05176 (08071205)
464268.58 3768115.75 0.04437 (08061923)
464372.42 3768115.75 0.03941 (08061923)
464476.26 3768115.75 0.03591 (08061923)
462399.46 3768254.69 0.03638 (10082322)
462503.30 3768254.69 0.03991 (10082322)
462607.14 3768254.69 0.04459 (10082424)
462710.98 3768254.69 0.05084 (09072003)
462814.82 3768254.69 0.05977 (09090323)
462918.66 3768254.69 0.07115 (08032222)
463022.50 3768254.69 0.08593 (07082824)
463126.34 3768254.69 0.10757 (07083104)
463230.18 3768254.69 0.12479 (10082502)
463334.02 3768254.69 0.12396 (07090222)
463437.86 3768254.69 0.12277 (07090221)
463541.70 3768254.69 0.12371 (09090223)
463645.54 3768254.69 0.12436 (11070702)
463749.38 3768254.69 0.10709 (08062122)
463853.22 3768254.69 0.08517 (11071924)
463957.06 3768254.69 0.07060 (07081604)
464060.90 3768254.69 0.05952 (07090401)
464164.74 3768254.69 0.05038 (08070303)
464268.58 3768254.69 0.04418 (09091024)
464372.42 3768254.69 0.03966 (11082802)
464476.26 3768254.69 0.03616 (11082802)
462399.46 3768393.63 0.03608 (08082501)
462503.30 3768393.63 0.03954 (07090201)
462607.14 3768393.63 0.04384 (11082801)
462710.98 3768393.63 0.04904 (07082824)
462814.82 3768393.63 0.05570 (08061824)
462918.66 3768393.63 0.06437 (10081904)
463022.50 3768393.63 0.07489 (10081724)
463126.34 3768393.63 0.08380 (09091103)
463230.18 3768393.63 0.08905 (07090321)
463334.02 3768393.63 0.08886 (07083123)
463437.86 3768393.63 0.08835 (07090324)
463541.70 3768393.63 0.08888 (07090123)
463645.54 3768393.63 0.08860 (10071701)
463749.38 3768393.63 0.08387 (11070702)
463853.22 3768393.63 0.07427 (10080224)
463957.06 3768393.63 0.06404 (07031022)
464060.90 3768393.63 0.05561 (07102302)
464164.74 3768393.63 0.04873 (08071703)
464268.58 3768393.63 0.04370 (09090122)
464372.42 3768393.63 0.03941 (11082903)
464476.26 3768393.63 0.03580 (07081604)
462399.46 3768532.57 0.03530 (07082824)
462503.30 3768532.57 0.03853 (11082705)
462607.14 3768532.57 0.04237 (07031105)
462710.98 3768532.57 0.04677 (08062302)
462814.82 3768532.57 0.05212 (07083104)
462918.66 3768532.57 0.05809 (10092621)
463022.50 3768532.57 0.06352 (08100721)
463126.34 3768532.57 0.06788 (11070504)
463230.18 3768532.57 0.07018 (11082702)
463334.02 3768532.57 0.07082 (07083005)
463437.86 3768532.57 0.07086 (07083024)
463541.70 3768532.57 0.07099 (07090123)
463645.54 3768532.57 0.07000 (09090223)
463749.38 3768532.57 0.06785 (11081724)
463853.22 3768532.57 0.06343 (11082603)
463957.06 3768532.57 0.05804 (08062123)
464060.90 3768532.57 0.05222 (08062122)
464164.74 3768532.57 0.04667 (07031022)
464268.58 3768532.57 0.04218 (08090323)

```
464372.42   3768532.57        0.03854  (11082723)
        464476.26   3768532.57        0.03508  (08071703)
462399.46   3768671.51        0.03396  (10071604)
        462503.30   3768671.51        0.03663  (08062302)
462607.14   3768671.51        0.03998  (11082604)
        462710.98   3768671.51        0.04370  (07083124)
462814.82   3768671.51        0.04754  (10092621)
        462918.66   3768671.51        0.05103  (08100721)
463022.50   3768671.51        0.05450  (10092823)
        463126.34   3768671.51        0.05747  (07090321)
463230.18   3768671.51        0.05866  (07102419)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  25
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        463334.02   3768671.51        0.05919  (10071703)
463437.86   3768671.51        0.05938  (07083024)
        463541.70   3768671.51        0.05939  (07090322)
463645.54   3768671.51        0.05851  (07090305)
        463749.38   3768671.51        0.05710  (10071701)
463853.22   3768671.51        0.05445  (07083002)
        463957.06   3768671.51        0.05098  (11082603)
464060.90   3768671.51        0.04704  (08061523)
        464164.74   3768671.51        0.04331  (11082424)
464268.58   3768671.51        0.03982  (08062103)
        464372.42   3768671.51        0.03663  (07081323)
464476.26   3768671.51        0.03375  (08090323)
        462399.46   3768810.45        0.03220  (10071503)
462503.30   3768810.45        0.03457  (07083104)
        462607.14   3768810.45        0.03717  (10081724)
462710.98   3768810.45        0.03976  (10071504)
        462814.82   3768810.45        0.04244  (08100721)
462918.66   3768810.45        0.04503  (10082502)
        463022.50   3768810.45        0.04707  (11080123)
463126.34   3768810.45        0.04909  (11082702)
        463230.18   3768810.45        0.05036  (07083123)
463334.02   3768810.45        0.05053  (07090221)
        463437.86   3768810.45        0.05088  (07083024)
463541.70   3768810.45        0.05111  (07090322)
        463645.54   3768810.45        0.05006  (11070502)
463749.38   3768810.45        0.04886  (11082602)
```

```
        463853.22   3768810.45        0.04716  (09090322)
463957.06   3768810.45        0.04493  (07082023)
        464060.90   3768810.45        0.04241  (11082603)
464164.74   3768810.45        0.03973  (11082901)
        464268.58   3768810.45        0.03692  (10080224)
464372.42   3768810.45        0.03450  (08062122)
        464476.26   3768810.45        0.03210  (08051722)
462399.46   3768949.39        0.03026  (10071702)
        462503.30   3768949.39        0.03198  (10081924)
462607.14   3768949.39        0.03400  (10071504)
        462710.98   3768949.39        0.03614  (08100721)
462814.82   3768949.39        0.03814  (10082502)
        462918.66   3768949.39        0.03993  (11070504)
463022.50   3768949.39        0.04194  (07090321)
        463126.34   3768949.39        0.04299  (10082523)
463230.18   3768949.39        0.04367  (10071704)
        463334.02   3768949.39        0.04436  (07090221)
463437.86   3768949.39        0.04425  (07083024)
        463541.70   3768949.39        0.04429  (07090322)
463645.54   3768949.39        0.04371  (10092922)
        463749.38   3768949.39        0.04285  (09090223)
463853.22   3768949.39        0.04146  (11090424)
        463957.06   3768949.39        0.03994  (11081724)
464060.90   3768949.39        0.03798  (07082023)
        464164.74   3768949.39        0.03612  (11082603)
464268.58   3768949.39        0.03414  (11082523)
        464372.42   3768949.39        0.03196  (08062123)
464476.26   3768949.39        0.03016  (10081902)
        462399.46   3769088.33        0.02823  (10081924)
462503.30   3769088.33        0.02950  (11093004)
        462607.14   3769088.33        0.03131  (08100721)
462710.98   3769088.33        0.03271  (09091003)
        462814.82   3769088.33        0.03433  (10071401)
462918.66   3769088.33        0.03582  (11080123)
        463022.50   3769088.33        0.03700  (11082702)
463126.34   3769088.33        0.03786  (07102419)
        463230.18   3769088.33        0.03857  (07083005)
463334.02   3769088.33        0.03925  (07090221)
        463437.86   3769088.33        0.03897  (08082523)
463541.70   3769088.33        0.03893  (11070701)
        463645.54   3769088.33        0.03870  (07090123)
463749.38   3769088.33        0.03776  (09080322)
        463853.22   3769088.33        0.03683  (11082602)
463957.06   3769088.33        0.03571  (11082804)
        464060.90   3769088.33        0.03432  (07072723)
464164.74   3769088.33        0.03277  (11082906)
        464268.58   3769088.33        0.03130  (11082603)
464372.42   3769088.33        0.02984  (11082523)
        464476.26   3769088.33        0.02827  (08062123)
462399.46   3769227.27        0.02607  (08071706)
        462503.30   3769227.27        0.02750  (08100721)
462607.14   3769227.27        0.02854  (07021706)
        462710.98   3769227.27        0.03003  (10092823)
462814.82   3769227.27        0.03091  (11092003)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  26
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
```

```
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                              ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462918.66   3769227.27        0.03241  (07090222)
463022.50   3769227.27        0.03287  (08081004)
        463126.34   3769227.27        0.03380  (07083123)
463230.18   3769227.27        0.03421  (07083005)
        463334.02   3769227.27        0.03489  (07090221)
463437.86   3769227.27        0.03467  (08082523)
        463541.70   3769227.27        0.03465  (11070701)
463645.54   3769227.27        0.03429  (08062201)
        463749.38   3769227.27        0.03377  (11070502)
463853.22   3769227.27        0.03312  (09090223)
        463957.06   3769227.27        0.03202  (09071902)
464060.90   3769227.27        0.03109  (09090322)
        464164.74   3769227.27        0.03005  (07083002)
464268.58   3769227.27        0.02861  (11062623)
        464372.42   3769227.27        0.02750  (11082603)
464476.26   3769227.27        0.02631  (11082523)
        462399.46   3769366.21        0.02442  (08100721)
462503.30   3769366.21        0.02535  (07021706)
        462607.14   3769366.21        0.02639  (10090123)
462710.98   3769366.21        0.02731  (11070504)
        462814.82   3769366.21        0.02828  (07090321)
462918.66   3769366.21        0.02918  (11082702)
        463022.50   3769366.21        0.02992  (10082523)
463126.34   3769366.21        0.03050  (07083123)
        463230.18   3769366.21        0.03080  (10071703)
463334.02   3769366.21        0.03111  (07090221)
        463437.86   3769366.21        0.03109  (08082523)
463541.70   3769366.21        0.03110  (07083101)
        463645.54   3769366.21        0.03083  (10081723)
463749.38   3769366.21        0.03034  (07081923)
        463853.22   3769366.21        0.02988  (07090305)
463957.06   3769366.21        0.02907  (11082602)
        464060.90   3769366.21        0.02842  (10071701)
464164.74   3769366.21        0.02739  (09090322)
        464268.58   3769366.21        0.02639  (11071901)
464372.42   3769366.21        0.02538  (11062623)
        464476.26   3769366.21        0.02443  (11082603)
462399.46   3769505.15        0.02268  (07021706)
        462503.30   3769505.15        0.02354  (07081904)
462607.14   3769505.15        0.02434  (11070504)
        462710.98   3769505.15        0.02522  (11080123)
462814.82   3769505.15        0.02612  (07090222)
        462918.66   3769505.15        0.02650  (08051724)
463022.50   3769505.15        0.02704  (08070501)
        463126.34   3769505.15        0.02745  (09080323)
463230.18   3769505.15        0.02784  (10071703)
        463334.02   3769505.15        0.02806  (10071323)
463437.86   3769505.15        0.02808  (08082523)
        463541.70   3769505.15        0.02813  (07083101)
```

```
463645.54   3769505.15        0.02795  (10081723)
        463749.38   3769505.15        0.02764  (07090123)
463853.22   3769505.15        0.02708  (09080322)
        463957.06   3769505.15        0.02647  (08090624)
464060.90   3769505.15        0.02585  (09071902)
        464164.74   3769505.15        0.02512  (11082804)
464268.58   3769505.15        0.02432  (11081724)
        464372.42   3769505.15        0.02348  (11071901)
464476.26   3769505.15        0.02268  (11062623)
        462399.46   3769644.09        0.02123  (10082502)
462503.30   3769644.09        0.02188  (10071401)
        462607.14   3769644.09        0.02239  (11092003)
462710.98   3769644.09        0.02337  (07090321)
        462814.82   3769644.09        0.02381  (11082702)
462918.66   3769644.09        0.02443  (10082523)
        463022.50   3769644.09        0.02468  (11082402)
463126.34   3769644.09        0.02508  (07083005)
        463230.18   3769644.09        0.02519  (09071505)
463334.02   3769644.09        0.02545  (10081801)
        463437.86   3769644.09        0.02553  (08082523)
463541.70   3769644.09        0.02553  (07083101)
        463645.54   3769644.09        0.02557  (07090322)
463749.38   3769644.09        0.02521  (07090123)
        463853.22   3769644.09        0.02472  (11070502)
463957.06   3769644.09        0.02434  (07090305)
        464060.90   3769644.09        0.02371  (11082602)
464164.74   3769644.09        0.02320  (10071701)
        464268.58   3769644.09        0.02254  (09090322)
464372.42   3769644.09        0.02187  (07072723)
        464476.26   3769644.09        0.02120  (07082023)
462399.46   3769783.03        0.01981  (10092823)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  27
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                            **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462503.30   3769783.03        0.02031  (08083006)
462607.14   3769783.03        0.02093  (11080123)
        462710.98   3769783.03        0.02163  (07090222)
462814.82   3769783.03        0.02193  (08051724)
        462918.66   3769783.03        0.02243  (07102419)
463022.50   3769783.03        0.02284  (07083123)
```

```
        463126.34   3769783.03        0.02301  (07083005)
463230.18   3769783.03        0.02296  (07061401)
        463334.02   3769783.03        0.02333  (10081801)
463437.86   3769783.03        0.02333  (08082523)
        463541.70   3769783.03        0.02333  (10071502)
463645.54   3769783.03        0.02333  (07090322)
        463749.38   3769783.03        0.02303  (08062201)
463853.22   3769783.03        0.02268  (07081923)
        463957.06   3769783.03        0.02232  (11082401)
464060.90   3769783.03        0.02188  (08090624)
        464164.74   3769783.03        0.02141  (09071902)
464268.58   3769783.03        0.02089  (11082804)
        464372.42   3769783.03        0.02040  (09090322)
464476.26   3769783.03        0.01984  (07083002)
        462399.46   3769921.97        0.01850  (11070504)
462503.30   3769921.97        0.01896  (11080123)
        462607.14   3769921.97        0.01966  (07090321)
462710.98   3769921.97        0.01990  (11082702)
        462814.82   3769921.97        0.02026  (10082523)
462918.66   3769921.97        0.02058  (08070501)
        463022.50   3769921.97        0.02094  (10071704)
463126.34   3769921.97        0.02102  (07072003)
        463230.18   3769921.97        0.02118  (07061401)
463334.02   3769921.97        0.02145  (10081801)
        463437.86   3769921.97        0.02144  (08082523)
463541.70   3769921.97        0.02147  (10071502)
        463645.54   3769921.97        0.02136  (11090724)
463749.38   3769921.97        0.02109  (07082001)
        463853.22   3769921.97        0.02095  (10092922)
463957.06   3769921.97        0.02063  (09080322)
        464060.90   3769921.97        0.02032  (09090223)
464164.74   3769921.97        0.01982  (11082602)
        464268.58   3769921.97        0.01943  (11090424)
464372.42   3769921.97        0.01893  (07072701)
        464476.26   3769921.97        0.01852  (11081724)
463236.00   3768116.00        0.28468  (09090323)
        463239.00   3767823.00        0.26590  (09082923)
463326.00   3767821.00        0.26969  (11090622)
        463328.00   3767727.00        0.14243  (11090520)
463619.00   3767725.00        0.14370  (08062022)
        463618.00   3768116.00        0.29191  (08062122)

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  28
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                         *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **
```

```
      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462399.46   3767143.17        0.00680m (08020624)
462503.30   3767143.17        0.00804m (08020624)
        462607.14   3767143.17        0.00909  (11112724)
462710.98   3767143.17        0.01051  (11112724)
        462814.82   3767143.17        0.01101  (11112724)
462918.66   3767143.17        0.01371  (11122624)
        463022.50   3767143.17        0.01489  (11122624)
463126.34   3767143.17        0.01306  (07020324)
        463230.18   3767143.17        0.01627  (08102724)
463334.02   3767143.17        0.01710  (08102724)
        463437.86   3767143.17        0.01577  (08121924)
463541.70   3767143.17        0.01051  (09110324)
        463645.54   3767143.17        0.00858  (09110124)
463749.38   3767143.17        0.00764  (09022224)
        463853.22   3767143.17        0.00688  (08041424)
463957.06   3767143.17        0.00675  (09102824)
        464060.90   3767143.17        0.00631  (09102824)
464164.74   3767143.17        0.00530  (09102824)
        464268.58   3767143.17        0.00472  (08050324)
464372.42   3767143.17        0.00417  (08050324)
        464476.26   3767143.17        0.00428  (08011124)
462399.46   3767282.11        0.00746  (11121924)
        462503.30   3767282.11        0.00793  (07122924)
462607.14   3767282.11        0.00934m (08020624)
        462710.98   3767282.11        0.01073  (11112724)
462814.82   3767282.11        0.01327  (11112724)
        462918.66   3767282.11        0.01445  (11112724)
463022.50   3767282.11        0.01816  (11122624)
        463126.34   3767282.11        0.01863  (11122624)
463230.18   3767282.11        0.01859  (08102724)
        463334.02   3767282.11        0.02191  (08121924)
463437.86   3767282.11        0.02009  (08121924)
        463541.70   3767282.11        0.01317  (09110324)
463645.54   3767282.11        0.01065  (09022224)
        463749.38   3767282.11        0.00902  (09022224)
463853.22   3767282.11        0.00889  (09102824)
        463957.06   3767282.11        0.00823  (09102824)
464060.90   3767282.11        0.00664  (09102824)
        464164.74   3767282.11        0.00573  (08050324)
464268.58   3767282.11        0.00539  (08011124)
        464372.42   3767282.11        0.00513  (08011124)
464476.26   3767282.11        0.00437  (08011124)
        462399.46   3767421.05        0.00802  (10121324)
462503.30   3767421.05        0.00878  (10121324)
        462607.14   3767421.05        0.01005  (11121924)
462710.98   3767421.05        0.01147  (07122924)
        462814.82   3767421.05        0.01374  (07122924)
462918.66   3767421.05        0.01717  (11112724)
        463022.50   3767421.05        0.01985  (11112724)
463126.34   3767421.05        0.02499  (11122624)
        463230.18   3767421.05        0.02374  (11122624)
463334.02   3767421.05        0.02984  (08121924)
        463437.86   3767421.05        0.02671  (08121924)
463541.70   3767421.05        0.01725  (09110324)
        463645.54   3767421.05        0.01393  (09022224)
463749.38   3767421.05        0.01241  (09102824)
        463853.22   3767421.05        0.01132  (09102824)
463957.06   3767421.05        0.00859  (09102824)
        464060.90   3767421.05        0.00719  (08011124)
464164.74   3767421.05        0.00677  (08011124)
        464268.58   3767421.05        0.00564  (08011124)
```

```
464372.42   3767421.05        0.00499  (08013024)
        464476.26   3767421.05        0.00442  (08013024)
462399.46   3767559.99        0.00728  (10121324)
        462503.30   3767559.99        0.00891  (10121324)
462607.14   3767559.99        0.01074  (10121324)
        462710.98   3767559.99        0.01279  (10121324)
462814.82   3767559.99        0.01471  (10121324)
        462918.66   3767559.99        0.01845  (07122924)
463022.50   3767559.99        0.02314  (11112724)
        463126.34   3767559.99        0.02963  (11122624)
463230.18   3767559.99        0.03626  (11122624)
        463334.02   3767559.99        0.04269  (08121924)
463437.86   3767559.99        0.03868  (08121924)
        463541.70   3767559.99        0.02430  (09110324)
463645.54   3767559.99        0.01906  (09022224)
        463749.38   3767559.99        0.01696  (09102824)
463853.22   3767559.99        0.01165  (09102824)
        463957.06   3767559.99        0.00982  (08011124)
464060.90   3767559.99        0.00835  (08013024)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  29
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        464164.74   3767559.99        0.00715  (08013024)
464268.58   3767559.99        0.00633m (07112324)
        464372.42   3767559.99        0.00554m (07112324)
464476.26   3767559.99        0.00485m (07112324)
        462399.46   3767698.93        0.00722  (11013024)
462503.30   3767698.93        0.00799  (11013024)
        462607.14   3767698.93        0.00904  (11013024)
462710.98   3767698.93        0.01094  (10121324)
        462814.82   3767698.93        0.01423  (10121324)
462918.66   3767698.93        0.01942  (10121324)
        463022.50   3767698.93        0.02646  (10121324)
463126.34   3767698.93        0.03627  (07122924)
        463230.18   3767698.93        0.05427  (11122624)
463334.02   3767698.93        0.06590  (08121924)
        463437.86   3767698.93        0.06335  (08121924)
463541.70   3767698.93        0.04321  (08121924)
        463645.54   3767698.93        0.03051  (09102824)
463749.38   3767698.93        0.01939  (08013024)
```

```
        463853.22   3767698.93        0.01500  (08013024)
463957.06   3767698.93        0.01172m (07112324)
        464060.90   3767698.93        0.00939m (07112324)
464164.74   3767698.93        0.00747m (07112324)
        464268.58   3767698.93        0.00611m (07112324)
464372.42   3767698.93        0.00505m (07112324)
        464476.26   3767698.93        0.00416  (11111224)
462399.46   3767837.87        0.00799  (11013024)
        462503.30   3767837.87        0.00931  (11013024)
462607.14   3767837.87        0.01085  (11013024)
        462710.98   3767837.87        0.01268  (11013024)
462814.82   3767837.87        0.01516  (11013024)
        462918.66   3767837.87        0.01934  (11013024)
463022.50   3767837.87        0.02746  (11121924)
        463126.34   3767837.87        0.04229  (11013024)
463230.18   3767837.87        0.09718  (11121924)
        463334.02   3767837.87        0.20767c (10122324)
463437.86   3767837.87        0.20600  (07120324)
        463541.70   3767837.87        0.18079  (07120324)
463645.54   3767837.87        0.05579  (11051024)
        463749.38   3767837.87        0.02577  (11051024)
463853.22   3767837.87        0.01757  (11051024)
        463957.06   3767837.87        0.01263  (11051024)
464060.90   3767837.87        0.00922  (11051024)
        464164.74   3767837.87        0.00691  (11051024)
464268.58   3767837.87        0.00572m (10102124)
        464372.42   3767837.87        0.00504m (10102124)
464476.26   3767837.87        0.00447m (10102124)
        462399.46   3767976.81        0.00665m (10121724)
462503.30   3767976.81        0.00789  (11013024)
        462607.14   3767976.81        0.00959  (11013024)
462710.98   3767976.81        0.01196  (11013024)
        462814.82   3767976.81        0.01540  (11013024)
462918.66   3767976.81        0.02225m (10121824)
        463022.50   3767976.81        0.03371m (10121824)
463126.34   3767976.81        0.04875m (10121824)
        463230.18   3767976.81        0.05951  (11121824)
463334.02   3767976.81        0.07487  (08121924)
        463437.86   3767976.81        0.07585  (08121924)
463541.70   3767976.81        0.06541  (08121924)
        463645.54   3767976.81        0.05366m (11081524)
463749.38   3767976.81        0.02788  (11040324)
        463853.22   3767976.81        0.01611m (10102124)
463957.06   3767976.81        0.01250m (10102124)
        464060.90   3767976.81        0.00981m (10102124)
464164.74   3767976.81        0.00784m (10102124)
        464268.58   3767976.81        0.00637m (10102124)
464372.42   3767976.81        0.00537  (11061224)
        464476.26   3767976.81        0.00463  (11061224)
462399.46   3768115.75        0.00747  (08052324)
        462503.30   3768115.75        0.00890  (08052324)
462607.14   3768115.75        0.01074  (08052324)
        462710.98   3768115.75        0.01313  (08052324)
462814.82   3768115.75        0.01705m (10121824)
        462918.66   3768115.75        0.02183m (10121824)
463022.50   3768115.75        0.02827  (08052324)
        463126.34   3768115.75        0.04380  (08052324)
463230.18   3768115.75        0.09466m (10121824)
        463334.02   3768115.75        0.13092  (11111924)
463437.86   3768115.75        0.14018  (08021924)
        463541.70   3768115.75        0.14897  (08021924)
463645.54   3768115.75        0.09284m (11081424)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19
```

```
                                        PAGE  30
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
        463749.38   3768115.75        0.03742m (11081424)
463853.22   3768115.75        0.02336m (11081424)
        463957.06   3768115.75        0.01409  (10101724)
464060.90   3768115.75        0.00994  (10101724)
        464164.74   3768115.75        0.00806m (11111524)
464268.58   3768115.75        0.00658m (11111524)
        464372.42   3768115.75        0.00542m (11111524)
464476.26   3768115.75        0.00452  (11061224)
        462399.46   3768254.69        0.00794m (10121824)
462503.30   3768254.69        0.00961m (10121824)
        462607.14   3768254.69        0.01159m (10121824)
462710.98   3768254.69        0.01391m (10121824)
        462814.82   3768254.69        0.01657m (10121824)
462918.66   3768254.69        0.01958m (10121824)
        463022.50   3768254.69        0.02226m (10121824)
463126.34   3768254.69        0.02636  (07042024)
        463230.18   3768254.69        0.02641  (07042024)
463334.02   3768254.69        0.03557  (07120724)
        463437.86   3768254.69        0.04368  (08042424)
463541.70   3768254.69        0.04948  (07090824)
        463645.54   3768254.69        0.04999m (11081524)
463749.38   3768254.69        0.04113m (11081524)
        463853.22   3768254.69        0.02746m (11081424)
463957.06   3768254.69        0.02042m (11081424)
        464060.90   3768254.69        0.01423m (11081424)
464164.74   3768254.69        0.00990m (11081424)
        464268.58   3768254.69        0.00733m (11081424)
464372.42   3768254.69        0.00622m (11111524)
        464476.26   3768254.69        0.00549m (11111524)
462399.46   3768393.63        0.00855m (10121824)
        462503.30   3768393.63        0.00966m (10121824)
462607.14   3768393.63        0.01063m (10121824)
        462710.98   3768393.63        0.01125m (10121824)
462814.82   3768393.63        0.01119m (10121824)
        462918.66   3768393.63        0.01348  (07042024)
463022.50   3768393.63        0.01521  (07042024)
        463126.34   3768393.63        0.01465  (10112024)
463230.18   3768393.63        0.01632  (07120724)
        463334.02   3768393.63        0.02133  (07120724)
463437.86   3768393.63        0.02666m (07090724)
        463541.70   3768393.63        0.03188  (07090824)
```

```
463645.54   3768393.63        0.03114  (07081124)
        463749.38   3768393.63        0.02877m (11081524)
463853.22   3768393.63        0.02696m (11081524)
        463957.06   3768393.63        0.02070m (11081524)
464060.90   3768393.63        0.01572m (11081424)
        464164.74   3768393.63        0.01187m (11081424)
464268.58   3768393.63        0.00875m (11081424)
        464372.42   3768393.63        0.00667m (11081424)
464476.26   3768393.63        0.00551m (11081624)
        462399.46   3768532.57        0.00719m (10121824)
462503.30   3768532.57        0.00721m (10121824)
        462607.14   3768532.57        0.00691  (07042024)
462710.98   3768532.57        0.00852  (07042024)
        462814.82   3768532.57        0.00977  (07042024)
462918.66   3768532.57        0.00989  (07042024)
        463022.50   3768532.57        0.01015  (07100524)
463126.34   3768532.57        0.00968  (07100524)
        463230.18   3768532.57        0.01313  (07120724)
463334.02   3768532.57        0.01454  (07120724)
        463437.86   3768532.57        0.01867m (07090724)
463541.70   3768532.57        0.02218  (07090824)
        463645.54   3768532.57        0.02357  (07081124)
463749.38   3768532.57        0.02009  (11090124)
        463853.22   3768532.57        0.01920m (11081524)
463957.06   3768532.57        0.01871m (11081524)
        464060.90   3768532.57        0.01569m (11081524)
464164.74   3768532.57        0.01270m (11081424)
        464268.58   3768532.57        0.01012m (11081424)
464372.42   3768532.57        0.00777m (11081424)
        464476.26   3768532.57        0.00609  (11092024)
462399.46   3768671.51        0.00492  (07042024)
        462503.30   3768671.51        0.00597  (07042024)
462607.14   3768671.51        0.00684  (07042024)
        462710.98   3768671.51        0.00722  (07042024)
462814.82   3768671.51        0.00716  (10111524)
        462918.66   3768671.51        0.00765  (07100524)
463022.50   3768671.51        0.00753  (07100524)
        463126.34   3768671.51        0.00848  (07120724)
463230.18   3768671.51        0.01057  (07120724)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  31
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
```

- -

463334.02	3768671.51	0.01014	(07120724)
463437.86	3768671.51	0.01384m	(07090724)
463541.70	3768671.51	0.01707m	(07090724)
463645.54	3768671.51	0.01834	(07090824)
463749.38	3768671.51	0.01789	(07081124)
463853.22	3768671.51	0.01522	(11090124)
463957.06	3768671.51	0.01409m	(11081524)
464060.90	3768671.51	0.01370m	(11081524)
464164.74	3768671.51	0.01185m	(11081524)
464268.58	3768671.51	0.01047m	(11081424)
464372.42	3768671.51	0.00879m	(11081424)
464476.26	3768671.51	0.00704m	(11081524)
462399.46	3768810.45	0.00510	(07042024)
462503.30	3768810.45	0.00548	(07042024)
462607.14	3768810.45	0.00576	(10111524)
462710.98	3768810.45	0.00562	(10111524)
462814.82	3768810.45	0.00604	(07100524)
462918.66	3768810.45	0.00607	(07100524)
463022.50	3768810.45	0.00552	(08012724)
463126.34	3768810.45	0.00777	(07120724)
463230.18	3768810.45	0.00835	(07120724)
463334.02	3768810.45	0.00757m	(07070724)
463437.86	3768810.45	0.01065m	(07090724)
463541.70	3768810.45	0.01367m	(07090724)
463645.54	3768810.45	0.01429	(07090824)
463749.38	3768810.45	0.01504	(07081124)
463853.22	3768810.45	0.01284	(07081124)
463957.06	3768810.45	0.01189	(11090124)
464060.90	3768810.45	0.01101m	(11081524)
464164.74	3768810.45	0.01058m	(11081524)
464268.58	3768810.45	0.00917m	(11081524)
464372.42	3768810.45	0.00872m	(11081424)
464476.26	3768810.45	0.00771m	(11081424)
462399.46	3768949.39	0.00445	(10111524)
462503.30	3768949.39	0.00489	(10111524)
462607.14	3768949.39	0.00447	(10111524)
462710.98	3768949.39	0.00493	(07100524)
462814.82	3768949.39	0.00501	(07100524)
462918.66	3768949.39	0.00422	(07100524)
463022.50	3768949.39	0.00553	(07120724)
463126.34	3768949.39	0.00679	(07120724)
463230.18	3768949.39	0.00650	(07120724)
463334.02	3768949.39	0.00621m	(07070724)
463437.86	3768949.39	0.00845m	(07090724)
463541.70	3768949.39	0.01115m	(07090724)
463645.54	3768949.39	0.01097	(07090824)
463749.38	3768949.39	0.01206	(07081124)
463853.22	3768949.39	0.01204	(07081124)
463957.06	3768949.39	0.01001m	(07110624)
464060.90	3768949.39	0.00954	(11090124)
464164.74	3768949.39	0.00896m	(11081524)
464268.58	3768949.39	0.00853m	(11081524)
464372.42	3768949.39	0.00736m	(11081524)
464476.26	3768949.39	0.00728m	(11081424)
462399.46	3769088.33	0.00413	(10111524)
462503.30	3769088.33	0.00366	(10112024)
462607.14	3769088.33	0.00411	(07100524)
462710.98	3769088.33	0.00422	(07100524)
462814.82	3769088.33	0.00370	(07100524)
462918.66	3769088.33	0.00390	(08012724)
463022.50	3769088.33	0.00527	(07120724)
463126.34	3769088.33	0.00573	(07120724)
463230.18	3769088.33	0.00505	(07120724)
463334.02	3769088.33	0.00518m	(07070724)

```
        463437.86   3769088.33        0.00687m (07090724)
463541.70   3769088.33        0.00923m (07090724)
        463645.54   3769088.33        0.00933m (07090724)
463749.38   3769088.33        0.00997  (07090924)
        463853.22   3769088.33        0.01061  (07081124)
463957.06   3769088.33        0.00926  (07081124)
        464060.90   3769088.33        0.00825m (07110624)
464164.74   3769088.33        0.00784  (11090124)
        464268.58   3769088.33        0.00749m (11081524)
464372.42   3769088.33        0.00711m (11081524)
        464476.26   3769088.33        0.00610m (11081524)
462399.46   3769227.27        0.00307  (10112024)
        462503.30   3769227.27        0.00349  (07100524)
462607.14   3769227.27        0.00361  (07100524)
        462710.98   3769227.27        0.00326  (07100524)
462814.82   3769227.27        0.00318  (08012724)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  32
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                         ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -
        462918.66   3769227.27        0.00397  (07120724)
463022.50   3769227.27        0.00480  (07120724)
        463126.34   3769227.27        0.00475  (07120724)
463230.18   3769227.27        0.00395  (07120724)
        463334.02   3769227.27        0.00437m (07070724)
463437.86   3769227.27        0.00570m (07090724)
        463541.70   3769227.27        0.00774m (07090724)
463645.54   3769227.27        0.00814m (07090724)
        463749.38   3769227.27        0.00824  (07090924)
463853.22   3769227.27        0.00893  (07081124)
        463957.06   3769227.27        0.00881  (07081124)
464060.90   3769227.27        0.00724m (07110624)
        464164.74   3769227.27        0.00685m (07110624)
464268.58   3769227.27        0.00658  (11090124)
        464372.42   3769227.27        0.00640m (11081524)
464476.26   3769227.27        0.00606m (11081524)
        462399.46   3769366.21        0.00301  (07100524)
462503.30   3769366.21        0.00312  (07100524)
        462607.14   3769366.21        0.00289  (07100524)
462710.98   3769366.21        0.00262  (11030424)
        462814.82   3769366.21        0.00295  (07120724)
```

```
462918.66   3769366.21        0.00386  (07120724)
        463022.50   3769366.21        0.00423  (07120724)
463126.34   3769366.21        0.00390  (07120724)
        463230.18   3769366.21        0.00348  (09092924)
463334.02   3769366.21        0.00377  (07092324)
        463437.86   3769366.21        0.00487  (07081224)
463541.70   3769366.21        0.00656m (07090724)
        463645.54   3769366.21        0.00712m (07090724)
463749.38   3769366.21        0.00675  (09081324)
        463853.22   3769366.21        0.00745  (07090924)
463957.06   3769366.21        0.00797  (07081124)
        464060.90   3769366.21        0.00708  (07081124)
464164.74   3769366.21        0.00633m (07110624)
        464268.58   3769366.21        0.00576  (11090124)
464372.42   3769366.21        0.00561  (11090124)
        464476.26   3769366.21        0.00555m (11081524)
462399.46   3769505.15        0.00273  (07100524)
        462503.30   3769505.15        0.00258  (07100524)
462607.14   3769505.15        0.00237  (11030424)
        462710.98   3769505.15        0.00250  (08012724)
462814.82   3769505.15        0.00303  (07120724)
        462918.66   3769505.15        0.00359  (07120724)
463022.50   3769505.15        0.00366  (07120724)
        463126.34   3769505.15        0.00321  (07120724)
463230.18   3769505.15        0.00308  (09092924)
        463334.02   3769505.15        0.00335  (07092324)
463437.86   3769505.15        0.00426  (07081224)
        463541.70   3769505.15        0.00562m (07090724)
463645.54   3769505.15        0.00626m (07090724)
        463749.38   3769505.15        0.00595  (09081324)
463853.22   3769505.15        0.00643  (07090924)
        463957.06   3769505.15        0.00693  (07081124)
464060.90   3769505.15        0.00680  (07081124)
        464164.74   3769505.15        0.00561  (07081124)
464268.58   3769505.15        0.00552m (07110624)
        464372.42   3769505.15        0.00501  (11090124)
464476.26   3769505.15        0.00485  (11090124)
        462399.46   3769644.09        0.00231  (07100524)
462503.30   3769644.09        0.00214  (11030424)
        462607.14   3769644.09        0.00212  (08012724)
462710.98   3769644.09        0.00235  (07120724)
        462814.82   3769644.09        0.00296  (07120724)
462918.66   3769644.09        0.00326  (07120724)
        463022.50   3769644.09        0.00314  (07120724)
463126.34   3769644.09        0.00265  (07120724)
        463230.18   3769644.09        0.00273  (09092924)
463334.02   3769644.09        0.00300  (07092324)
        463437.86   3769644.09        0.00375  (07081224)
463541.70   3769644.09        0.00486m (07090724)
        463645.54   3769644.09        0.00551m (07090724)
463749.38   3769644.09        0.00529m (07090724)
        463853.22   3769644.09        0.00549  (07090924)
463957.06   3769644.09        0.00584  (07081124)
        464060.90   3769644.09        0.00626  (07081124)
464164.74   3769644.09        0.00564  (07081124)
        464268.58   3769644.09        0.00494m (07110624)
464372.42   3769644.09        0.00480m (07110624)
        464476.26   3769644.09        0.00441  (11090124)
462399.46   3769783.03        0.00192  (11030424)
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  33
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN
```

```
                              *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     L0000169    ,
L0000170    , L0000171    , L0000172    , L0000173    ,
                L0000174    , L0000175    , L0000176    , L0000177    ,
L0000178    , L0000179    , L0000180    , L0000181    ,
                L0000182    , L0000183    , L0000184    , L0000185    ,
L0000186    , L0000187    , L0000188    , L0000189    ,
                L0000190    , L0000191    , AREA1       , AREA2       ,
L0000192    , L0000193    , L0000194    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                             ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD
(M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        462503.30   3769783.03        0.00188  (11030424)
462607.14   3769783.03        0.00200  (08012724)
        462710.98   3769783.03        0.00240  (07120724)
462814.82   3769783.03        0.00280  (07120724)
        462918.66   3769783.03        0.00291  (07120724)
463022.50   3769783.03        0.00268  (07120724)
        463126.34   3769783.03        0.00237  (09092924)
463230.18   3769783.03        0.00243  (09092924)
        463334.02   3769783.03        0.00272  (07092324)
463437.86   3769783.03        0.00333  (07081224)
        463541.70   3769783.03        0.00424m (07090724)
463645.54   3769783.03        0.00488m (07090724)
        463749.38   3769783.03        0.00483m (07090724)
463853.22   3769783.03        0.00466  (07090924)
        463957.06   3769783.03        0.00516  (07090924)
464060.90   3769783.03        0.00557  (07081124)
        464164.74   3769783.03        0.00545  (07081124)
464268.58   3769783.03        0.00462  (07081124)
        464372.42   3769783.03        0.00447m (07110624)
464476.26   3769783.03        0.00418m (07110624)
        462399.46   3769921.97        0.00175  (11030424)
462503.30   3769921.97        0.00176  (08012724)
        462607.14   3769921.97        0.00194  (07090324)
462710.98   3769921.97        0.00236  (07120724)
        462814.82   3769921.97        0.00260  (07120724)
462918.66   3769921.97        0.00257  (07120724)
        463022.50   3769921.97        0.00228  (07120724)
463126.34   3769921.97        0.00218  (09092924)
        463230.18   3769921.97        0.00216  (09092924)
463334.02   3769921.97        0.00248  (07092324)
        463437.86   3769921.97        0.00298  (07081224)
463541.70   3769921.97        0.00373m (07090724)
        463645.54   3769921.97        0.00433m (07090724)
463749.38   3769921.97        0.00440m (07090724)
        463853.22   3769921.97        0.00420  (09081324)
463957.06   3769921.97        0.00454  (07090924)
        464060.90   3769921.97        0.00482  (07081124)
464164.74   3769921.97        0.00508  (07081124)
        464268.58   3769921.97        0.00463  (07081124)
464372.42   3769921.97        0.00392m (07110624)
        464476.26   3769921.97        0.00402m (07110624)
463236.00   3768116.00        0.09747m (10121824)
        463239.00   3767823.00        0.10229  (11121924)
463326.00   3767821.00        0.15489c (10122324)
```

```
        463328.00   3767727.00        0.07349  (08121924)
463619.00   3767725.00        0.03623  (09102824)
        463618.00   3768116.00        0.12848m (11081424)

♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  34
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                    *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***


                                     ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                      **


                              NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.06630 AT (  463437.86,  3768115.75,
300.00,   300.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.06529 AT (  463334.02,  3767837.87,
300.00,   300.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.06522 AT (  463437.86,  3767837.87,
300.00,   300.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.06405 AT (  463541.70,  3768115.75,
300.00,   300.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.05712 AT (  463334.02,  3768115.75,
300.00,   300.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.05541 AT (  463541.70,  3767837.87,
300.00,   300.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.04511 AT (  463326.00,  3767821.00,
300.00,   300.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.04048 AT (  463618.00,  3768116.00,
300.00,   300.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.03989 AT (  463437.86,  3767976.81,
300.00,   300.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.03421 AT (  463541.70,  3767976.81,
300.00,   300.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                              ***        16:22:19

                                         PAGE  35
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                                 *** THE SUMMARY OF HIGHEST
1-HR RESULTS ***


                                     ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                      **
```

```
                                                        DATE
                                                    NETWORK
GROUP ID                            AVERAGE CONC     (YYMMDDHH)
RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.34984  ON 09082923: AT (  463334.02,
 3767837.87,   300.00,   300.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                            ***        16:22:19

                                       PAGE  36
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

                                                 *** THE SUMMARY OF HIGHEST
24-HR RESULTS ***


                                    ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                     **

                                                        DATE
                                                    NETWORK
GROUP ID                            AVERAGE CONC     (YYMMDDHH)
RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.20767c ON 10122324: AT (  463334.02,
 3767837.87,   300.00,   300.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
♀ *** AERMOD - VERSION  15181 ***   *** C:\Emissions Models\San Bernardino
County\Bloomington - Western Real ***        10/25/16
 *** AERMET - VERSION  14134 ***   ***
                            ***        16:22:19

                                       PAGE  37
 **MODELOPTs:   NonDFAULT CONC      FLAT      URBAN

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1086 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           37 Calm Hours Identified
```

```
A Total of         1049 Missing Hours Identified (  2.39 Percent)

   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***

   ********   WARNING MESSAGES   ********
              ***  NONE  ***

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Bloomington Industrial Warehouse
Total Construction
Fuel Usage

Project Action	CO2e (Metric tons)	Total Gallons of Fuel Consumed
Construction		
Industrial Warehouse	**1181**	116,355

Notes:
Fuel used by vehicle hauling trips and processing equipment assumed to be diesel.

Sources:
Carbon Dioxide Equivalent Emissions: See Section 3.4; Conversion Ratios: Climate Registry 2015

Project Fuel Consumption Daily Gallons (000)

Sub-Area	Cal. Year	Season	Veh_Tech	Trips	Fuel_GAS	Fuel_DSL
San Bernardino (SC)	2015	Annual	All Vehicles	1,136.3	0.3499	0.0014

San Bernardino County Offroad Fuel Consumption

Year	Season	Sub Area	Vehicle Class	Pollutant	Gallons (000)
2007	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.085
2007	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.415
2007	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.268
2007	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	2.286
2007	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	5.873
2007	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.108
2007	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	107.333
2007	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	2.658
2007	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	6.520
2007	Annual	San Bernardino (MD)	T7 Tractor	Fuel	27.726
2007	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	4.865
2007	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.064
2007	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.130
2007	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.398
2007	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.431
2007	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	5.333
2007	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.095
2007	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	39.101
2007	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	2.800
2007	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	6.884
2007	Annual	San Bernardino (SC)	T7 Tractor	Fuel	52.545
2007	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	5.137
			2007 Total		**274.055**
2008	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.085
2008	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.380
2008	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.163
2008	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	1.878
2008	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	4.834
2008	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.105
2008	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	94.491
2008	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	2.085
2008	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	5.344
2008	Annual	San Bernardino (MD)	T7 Tractor	Fuel	25.401
2008	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	3.988
2008	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.064
2008	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.120
2008	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.366
2008	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.091
2008	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	4.599
2008	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.093
2008	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	34.540
2008	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	2.305
2008	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	5.907
2008	Annual	San Bernardino (SC)	T7 Tractor	Fuel	48.195
2008	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	4.408

San Bernardino County Offroad Fuel Consumption

			2008 Total		**242.442**
2009	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.084
2009	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.347
2009	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.061
2009	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	1.667
2009	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	4.297
2009	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.104
2009	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	86.435
2009	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	1.855
2009	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	4.749
2009	Annual	San Bernardino (MD)	T7 Tractor	Fuel	23.206
2009	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	3.544
2009	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.064
2009	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.109
2009	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.333
2009	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	1.501
2009	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	3.307
2009	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.092
2009	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	31.518
2009	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	1.659
2009	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	4.245
2009	Annual	San Bernardino (SC)	T7 Tractor	Fuel	44.018
2009	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	3.167
			2009 Total		**217.361**
2010	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.083
2010	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.349
2010	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.068
2010	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	1.722
2010	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	4.445
2010	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.104
2010	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	87.240
2010	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	1.920
2010	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	4.905
2010	Annual	San Bernardino (MD)	T7 Tractor	Fuel	23.271
2010	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	3.658
2010	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2010	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.110
2010	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.336
2010	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	1.796
2010	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	3.965
2010	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.091
2010	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	31.886
2010	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	1.989
2010	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	5.078
2010	Annual	San Bernardino (SC)	T7 Tractor	Fuel	44.110

San Bernardino County Offroad Fuel Consumption

2010	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	3.786
			2010 Total		**221.976**
2011	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.083
2011	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.353
2011	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.086
2011	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	0.589
2011	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	1.524
2011	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.103
2011	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	88.201
2011	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	0.658
2011	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	1.674
2011	Annual	San Bernardino (MD)	T7 Tractor	Fuel	23.419
2011	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	1.248
2011	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2011	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.112
2011	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.344
2011	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.448
2011	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	5.423
2011	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.091
2011	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	32.464
2011	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	2.715
2011	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	6.898
2011	Annual	San Bernardino (SC)	T7 Tractor	Fuel	44.724
2011	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	5.143
			2011 Total		**219.360**
2012	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.082
2012	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.351
2012	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.083
2012	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	0.588
2012	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	1.527
2012	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.102
2012	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	88.260
2012	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	0.658
2012	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	1.666
2012	Annual	San Bernardino (MD)	T7 Tractor	Fuel	23.216
2012	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	1.243
2012	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.062
2012	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.112
2012	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.343
2012	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.700
2012	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	6.000
2012	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.090
2012	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	32.618
2012	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	3.002
2012	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	7.589

San Bernardino County Offroad Fuel Consumption

2012	Annual	San Bernardino (SC)	T7 Tractor	Fuel	44.617
2012	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	5.659
			2012 Total		**221.567**
2013	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.082
2013	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.360
2013	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.136
2013	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	0.726
2013	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	1.887
2013	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.102
2013	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	89.692
2013	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	0.810
2013	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	2.043
2013	Annual	San Bernardino (MD)	T7 Tractor	Fuel	23.498
2013	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	1.523
2013	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2013	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.115
2013	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.361
2013	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.840
2013	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	6.318
2013	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.090
2013	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	33.360
2013	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	3.150
2013	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	7.931
2013	Annual	San Bernardino (SC)	T7 Tractor	Fuel	45.474
2013	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	5.914
			2013 Total		**227.475**
2014	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.082
2014	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.372
2014	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.171
2014	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	0.874
2014	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	2.268
2014	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.102
2014	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	92.172
2014	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	0.978
2014	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	2.437
2014	Annual	San Bernardino (MD)	T7 Tractor	Fuel	24.013
2014	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	1.822
2014	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2014	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.120
2014	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.373
2014	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	2.974
2014	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	6.590
2014	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.090
2014	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	34.368
2014	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	3.312

San Bernardino County Offroad Fuel Consumption

2014	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	8.225
2014	Annual	San Bernardino (SC)	T7 Tractor	Fuel	46.632
2014	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	6.153
			2014 Total		**235.189**
2015	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.082
2015	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.395
2015	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.242
2015	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	1.029
2015	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	2.679
2015	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.102
2015	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	97.039
2015	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	1.140
2015	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	2.836
2015	Annual	San Bernardino (MD)	T7 Tractor	Fuel	25.129
2015	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	2.123
2015	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2015	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.128
2015	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.398
2015	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	3.118
2015	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	6.929
2015	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.091
2015	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	36.424
2015	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	3.431
2015	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	8.509
2015	Annual	San Bernardino (SC)	T7 Tractor	Fuel	49.218
2015	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	6.375
			2015 Total		**248.480**
2016	Annual	San Bernardino (MD)	T6 Ag	Fuel	0.082
2016	Annual	San Bernardino (MD)	T6 CAIRP Heavy	Fuel	0.414
2016	Annual	San Bernardino (MD)	T6 CAIRP Small	Fuel	1.300
2016	Annual	San Bernardino (MD)	T6 Instate Construction Heavy	Fuel	1.093
2016	Annual	San Bernardino (MD)	T6 Instate Construction Small	Fuel	2.845
2016	Annual	San Bernardino (MD)	T7 Ag	Fuel	0.102
2016	Annual	San Bernardino (MD)	T7 CAIRP	Fuel	101.195
2016	Annual	San Bernardino (MD)	T7 CAIRP Construction	Fuel	1.201
2016	Annual	San Bernardino (MD)	T7 Single Construction	Fuel	2.989
2016	Annual	San Bernardino (MD)	T7 Tractor	Fuel	26.134
2016	Annual	San Bernardino (MD)	T7 Tractor Construction	Fuel	2.241
2016	Annual	San Bernardino (SC)	T6 Ag	Fuel	0.063
2016	Annual	San Bernardino (SC)	T6 CAIRP Heavy	Fuel	0.134
2016	Annual	San Bernardino (SC)	T6 CAIRP Small	Fuel	0.417
2016	Annual	San Bernardino (SC)	T6 Instate Construction Heavy	Fuel	3.248
2016	Annual	San Bernardino (SC)	T6 Instate Construction Small	Fuel	7.195
2016	Annual	San Bernardino (SC)	T7 Ag	Fuel	0.091
2016	Annual	San Bernardino (SC)	T7 CAIRP	Fuel	37.957

San Bernardino County Offroad Fuel Consumption

2016	Annual	San Bernardino (SC)	T7 CAIRP Construction	Fuel	3.530
2016	Annual	San Bernardino (SC)	T7 Single Construction	Fuel	8.780
2016	Annual	San Bernardino (SC)	T7 Tractor	Fuel	51.204
2016	Annual	San Bernardino (SC)	T7 Tractor Construction	Fuel	6.591
			2016 Total (Projected)		**258.807**

San Bernardino County Onroad Fuel Consumption

Year	Season	Sub Area	Vehicle Class	Pollutant	Gallons (000)
2007	Annual	San Bernardino (MD)	LDA	Fuel	495.578
2007	Annual	San Bernardino (MD)	LDT1	Fuel	70.861
2007	Annual	San Bernardino (MD)	LDT2	Fuel	253.991
2007	Annual	San Bernardino (MD)	LHD1	Fuel	90.439
2007	Annual	San Bernardino (MD)	LHD2	Fuel	15.738
2007	Annual	San Bernardino (MD)	MCY	Fuel	8.898
2007	Annual	San Bernardino (MD)	MDV	Fuel	295.763
2007	Annual	San Bernardino (MD)	MH	Fuel	8.529
2007	Annual	San Bernardino (MD)	PTO	Fuel	1.707
2007	Annual	San Bernardino (MD)	SBUS	Fuel	2.359
2007	Annual	San Bernardino (MD)	UBUS	Fuel	13.525
2007	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.414
2007	Annual	San Bernardino (MD)	OBUS	Fuel	3.542
2007	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.399
2007	Annual	San Bernardino (SC)	LDA	Fuel	726.450
2007	Annual	San Bernardino (SC)	LDT1	Fuel	110.168
2007	Annual	San Bernardino (SC)	LDT2	Fuel	344.352
2007	Annual	San Bernardino (SC)	LHD1	Fuel	110.210
2007	Annual	San Bernardino (SC)	LHD2	Fuel	20.404
2007	Annual	San Bernardino (SC)	MCY	Fuel	4.471
2007	Annual	San Bernardino (SC)	MDV	Fuel	502.431
2007	Annual	San Bernardino (SC)	MH	Fuel	9.868
2007	Annual	San Bernardino (SC)	PTO	Fuel	6.951
2007	Annual	San Bernardino (SC)	SBUS	Fuel	4.258
2007	Annual	San Bernardino (SC)	UBUS	Fuel	10.966
2007	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.250
2007	Annual	San Bernardino (SC)	OBUS	Fuel	3.201
2007	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.240
			2007 Total		**3117.965**
2008	Annual	San Bernardino (MD)	LDA	Fuel	472.469
2008	Annual	San Bernardino (MD)	LDT1	Fuel	68.649
2008	Annual	San Bernardino (MD)	LDT2	Fuel	237.276
2008	Annual	San Bernardino (MD)	LHD1	Fuel	83.401
2008	Annual	San Bernardino (MD)	LHD2	Fuel	16.111
2008	Annual	San Bernardino (MD)	MCY	Fuel	9.055
2008	Annual	San Bernardino (MD)	MDV	Fuel	282.553
2008	Annual	San Bernardino (MD)	MH	Fuel	7.671
2008	Annual	San Bernardino (MD)	PTO	Fuel	1.391
2008	Annual	San Bernardino (MD)	SBUS	Fuel	2.223
2008	Annual	San Bernardino (MD)	UBUS	Fuel	13.573
2008	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.379
2008	Annual	San Bernardino (MD)	OBUS	Fuel	3.463
2008	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.362
2008	Annual	San Bernardino (SC)	LDA	Fuel	691.339
2008	Annual	San Bernardino (SC)	LDT1	Fuel	103.744

San Bernardino County Onroad Fuel Consumption

2008	Annual	San Bernardino (SC)	LDT2	Fuel	324.194
2008	Annual	San Bernardino (SC)	LHD1	Fuel	101.306
2008	Annual	San Bernardino (SC)	LHD2	Fuel	21.688
2008	Annual	San Bernardino (SC)	MCY	Fuel	4.651
2008	Annual	San Bernardino (SC)	MDV	Fuel	472.054
2008	Annual	San Bernardino (SC)	MH	Fuel	9.096
2008	Annual	San Bernardino (SC)	PTO	Fuel	6.332
2008	Annual	San Bernardino (SC)	SBUS	Fuel	3.952
2008	Annual	San Bernardino (SC)	UBUS	Fuel	10.910
2008	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.146
2008	Annual	San Bernardino (SC)	OBUS	Fuel	3.602
2008	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.148
			2008 Total		**2953.739**
2009	Annual	San Bernardino (MD)	LDA	Fuel	472.355
2009	Annual	San Bernardino (MD)	LDT1	Fuel	68.629
2009	Annual	San Bernardino (MD)	LDT2	Fuel	234.439
2009	Annual	San Bernardino (MD)	LHD1	Fuel	78.583
2009	Annual	San Bernardino (MD)	LHD2	Fuel	15.014
2009	Annual	San Bernardino (MD)	MCY	Fuel	8.723
2009	Annual	San Bernardino (MD)	MDV	Fuel	275.015
2009	Annual	San Bernardino (MD)	MH	Fuel	7.486
2009	Annual	San Bernardino (MD)	PTO	Fuel	1.229
2009	Annual	San Bernardino (MD)	SBUS	Fuel	2.148
2009	Annual	San Bernardino (MD)	UBUS	Fuel	13.322
2009	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.346
2009	Annual	San Bernardino (MD)	OBUS	Fuel	4.008
2009	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.333
2009	Annual	San Bernardino (SC)	LDA	Fuel	689.353
2009	Annual	San Bernardino (SC)	LDT1	Fuel	98.583
2009	Annual	San Bernardino (SC)	LDT2	Fuel	320.920
2009	Annual	San Bernardino (SC)	LHD1	Fuel	94.298
2009	Annual	San Bernardino (SC)	LHD2	Fuel	19.773
2009	Annual	San Bernardino (SC)	MCY	Fuel	4.464
2009	Annual	San Bernardino (SC)	MDV	Fuel	450.572
2009	Annual	San Bernardino (SC)	MH	Fuel	8.761
2009	Annual	San Bernardino (SC)	PTO	Fuel	5.669
2009	Annual	San Bernardino (SC)	SBUS	Fuel	3.659
2009	Annual	San Bernardino (SC)	UBUS	Fuel	11.010
2009	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.044
2009	Annual	San Bernardino (SC)	OBUS	Fuel	3.697
2009	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.052
			2009 Total		**2894.486**
2010	Annual	San Bernardino (MD)	LDA	Fuel	474.116
2010	Annual	San Bernardino (MD)	LDT1	Fuel	66.667
2010	Annual	San Bernardino (MD)	LDT2	Fuel	236.588

San Bernardino County Onroad Fuel Consumption

2010	Annual	San Bernardino (MD)	LHD1	Fuel	75.111
2010	Annual	San Bernardino (MD)	LHD2	Fuel	14.432
2010	Annual	San Bernardino (MD)	MCY	Fuel	8.400
2010	Annual	San Bernardino (MD)	MDV	Fuel	272.011
2010	Annual	San Bernardino (MD)	MH	Fuel	7.132
2010	Annual	San Bernardino (MD)	PTO	Fuel	1.071
2010	Annual	San Bernardino (MD)	SBUS	Fuel	2.196
2010	Annual	San Bernardino (MD)	UBUS	Fuel	14.131
2010	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.348
2010	Annual	San Bernardino (MD)	OBUS	Fuel	3.959
2010	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.320
2010	Annual	San Bernardino (SC)	LDA	Fuel	697.584
2010	Annual	San Bernardino (SC)	LDT1	Fuel	96.978
2010	Annual	San Bernardino (SC)	LDT2	Fuel	323.961
2010	Annual	San Bernardino (SC)	LHD1	Fuel	89.445
2010	Annual	San Bernardino (SC)	LHD2	Fuel	19.368
2010	Annual	San Bernardino (SC)	MCY	Fuel	4.247
2010	Annual	San Bernardino (SC)	MDV	Fuel	444.453
2010	Annual	San Bernardino (SC)	MH	Fuel	8.440
2010	Annual	San Bernardino (SC)	PTO	Fuel	5.735
2010	Annual	San Bernardino (SC)	SBUS	Fuel	3.675
2010	Annual	San Bernardino (SC)	UBUS	Fuel	11.204
2010	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.054
2010	Annual	San Bernardino (SC)	OBUS	Fuel	3.771
2010	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.104
			2010 Total		**2887.500**
2011	Annual	San Bernardino (MD)	LDA	Fuel	464.232
2011	Annual	San Bernardino (MD)	LDT1	Fuel	60.624
2011	Annual	San Bernardino (MD)	LDT2	Fuel	235.459
2011	Annual	San Bernardino (MD)	LHD1	Fuel	69.557
2011	Annual	San Bernardino (MD)	LHD2	Fuel	13.767
2011	Annual	San Bernardino (MD)	MCY	Fuel	8.181
2011	Annual	San Bernardino (MD)	MDV	Fuel	261.996
2011	Annual	San Bernardino (MD)	MH	Fuel	6.504
2011	Annual	San Bernardino (MD)	PTO	Fuel	1.070
2011	Annual	San Bernardino (MD)	SBUS	Fuel	2.232
2011	Annual	San Bernardino (MD)	UBUS	Fuel	15.073
2011	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.351
2011	Annual	San Bernardino (MD)	OBUS	Fuel	3.655
2011	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.309
2011	Annual	San Bernardino (SC)	LDA	Fuel	696.740
2011	Annual	San Bernardino (SC)	LDT1	Fuel	88.846
2011	Annual	San Bernardino (SC)	LDT2	Fuel	326.409
2011	Annual	San Bernardino (SC)	LHD1	Fuel	82.211
2011	Annual	San Bernardino (SC)	LHD2	Fuel	18.684
2011	Annual	San Bernardino (SC)	MCY	Fuel	4.073

San Bernardino County Onroad Fuel Consumption

2011	Annual	San Bernardino (SC)	MDV	Fuel	426.093
2011	Annual	San Bernardino (SC)	MH	Fuel	7.856
2011	Annual	San Bernardino (SC)	PTO	Fuel	5.560
2011	Annual	San Bernardino (SC)	SBUS	Fuel	3.750
2011	Annual	San Bernardino (SC)	UBUS	Fuel	10.908
2011	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.070
2011	Annual	San Bernardino (SC)	OBUS	Fuel	3.592
2011	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.088
			2011 Total		**2819.891**
2012	Annual	San Bernardino (MD)	LDA	Fuel	465.315
2012	Annual	San Bernardino (MD)	LDT1	Fuel	57.296
2012	Annual	San Bernardino (MD)	LDT2	Fuel	230.736
2012	Annual	San Bernardino (MD)	LHD1	Fuel	64.135
2012	Annual	San Bernardino (MD)	LHD2	Fuel	13.425
2012	Annual	San Bernardino (MD)	MCY	Fuel	7.988
2012	Annual	San Bernardino (MD)	MDV	Fuel	251.393
2012	Annual	San Bernardino (MD)	MH	Fuel	6.097
2012	Annual	San Bernardino (MD)	PTO	Fuel	0.975
2012	Annual	San Bernardino (MD)	SBUS	Fuel	2.169
2012	Annual	San Bernardino (MD)	UBUS	Fuel	15.845
2012	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.350
2012	Annual	San Bernardino (MD)	OBUS	Fuel	3.562
2012	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.289
2012	Annual	San Bernardino (SC)	LDA	Fuel	704.574
2012	Annual	San Bernardino (SC)	LDT1	Fuel	83.297
2012	Annual	San Bernardino (SC)	LDT2	Fuel	321.084
2012	Annual	San Bernardino (SC)	LHD1	Fuel	75.246
2012	Annual	San Bernardino (SC)	LHD2	Fuel	18.187
2012	Annual	San Bernardino (SC)	MCY	Fuel	4.006
2012	Annual	San Bernardino (SC)	MDV	Fuel	406.408
2012	Annual	San Bernardino (SC)	MH	Fuel	7.368
2012	Annual	San Bernardino (SC)	PTO	Fuel	5.429
2012	Annual	San Bernardino (SC)	SBUS	Fuel	3.743
2012	Annual	San Bernardino (SC)	UBUS	Fuel	11.131
2012	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.070
2012	Annual	San Bernardino (SC)	OBUS	Fuel	3.135
2012	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.135
			2012 Total		**2765.388**
2013	Annual	San Bernardino (MD)	LDA	Fuel	461.373
2013	Annual	San Bernardino (MD)	LDT1	Fuel	53.780
2013	Annual	San Bernardino (MD)	LDT2	Fuel	225.895
2013	Annual	San Bernardino (MD)	LHD1	Fuel	59.094
2013	Annual	San Bernardino (MD)	LHD2	Fuel	12.781
2013	Annual	San Bernardino (MD)	MCY	Fuel	7.500
2013	Annual	San Bernardino (MD)	MDV	Fuel	239.672

San Bernardino County Onroad Fuel Consumption

2013	Annual	San Bernardino (MD)	MH	Fuel	5.654
2013	Annual	San Bernardino (MD)	PTO	Fuel	1.010
2013	Annual	San Bernardino (MD)	SBUS	Fuel	2.087
2013	Annual	San Bernardino (MD)	UBUS	Fuel	15.144
2013	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.363
2013	Annual	San Bernardino (MD)	OBUS	Fuel	3.482
2013	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.294
2013	Annual	San Bernardino (SC)	LDA	Fuel	700.119
2013	Annual	San Bernardino (SC)	LDT1	Fuel	78.783
2013	Annual	San Bernardino (SC)	LDT2	Fuel	319.222
2013	Annual	San Bernardino (SC)	LHD1	Fuel	69.703
2013	Annual	San Bernardino (SC)	LHD2	Fuel	17.326
2013	Annual	San Bernardino (SC)	MCY	Fuel	3.877
2013	Annual	San Bernardino (SC)	MDV	Fuel	388.693
2013	Annual	San Bernardino (SC)	MH	Fuel	6.918
2013	Annual	San Bernardino (SC)	PTO	Fuel	5.736
2013	Annual	San Bernardino (SC)	SBUS	Fuel	3.744
2013	Annual	San Bernardino (SC)	UBUS	Fuel	10.685
2013	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.117
2013	Annual	San Bernardino (SC)	OBUS	Fuel	3.136
2013	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.215
			2013 Total		**2698.403**
2014	Annual	San Bernardino (MD)	LDA	Fuel	473.721
2014	Annual	San Bernardino (MD)	LDT1	Fuel	52.098
2014	Annual	San Bernardino (MD)	LDT2	Fuel	228.601
2014	Annual	San Bernardino (MD)	LHD1	Fuel	56.100
2014	Annual	San Bernardino (MD)	LHD2	Fuel	12.507
2014	Annual	San Bernardino (MD)	MCY	Fuel	7.305
2014	Annual	San Bernardino (MD)	MDV	Fuel	236.003
2014	Annual	San Bernardino (MD)	MH	Fuel	5.394
2014	Annual	San Bernardino (MD)	PTO	Fuel	1.043
2014	Annual	San Bernardino (MD)	SBUS	Fuel	2.148
2014	Annual	San Bernardino (MD)	UBUS	Fuel	14.813
2014	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.373
2014	Annual	San Bernardino (MD)	OBUS	Fuel	3.522
2014	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.305
2014	Annual	San Bernardino (SC)	LDA	Fuel	715.931
2014	Annual	San Bernardino (SC)	LDT1	Fuel	76.536
2014	Annual	San Bernardino (SC)	LDT2	Fuel	325.988
2014	Annual	San Bernardino (SC)	LHD1	Fuel	66.496
2014	Annual	San Bernardino (SC)	LHD2	Fuel	16.956
2014	Annual	San Bernardino (SC)	MCY	Fuel	3.880
2014	Annual	San Bernardino (SC)	MDV	Fuel	382.445
2014	Annual	San Bernardino (SC)	MH	Fuel	6.651
2014	Annual	San Bernardino (SC)	PTO	Fuel	6.005
2014	Annual	San Bernardino (SC)	SBUS	Fuel	3.861

San Bernardino County Onroad Fuel Consumption

2014	Annual	San Bernardino (SC)	UBUS	Fuel	10.528
2014	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.149
2014	Annual	San Bernardino (SC)	OBUS	Fuel	3.217
2014	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.266
			2014 Total		**2714.840**
2015	Annual	San Bernardino (MD)	LDA	Fuel	479.184
2015	Annual	San Bernardino (MD)	LDT1	Fuel	49.846
2015	Annual	San Bernardino (MD)	LDT2	Fuel	227.535
2015	Annual	San Bernardino (MD)	LHD1	Fuel	53.052
2015	Annual	San Bernardino (MD)	LHD2	Fuel	12.215
2015	Annual	San Bernardino (MD)	MCY	Fuel	7.059
2015	Annual	San Bernardino (MD)	MDV	Fuel	228.861
2015	Annual	San Bernardino (MD)	MH	Fuel	5.103
2015	Annual	San Bernardino (MD)	PTO	Fuel	1.090
2015	Annual	San Bernardino (MD)	SBUS	Fuel	2.257
2015	Annual	San Bernardino (MD)	UBUS	Fuel	14.545
2015	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.391
2015	Annual	San Bernardino (MD)	OBUS	Fuel	3.553
2015	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.334
2015	Annual	San Bernardino (SC)	LDA	Fuel	731.832
2015	Annual	San Bernardino (SC)	LDT1	Fuel	74.526
2015	Annual	San Bernardino (SC)	LDT2	Fuel	331.990
2015	Annual	San Bernardino (SC)	LHD1	Fuel	63.467
2015	Annual	San Bernardino (SC)	LHD2	Fuel	16.640
2015	Annual	San Bernardino (SC)	MCY	Fuel	3.914
2015	Annual	San Bernardino (SC)	MDV	Fuel	376.222
2015	Annual	San Bernardino (SC)	MH	Fuel	6.483
2015	Annual	San Bernardino (SC)	PTO	Fuel	6.394
2015	Annual	San Bernardino (SC)	SBUS	Fuel	4.063
2015	Annual	San Bernardino (SC)	UBUS	Fuel	10.415
2015	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.214
2015	Annual	San Bernardino (SC)	OBUS	Fuel	3.362
2015	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.379
			2015 Total		**2716.925**
2016	Annual	San Bernardino (MD)	LDA	Fuel	488.982
2016	Annual	San Bernardino (MD)	LDT1	Fuel	48.228
2016	Annual	San Bernardino (MD)	LDT2	Fuel	228.064
2016	Annual	San Bernardino (MD)	LHD1	Fuel	50.185
2016	Annual	San Bernardino (MD)	LHD2	Fuel	11.938
2016	Annual	San Bernardino (MD)	MCY	Fuel	6.963
2016	Annual	San Bernardino (MD)	MDV	Fuel	223.686
2016	Annual	San Bernardino (MD)	MH	Fuel	4.833
2016	Annual	San Bernardino (MD)	PTO	Fuel	1.143
2016	Annual	San Bernardino (MD)	SBUS	Fuel	2.356
2016	Annual	San Bernardino (MD)	UBUS	Fuel	14.260

San Bernardino County Onroad Fuel Consumption

2016	Annual	San Bernardino (MD)	Motor Coach	Fuel	0.408
2016	Annual	San Bernardino (MD)	OBUS	Fuel	3.612
2016	Annual	San Bernardino (MD)	All Other Buses	Fuel	0.356
2016	Annual	San Bernardino (SC)	LDA	Fuel	744.001
2016	Annual	San Bernardino (SC)	LDT1	Fuel	72.360
2016	Annual	San Bernardino (SC)	LDT2	Fuel	335.440
2016	Annual	San Bernardino (SC)	LHD1	Fuel	60.454
2016	Annual	San Bernardino (SC)	LHD2	Fuel	16.287
2016	Annual	San Bernardino (SC)	MCY	Fuel	3.965
2016	Annual	San Bernardino (SC)	MDV	Fuel	367.923
2016	Annual	San Bernardino (SC)	MH	Fuel	6.205
2016	Annual	San Bernardino (SC)	PTO	Fuel	6.799
2016	Annual	San Bernardino (SC)	SBUS	Fuel	4.241
2016	Annual	San Bernardino (SC)	UBUS	Fuel	10.289
2016	Annual	San Bernardino (SC)	Motor Coach	Fuel	1.267
2016	Annual	San Bernardino (SC)	OBUS	Fuel	3.464
2016	Annual	San Bernardino (SC)	All Other Buses	Fuel	1.462
			2016 Total (Projected)		**2719.172**

Western Realco AQ

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	676.98	1000sqft	15.54	676,983.00	0
Other Non-Asphalt Surfaces	571.94	1000sqft	13.13	571,940.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - glitch

Construction Phase - Project construction anticipated to last 10 months. Carpentry, paving, and architectural coating assumed to occur simultaneously.

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment -

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - grading hauling is cut and fill on site.

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rate per TIA and SCAQMD

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Vechicle Emission Factors - fleet mix per TIA

Area Coating - Area Coating 50 g/L VOC-Non-Residential Interior and Exterior as project feature

Water And Wastewater - water usage assumes 20 g/person/day person/2500 sf

Construction Off-road Equipment Mitigation - per Rule 403

Area Mitigation - low VOC paint

Water Mitigation -

Operational Off-Road Equipment - operational equipment calculated separately

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00

tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	16
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	NumDays	440.00	140.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	45.00	20.00
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	10/20/2017	11/24/2017
tblConstructionPhase	PhaseEndDate	6/8/2018	11/24/2017
tblConstructionPhase	PhaseEndDate	2/24/2017	3/10/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	4/8/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	5/13/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	2/11/2017
tblGrading	AcresOfGrading	50.00	112.50
tblLandUse	LandUseSquareFeet	676,980.00	676,983.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	HHD	0.04	0.20
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDA	0.47	0.53
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.07	0.07

tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LDT2	0.17	0.19
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	LHD2	9.0390e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MCY	4.9210e-003	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MDV	0.16	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MH	2.9320e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	OBUS	1.1220e-003	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00
tblVehicleEF	SBUS	7.1200e-004	0.00

tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleEF	UBUS	1.3340e-003	0.00
tblVehicleTrips	ST_TR	2.59	1.68
tblVehicleTrips	SU_TR	2.59	1.68
tblVehicleTrips	WD_TR	2.59	1.68
tblWater	IndoorWaterUseRate	156,551,625.00	3,308,360.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	1,177.9010	1,177.9010	0.1504	0.0000	1,181.0585
Total											**0.0000**	**1,177.9010**	**1,177.9010**	**0.1504**	**0.0000**	**1,181.0585**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	1,177.9004	1,177.9004	0.1504	0.0000	1,181.0579
Total											**0.0000**	**1,177.9004**	**1,177.9004**	**0.1504**	**0.0000**	**1,181.0579**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328
Energy											0.0000	662.3754	662.3754	0.0284	6.9800e-003	665.1356
Mobile											0.0000	2,852.5293	2,852.5293	0.0685	0.0000	2,853.9678
Waste											129.1753	0.0000	129.1753	7.6340	0.0000	289.4902
Water											1.0496	12.3275	13.3771	0.1084	2.6600e-003	16.4783
Total											**130.2249**	**3,527.2633**	**3,657.4882**	**7.8394**	**9.6400e-003**	**3,825.1048**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328
Energy											0.0000	662.3754	662.3754	0.0284	6.9800e-003	665.1356
Mobile											0.0000	2,852.5293	2,852.5293	0.0685	0.0000	2,853.9678
Waste											129.1753	0.0000	129.1753	7.6340	0.0000	289.4902
Water											0.8397	9.8620	10.7017	0.0867	2.1300e-003	13.1813
Total											**130.0150**	**3,524.7978**	**3,654.8128**	**7.8177**	**9.1100e-003**	**3,821.8078**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.16**	**0.07**	**0.07**	**0.28**	**5.50**	**0.09**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	2/11/2017	3/10/2017	5	20	
3	Grading	Grading	3/11/2017	4/7/2017	5	20	
4	Building Construction	Building Construction	5/13/2017	11/24/2017	5	140	
5	Paving	Paving	5/13/2017	11/24/2017	5	140	
6	Architectural Coating	Architectural Coating	5/13/2017	11/24/2017	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,873,385; Non-Residential Outdoor: 624,462 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	277.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	525.00	205.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	105.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	36.6182	36.6182	0.0101	0.0000	36.8292
Total											**0.0000**	**36.6182**	**36.6182**	**0.0101**	**0.0000**	**36.8292**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	9.1247	9.1247	7.0000e-005	0.0000	9.1261
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4121	1.4121	7.0000e-005	0.0000	1.4136
Total											**0.0000**	**10.5367**	**10.5367**	**1.4000e-004**	**0.0000**	**10.5396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	36.6182	36.6182	0.0101	0.0000	36.8291
Total											**0.0000**	**36.6182**	**36.6182**	**0.0101**	**0.0000**	**36.8291**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	9.1247	9.1247	7.0000e-005	0.0000	9.1261
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4121	1.4121	7.0000e-005	0.0000	1.4136
Total											**0.0000**	**10.5367**	**10.5367**	**1.4000e-004**	**0.0000**	**10.5396**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	36.3154	36.3154	0.0111	0.0000	36.5491
Total											**0.0000**	**36.3154**	**36.3154**	**0.0111**	**0.0000**	**36.5491**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.6945	1.6945	9.0000e-005	0.0000	1.6963
Total											**0.0000**	**1.6945**	**1.6945**	**9.0000e-005**	**0.0000**	**1.6963**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	36.3153	36.3153	0.0111	0.0000	36.5490
Total											**0.0000**	**36.3153**	**36.3153**	**0.0111**	**0.0000**	**36.5490**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.6945	1.6945	9.0000e-005	0.0000	1.6963
Total											**0.0000**	**1.6945**	**1.6945**	**9.0000e-005**	**0.0000**	**1.6963**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	57.2739	57.2739	0.0176	0.0000	57.6424
Total											**0.0000**	**57.2739**	**57.2739**	**0.0176**	**0.0000**	**57.6424**

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.8827	1.8827	1.0000e-004	0.0000	1.8848
Total											**0.0000**	**1.8827**	**1.8827**	**1.0000e-004**	**0.0000**	**1.8848**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	57.2739	57.2739	0.0176	0.0000	57.6424
Total											**0.0000**	**57.2739**	**57.2739**	**0.0176**	**0.0000**	**57.6424**

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.8827	1.8827	1.0000e-004	0.0000	1.8848
Total											**0.0000**	**1.8827**	**1.8827**	**1.0000e-004**	**0.0000**	**1.8848**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	167.6354	167.6354	0.0413	0.0000	168.5018
Total											**0.0000**	**167.6354**	**167.6354**	**0.0413**	**0.0000**	**168.5018**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	278.1919	278.1919	2.0000e-003	0.0000	278.2339
Worker											0.0000	345.9511	345.9511	0.0177	0.0000	346.3235
Total											**0.0000**	**624.1430**	**624.1430**	**0.0197**	**0.0000**	**624.5574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	167.6352	167.6352	0.0413	0.0000	168.5016
Total											**0.0000**	**167.6352**	**167.6352**	**0.0413**	**0.0000**	**168.5016**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	278.1919	278.1919	2.0000e-003	0.0000	278.2339
Worker											0.0000	345.9511	345.9511	0.0177	0.0000	346.3235
Total											**0.0000**	**624.1430**	**624.1430**	**0.0197**	**0.0000**	**624.5574**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	144.8539	144.8539	0.0444	0.0000	145.7860
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**144.8539**	**144.8539**	**0.0444**	**0.0000**	**145.7860**

3.6 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	9.8843	9.8843	5.1000e-004	0.0000	9.8950
Total											**0.0000**	**9.8843**	**9.8843**	**5.1000e-004**	**0.0000**	**9.8950**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	144.8538	144.8538	0.0444	0.0000	145.7858
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**144.8538**	**144.8538**	**0.0444**	**0.0000**	**145.7858**

3.6 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	9.8843	9.8843	5.1000e-004	0.0000	9.8950
Total											**0.0000**	**9.8843**	**9.8843**	**5.1000e-004**	**0.0000**	**9.8950**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8728	17.8728	1.8900e-003	0.0000	17.9124
Total											**0.0000**	**17.8728**	**17.8728**	**1.8900e-003**	**0.0000**	**17.9124**

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	69.1902	69.1902	3.5500e-003	0.0000	69.2647
Total											**0.0000**	**69.1902**	**69.1902**	**3.5500e-003**	**0.0000**	**69.2647**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.8728	17.8728	1.8900e-003	0.0000	17.9124
Total											**0.0000**	**17.8728**	**17.8728**	**1.8900e-003**	**0.0000**	**17.9124**

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	69.1902	69.1902	3.5500e-003	0.0000	69.2647
Total											**0.0000**	**69.1902**	**69.1902**	**3.5500e-003**	**0.0000**	**69.2647**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	2,852.5293	2,852.5293	0.0685	0.0000	2,853.9678
Unmitigated											0.0000	2,852.5293	2,852.5293	0.0685	0.0000	2,853.9678

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1,137.33	1,137.33	1137.33	4,874,259	4,874,259
Total	1,137.33	1,137.33	1,137.33	4,874,259	4,874,259

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527950	0.073940	0.193966	0.000000	0.000000	0.000000	0.000000	0.204045	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	585.0650	585.0650	0.0269	5.5600e-003	587.3546
Electricity Unmitigated											0.0000	585.0650	585.0650	0.0269	5.5600e-003	587.3546
NaturalGas Mitigated											0.0000	77.3105	77.3105	1.4800e-003	1.4200e-003	77.7810
NaturalGas Unmitigated											0.0000	77.3105	77.3105	1.4800e-003	1.4200e-003	77.7810

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.44874e+006											0.0000	77.3105	77.3105	1.4800e-003	1.4200e-003	77.7810
Total												**0.0000**	**77.3105**	**77.3105**	**1.4800e-003**	**1.4200e-003**	**77.7810**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.44874e+006											0.0000	77.3105	77.3105	1.4800e-003	1.4200e-003	77.7810
Total												**0.0000**	**77.3105**	**77.3105**	**1.4800e-003**	**1.4200e-003**	**77.7810**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	2.04449e+006	585.0650	0.0269	5.5600e-003	587.3546
Total		**585.0650**	**0.0269**	**5.5600e-003**	**587.3546**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	2.04449e+006	585.0650	0.0269	5.5600e-003	587.3546
Total		**585.0650**	**0.0269**	**5.5600e-003**	**587.3546**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328
Unmitigated											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328
Total											**0.0000**	**0.0310**	**0.0310**	**9.0000e-005**	**0.0000**	**0.0328**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0310	0.0310	9.0000e-005	0.0000	0.0328
Total											**0.0000**	**0.0310**	**0.0310**	**9.0000e-005**	**0.0000**	**0.0328**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.7017	0.0867	2.1300e-003	13.1813
Unmitigated	13.3771	0.1084	2.6600e-003	16.4783

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.30836 / 0	13.3771	0.1084	2.6600e-003	16.4783
Total		**13.3771**	**0.1084**	**2.6600e-003**	**16.4783**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	2.64669 / 0	10.7017	0.0867	2.1300e-003	13.1813
Total		**10.7017**	**0.0867**	**2.1300e-003**	**13.1813**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	129.1753	7.6340	0.0000	289.4902
Unmitigated	129.1753	7.6340	0.0000	289.4902

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	636.36	129.1753	7.6340	0.0000	289.4902
Total		**129.1753**	**7.6340**	**0.0000**	**289.4902**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	636.36	129.1753	7.6340	0.0000	289.4902
Total		**129.1753**	**7.6340**	**0.0000**	**289.4902**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C
Cultural Resources Assessment

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

CULTURAL RESOURCES STUDY
for the
BLOOMINGTON DISTRIBUTION PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

Western Realco
500 Newport Center Drive
Newport Beach, California 92660
Contact: Jeremy Mape

Prepared by:

Adriane Dorrler, BA, and Micah Hale, PhD, RPA
DUDEK
605 Third Street
Encinitas, California 92024
Phone: 760.840.7556
Fax: 760.632.0164

SEPTEMBER 2016

Type of Study: Phase I Inventory
USGS Quadrangle: Fontana, California 1:24,000; T 1S, R 5W; Section 27
Area: Approximately 35-acres
Resources: P-36-060213; Ten newly identified built environment resources; Pacific Electric Railway Line
Key Words: CEQA, Community of Bloomington; Phase I inventory; P-36-060213; built environment; Pacific Electric Railway Line; survey; prehistoric isolate; historic building

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

1 INTRODUCTION 1
1.1 Project Description 1
1.2 Regulatory Context 7
1.2.1 State 7
1.2.2 Local 12
1.3 Report Organization 12

2 SETTING 15
2.1 Environment 15
2.2 Prehistoric Setting 16
2.2.1 Paleoindian (pre-5500 BC) 16
2.2.2 Archaic (8000 BC–AD 500) 18
2.2.3 Late Prehistoric (AD 500–1769) 18
2.2.4 Ethnohistoric 19
2.3 Historic Setting 21
2.3.1 Rancho Period (1824-1848) 21
2.3.2 Mormon Period (1848-1857) 22
2.3.3 Post Mormon Period (1857-Present) 22
2.3.4 The Community of Bloomington 23

3 PREVIOUS RESEARCH 25
3.1 Archaeological Literature and Records Search 25
3.1.1 South Central Coastal Information Center 25
3.2 Native American Coordination 27
3.3 Archival Research 28

4 METHODS 29
4.1 Field Methods 29

5 RESULTS 31
5.1 Survey Conditions 31
5.2 Previously Identified Cultural Resources 31
5.2.1 P-36-060213 31
5.3 Newly Identified Cultural Resources 32
5.3.1 Built Environment Resources 32

TABLE OF CONTENTS (CONTINUED)

Section **Page No.**

6 RECOMMENDATIONS.....33

7 REFERENCES.....35

FIGURES

1 Regional Map.....3
2 Vicinity Map.....5

TABLE

1 Previous Cultural Resources Studies Performed Within One-Mile of the Project Site.....25

APPENDICES

A SCCIC Records Search Results
B NAHC
C Resumes of Key Personnel

MANAGEMENT SUMMARY

Western Realco retained Dudek to prepare cultural resources documentation in support of the proposed Bloomington Distribution Project (project) located in the unincorporated community of Bloomington, San Bernardino County, California. The project proposes to construct a single 676,983-square-foot distribution building within an approximate 35-acre property. This report includes the identification of cultural resources within the project site and possible impacts to cultural resources based on current project specifications pursuant to the California Environmental Quality Act (CEQA). Specifically, this report: (1) describes the existing conditions of cultural resources within the project site in terms of archaeological resources and historic built environment resources; (2) discusses results of the Phase I pedestrian survey of the project site; and (3) provides cultural resources management recommendations for project planning.

Dudek requested a Native American Heritage Commission (NAHC) search of their Sacred Lands File (SLF) for the proposed project site. The SLF search "failed to indicate the presence of Native American cultural resources in the immediate project area."

As a result of the California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC), one previously recorded prehistoric isolate (P-36-060213) was identified within the project site. Additionally, newly discovered built environment resources consisting of ten historic-era buildings and the location of the previously extant Pacific Electric Railway Line, Riverside-Rialto segment were identified during archival research of the project site.

The intensive-level pedestrian survey was limited to the southeast quarter of the project site due to fenced in private residences and/or private commercial properties in the north half and southwest quarter of the project site. No previously recorded or newly discovered archaeological resources were identified during the pedestrian survey. No evidence of the previously recorded isolate P-36-060213 was found during the intensive-level pedestrian survey. The pedestrian survey confirmed that all ten historic-era buildings are extant. However, resource inspections were limited due to access restrictions. Because the details of the buildings were not accessible to the surveyor and information pertaining to the structural characteristics of the buildings could not be obtained, the resources were not formally recorded on State of California Department of Parks and Recreation Series 523 Forms (DPR forms). The pedestrian survey of the railway alignment uncovered no evidence of the railway line. The portion of the Pacific Electric Railway Line, Riverside-Rialto segment that runs through the project site is presumed destroyed.

In order to assess whether or not the proposed project will result in impacts to historical resources (as defined in CEQA Guidelines Section 15064.5), all historic-age buildings (i.e., over 45 years of age) should be recorded and evaluated in consideration of the California Register of Historical Resources (CRHR) eligibility criteria and integrity requirements. The evaluations should be conducted by a qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (CFR 36 Part 61). The location of the previously extant railway line is recommended not eligible for the CRHR, is not a "unique archaeological resource" under CEQA, and does not warrant further consideration. As isolates are not considered eligible for listing in the CRHR nor are they considered significant resources under CEQA, no further cultural considerations are recommended for previously recorded isolate P-36-060213.

1 INTRODUCTION

Western Realco retained Dudek to prepare cultural resources documentation in support of the proposed Bloomington Distribution Project (project) located in the unincorporated community of Bloomington, San Bernardino County, California. This report includes the identification of cultural resources within the project site and possible impacts to cultural resources based on current project specifications pursuant to the California Environmental Quality Act (CEQA). Specifically, this report: (1) describes the existing conditions of cultural resources within the project site in terms of archaeological resources and historic built environment resources; (2) discusses results of the Phase I pedestrian survey of the project site; and (3) provides cultural resources management recommendations for project planning.

1.1 Project Description

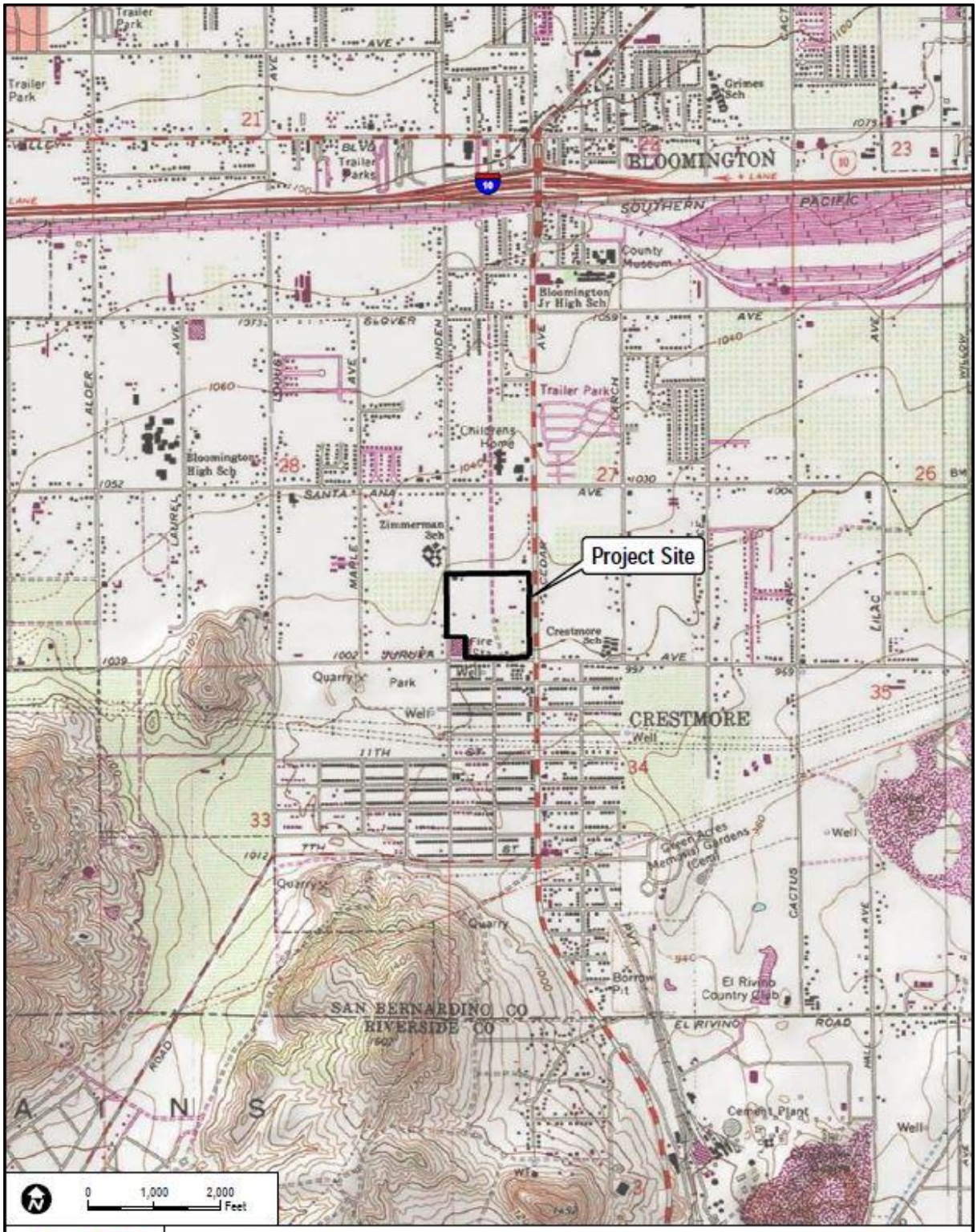
The project site is located within the unincorporated San Bernardino County area of Bloomington. Bloomington is located in between the Cities of Rialto and Fontana, just north of the San Bernardino and Riverside County line and approximately 1 mile south of Interstate 10 (Figure 1). The project site is located immediately west of Cedar Avenue, north of Jurupa Avenue, and east of Linden Avenue. It is within the U.S. Geological Survey (USGS) 7.5 minute map Fontana quadrangle, Section 27, Township 1 South, Range 5 West (Figure 2).

Western Realco is proposing to construct a single 676,983-square-foot distribution building within an approximate 35-acre property. The site would include two detention basins and landscaping along Cedar Avenue and Jurupa Avenue. There will be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. Truck access will be installed from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, 4 grade level ramps, and 110 dock high doors.

INTENTIONALLY LEFT BLANK

Project Site
Mojave
Rosamond
Barstow
Lancaster
Quartz Hill
Palmdale
Adelanto
Apple Valley
Victorville
Hesperia
Acton
Santa Clarita
Santa Paula
Simi Valley
Moorpark
Ventura
Camarillo
Thousand Oaks
Agoura Hills
Westlake Village
Port Hueneme
Glendale
Burbank
Los Angeles
Pasadena
Beverly Hills
Culver City
Alhambra
Vernon
Industry
Whittier
Duarte
Rancho Cucamonga
San Bernardino
Rialto
Highland
Colton
Fontana
Ontario
Pomona
Chino Hills
Rubidoux
Pedley
Norco
Riverside
Moreno Valley
Cherry Valley
Banning
Yucaipa
Crestline
Running Springs
Big Bear Lake
Yucca Valley
Joshua Tree
Twentynine Palms
Morongo Valley
Desert Hot Springs
El Segundo
Manhattan Beach
Torrance
Compton
Cerritos
Long Beach
Seal Beach
Rancho Palos Verdes
Anaheim
Santa Ana
Orange
Tustin
Huntington Beach
Irvine
El Toro
Coto De Caza
Aliso Viejo
San Juan Capistrano
Dana Point
San Clemente
Lake Elsinore
Perris
Sun City
San Jacinto
Hemet
Hemet
Idyllwild-Pine Cove
Rancho Mirage
Indio
La Quinta
Coachella
Wildomar
Temecula
Rainbow
Camp Pendleton North
Fallbrook
Bonsall
Hidden Meadows
Valley Center
Oceanside
Vista
San Marcos
Escondido
Carlsbad
Encinitas
Ramona
San Julian
Borrego Springs
Pacific Ocean
Santa Barbara County
Los Angeles County
Kern County
Ventura County
Los Angeles County
San Bernardino County
Riverside County
San Diego County
0 10 20 30 Miles
DUDEK
8674
FIGURE 1
Regional Map
WESTERN REALCO - BLOOMINGTON, CA

INTENTIONALLY LEFT BLANK



DUDEK

8674

SOURCE: USGS 7.5-Minute Series - Fontana Quadrangle.

FIGURE 2
Vicinity Map

WESTERN REALCO - BLOOMINGTON, CA

INTENTIONALLY LEFT BLANK

1.2 Regulatory Context

This section includes a discussion of the applicable state and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during construction of the proposed project.

As summarized below, the treatment of cultural resources located on the Project site is governed by state and local laws and regulations. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. For instance, state significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. As a whole, the laws and regulations seek to mitigate impacts on significant prehistoric or historic resources.

This project is not subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) because the project does not have a federal nexus for permitting or land administration. However, this report and all study methods and personnel meet and exceed Secretary of Interior's standards and guidelines for cultural resources.

1.2.1 State

The California Register of Historical Resources (PRC section 5020 et seq.)

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." (PRC section 5020.1(j).) In 1992, the California legislature established California Register "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." (PRC section 5024.1(a).)

The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places;
- California Registered Historical Landmarks from No. 770 onward;
- Those California Points of Historical Interest that have been evaluated by the California Office of Historic Preservation (OHP) and have been recommended to the State Historical Resources Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Individual historical resources;
- Historical resources contributing to historic districts;
- Historical resources identified as significant in historical resources surveys with significance ratings of Category 1 through 5 as defined on the California Department of Parks and Recreation's Form 523;
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

A resource is eligible for listing in the California Register if the State Historical Resources Commission determines that it is a significant resource if it (i) retains "substantial integrity," and (ii) that it meets any of the following National Register criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

(PRC section 5024.1(c).) Resources less than 50 years old are not considered for listing in the California Register, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see Cal. Code Regs., tit. 14, section 4852(d)(2)).

The California Register protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the California Register are nearly identical to those for the National Register of Historic Places (NRHP), and properties listed or formally designated as eligible for listing on the National Register are automatically listed on the California Register, as are the state landmarks and points of interest. The California Register also includes properties designated under local ordinances or identified through local historical resource surveys. The State Historic Preservation Officer maintains the California Register.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC section 21083.2(g): Defines "unique archaeological resource."
- PRC section 21084.1 and CEQA Guidelines section 15064.5(a): Define historical resources. In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC section 21074(a) defines "tribal cultural resources."
- PRC section 5097.98 and CEQA Guidelines section 15064.5(e): Sets forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource." (PRC section 21084.1; CEQA Guidelines section 15064.5(b).) If a site is either listed or eligible for listing in the California Register, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).) The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).)

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." (CEQA Guidelines section 15064.5(b)(1);

PRC section 5020.1(q).) In turn, the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

(CEQA Guidelines section 15064.5(b)(2).) Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4).) However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered.

Native American Historic Cultural Sites (PRC section 5097 et seq.)

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Heritage Commission to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the California Register.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (Cal. Repatriation Act), enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

California Health and Safety Code section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Heritage Commission within 24 hours (section 7050.5c). The Heritage Commission will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the Most Likely Descendant by the Heritage Commission. The Most Likely Descendant may recommend

means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans. .

1.2.2 Local

San Bernardino County Development Code 82.12 (Cultural Resources Preservation)

Under section 82.12 of the San Bernardino County Development Code, the County provides for the identification and preservation of important archaeological and historical resources.

Pursuant to section 82.12.020, specific identification of known cultural resources is indicated by listing in one or more of the following inventories:

1. California Archaeological Inventory
2. California Historic Resources Inventory
3. California Historical Landmarks
4. California Points of Historic Interest; and/or
5. National Register of Historic Places

Pursuant to section 82.12.030, application for a project proposed within the County defined Cultural Resources Preservation Overly shall include a report prepared by a qualified professional that determines through appropriate investigation the presence or absence of archaeological and/or historical resources on the project site and within the project area, and recommends appropriate data recovery or protection measures.

Bloomington Community Plan

The purpose and intent of the Bloomington Community Plan is to guide the future use and development of land within the Bloomington Community Plan area in a manner that preserves the character and independent identity of the community. Pursuant to San Bernardino County Development Code 82.23, the Community Plan was established to ensure that proposed development in the Community is in accordance with the specific development standards set forth by the County. The Bloomington Community Plan is mandated to follow the Cultural Resources Preservation regulations presented in the County Development Code 82.12.

1.3 Report Organization

Chapter 1 of this report includes a brief overview of the proposed project, its location, and regulatory setting. Chapter 2 describes the proposed project's environmental setting and provides

the relevant cultural/historic context in which the study was performed. Chapter 3 provides a review of the archival research conducted for this project including a review of records from the California Historical Resources Information System (CHRIS), a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, and requests for information from Native American Tribes and/or organizations located within the vicinity of the project. Chapter 4 discusses the methodology used during the Phase I inventory. Chapter 5 contains the results of the archival research and the intensive-level pedestrian survey. Chapter 6 provides cultural resources management recommendations for further project planning. Appendix A provides the records search results maps and a complete bibliography of all prior cultural resources studies occurring within 1-mile of the project site. Appendix B provides the results of the NAHC SLF search. Finally, résumés for key personnel can be found in Appendix C.

INTENTIONALLY LEFT BLANK

2 SETTING

2.1 Environment

The project site is in the San Bernardino valley with the San Bernardino Mountains approximately 9 miles to the north, La Loma Hills 2.7 miles to the southeast, Rattlesnake Mountain 0.6 mile to the south, and Mount Jurupa 1 mile to the southwest. The main water body in the vicinity is the Santa Ana River, which flows northeast to southwest approximately 2.5 miles southeast from the project site. The site is relatively flat with elevation ranging from 1,005 to 1,030 feet above mean sea level. There is no primary drainage on site.

Tujunga gravelly sandy loam and Tujunga loamy sand soils are mapped within the project site (USDA 2015). The description provided below regarding Tujunga series soils is summarized from NRCS (USDA 2015).

> The Tujunga series soils are located on alluvial flood plains derived from granitic sources and consist of deep and drained soils. Slopes with this soil range from 0 to 9%, with an annual mean temperature of 62°F and an annual mean precipitation of 16 inches. Tujunga soils occur at an elevation ranging from 5 to 4,300 feet. Geographically associated soils include Delhi soils as well as the Hanford, Soboba, and Grangeville soils.

Bloomington experiences a Mediterranean type climate with cool, wet winters and dry, hot summers. Average yearly precipitation is 10.7 inches. Average summer highs are around 92° Fahrenheit (°F) with average lows around 61°F. In the winter, average highs are 67°F with lows around 42°F (NOAA 2015).

There are three land covers/vegetation communities within the project site: nonnative grassland, agricultural, and developed/disturbed land. Non-native grassland typically occurs adjacent to roads or other developed areas where there has been some historic disturbance. Agricultural land is similar to non-native grassland and often contains some of the same weedy, introduced annuals including wild oat, bromes, black mustard, filaree, and Russian-thistle. Developed land consists of buildings, structures, homes, parking lots, paved roads, and maintained areas. Developed areas do not support native vegetation. Disturbed land refers to areas that are not developed yet lack vegetation, and generally are the result of severe or repeated mechanical perturbation.

There are 6.5 acres characterized as non-native grassland within the project site. This vegetation community has a dense vegetative cover dominated by common fiddleneck (*Amsinckia intermedia*), bromes, and London rocket (*Sisymbrium irio*). Agricultural land comprises 7.0 acres of the project site and serves as grazing fields for various livestock species inhabiting the area.

Developed/disturbed land occurs within a majority the project site for a total of 21.3 acres. Multiple residential homes and a junk yard are located within the project boundary. The residential yards contain ornamental trees including tamarisk (*Tamarix aphylla)*, Peruvian pepper trees (*Schinus molle)*, eucalyptus trees (*Eucalyptus* spp.), and tree tobacco (*Nicotiana glauca).*

2.2 Prehistoric Setting

Evidence for continuous human occupation in Southern California spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

2.2.1 Paleoindian (pre-5500 BC)

Evidence for Paleoindian occupation in the region is tenuous; our knowledge of associated cultural pattern(s) informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego, through the Mojave Desert, and beyond. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of ground stone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basined Stemmed point site (see Basgall et al. 2002). At MNO-679 and -680, ground stone tools were rare while finely made projectile points were common.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region

that possibly dates between 10,365 and 8200 BC (Warren et al. 2004). Termed San Dieguito (see also Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (see also Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

San Dieguito sites are rare in the inland valleys, with one possible candidate, RIV-2798/H, located on the shore of Lake Elsinore. Excavations at Locus B at RIV-2798/H produced a toolkit consisting predominately of flaked stone tools, including crescents, points, and bifaces, and lesser amounts of groundstone tools, among other items (Grenda 1997). A calibrated and reservoir corrected radiocarbon date from a shell produced a date of 6630 BC. Grenda (1997) suggested this site represents seasonal exploitation of lacustrine resources and small game, and resembles coastal San Dieguito assemblages and spatial patterning.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (see Basgall and Hall 1990).

2.2.2 Archaic (8000 BC–AD 500)

The more than 2,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in southern California. If San Dieguito is the only recognized Paleoindian component in the coastal southern California, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the region (see Hale 2001, 2009).

The Archaic pattern, which has also been termed the Millingstone Horizon (among others), is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (see Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurred until the bow and arrow was adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remained low. After the bow was adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decreased in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

2.2.3 Late Prehistoric (AD 500–1769)

The period of time following the Archaic and prior to Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (M. Rogers 1945; Wallace 1955; Warren et al. 2004); however, several other subdivisions continue to be used to describe various shifts in assemblage composition. In general this period is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. The fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean

and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400.

2.2.4 Ethnohistoric

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shipek 1978; Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; Philip S. Sparkman 1908; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005, p. 32) by recording languages and oral histories within the region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities.

It is important to note that even though there were many informants for these early ethnographies who were able to provide information from personal experiences about native life before the Europeans, a significantly large proportion of these informants were born after 1850 (Heizer and Nissen 1973); therefore, the documentation of pre-contact, aboriginal culture was being increasingly supplied by individuals born in California after considerable contact with Europeans. As Robert F. Heizer (1978) stated, this is an important issue to note when examining these ethnographies, since considerable culture change had undoubtedly occurred by 1850 among the Native American survivors of California.

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary

language families (Golla 2007). As the project site is in the San Bernardino area, the Native American inhabitants of the region would have generally spoken the Gabrieleño variety of Takic, although the Serrano variety would have likely been spoken as well, as the traditional boundary between the Serrano and Gabrielino groups is near the project site.

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations (Golla 2007, p. 80) A large amount of variation within the language of a group represents a greater time depth then a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (2007, p. 71). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

The tribes of this area have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, p. 74). These groups include the Gabrielino and Serrano. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010).

The project is located with the area associated with the Gabrielino, a name derived from the association with the San Gabriel Mission, who are also known as the Tongva. According to the archaeological record, they were not the first inhabitants of the Los Angeles basin but displaced indigenous Hokan speakers around 500 B.C. The Gabrielino shared boundaries with the Chumash to the west, the Tataviam to the north, Serrano to the northeast, the Cahuilla to the east, and the Luiseño and Juaneño to the southwest (Bean and Smith 1978; Kroeber 1925).

As with many Native groups, it is quite difficult to make population estimates for the Gabrielino, although one estimate gives village population ranges between 50 and 200 people for possibly more than 50 or 100 villages (Bean and Smith 1978). The arrival of the Spanish decimated Native peoples through disease and changed living conditions, leaving few Gabrielinos by the time ethnographic studies were conducted (Bean and Smith 1978). This makes it difficult to make definitive statements about their culture. The tribes of the region were organized into patrilineal clans or bands centered on a chief, each of which had their own territorial land or range where food and other resources were collected at different locations throughout the year. Place names were assigned to each territory, often reflecting common animals, plants, physical

landmarks, or cosmological elements that were understood as being related to that location. Marriages were sometimes arranged by parents or guardians, and chiefs occasionally had multiple wives (Bean and Smith 1978).

Shamanism was a major component in tribal life. Shamans, who derived their power through dreams or visions, served individual villages. They cured illness, using a variety of tools and plants. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related with spirits. These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Mourning ceremonies were similar throughout the region, generally involving and burning of the deceased's possessions, dancing and ritual wailing, followed by the burning of the deceased's remaining items a year after death (Bean and Smith 1978).

2.3 Historic Setting

The first European settlers to the San Bernardino Valley were missionaries from the Mission of San Gabriel, near the location of modern Los Angeles, who established the Estancia San Bernardino (also referred to as the "Asistencia") in 1819, though undocumented references indicate an earlier founding date of 1810 (Cataldo 2002). The location, chosen by the missionaries due to its signs of agricultural fertility, was located in the southern portion of the San Bernardino Valley at the last slopes of the foothills of the San Bernardino Mountains. Assisted by the Natives, the missionaries erected an "adobe building some eighty by forty yards in size, having substantial walls three feet in thickness, with floors of burnt brick, and thatched roofs of tules and flags" (Hale 1888). The building was so structurally sound that Edson D. Hale (1888) describing the remains fifty years after abandonment notes that "about 6 feet of all four walls still stood." With the help of the Native Americans in the area they diverted water from Mill Creek in the mountains giving the mission greater agricultural fertility (City of San Bernardino 2015).

2.3.1 Rancho Period (1824-1848)

Mexico established its independence from Spain in 1821, secured California as a Mexican territory in 1822, and became a federal republic in 1824. The Franciscan missions of California by this time had amassed considerable wealth in horses and livestock. Too valuable to be left to the missions, the Mexican Republic secularized the mission property in 1834 and confiscated their wealth (Starr 2007; Hale 1888). Juan B. Alvarado became Governor of the Territory in 1836 and began the process of subdividing the valley into large ranchos. It was then given to the Diego Sepulveda and three brothers named Lugo in 1842 (Cataldo 2002). They transformed it into "Rancho San Bernardino" and used around twenty acres for agriculture and used the rest of

the deeded land, which amounted to eight square leagues (35,000 acres), for cattle raising (Hale 1888; Cataldo 2002). During this period the population did not grow dramatically but the cattle raising industry became huge throughout the county. San Bernardino soon became an important trade post on the Spanish Trail (City of San Bernardino 2015).

2.3.2 Mormon Period (1848-1857)

In 1848 California joined the U.S. The head of the Lugo brothers, Don Antonio Maira Lugo, who had been discouraged the past few years from Native Americans and outlaws raiding and cattle stealing, sold the rancho to two leaders, Amasa Lyman and Charles Rich, of an approximately 500 person Mormon settlement expedition. Rich and Lyman in turn sold the land to the Mormon settlers collectively in for the price of $77,500 (San Bernardino Historical Society 2015; Hale 1888). The settlers were sent to California by Mormon leader Brigham Young in order to create a Mormon outpost. Young desired to create a Mormon outpost closer to the Pacific coast, hoping that a Pacific route to Salt Lake City would be more efficient for European converts than the overland route from New York City (Cataldo 2002; Hale 1888; San Bernardino Historical Society 2015). Fearing further Native and outlaws attacks, the Mormons fortified the rancho, renamed it "Fort San Bernardino," and created a stockade centered at the location of the current San Bernardino County Courthouse (Cataldo 2002). No attacks came and the stockade was dismantled after a year. The Mormon town adhered to strict temperance, no drinking or gambling. The Mormons increased agriculture in the area planting 3,000 acres of grain. They also increased infrastructure including a gristmill and a road to the mountains leading to a saw mill (Hale 1888). The city grew rapidly until it was incorporated as the City of San Bernardino with a population of 1,200 in 1857 (City of San Bernardino 2015).

2.3.3 Post Mormon Period (1857-Present)

In the same year San Bernardino was incorporated as a city, the Utah War broke out between the Mormon settlers in Utah and the U.S. Government forcing Brigham Young to recall many of the Mormons in San Bernardino back to Utah. Approximately 60 percent of the Mormon population left including many of the older leadership leaving the city in leadership disarray (Cataldo 2002). Prices for plots of land dropped and enticed many other settlers from the east with the promise of land for sale as cheap as a horse and wagon (Cataldo 2002). The cheap land and settlers using it as a starting point to travel to gold mines along the Colorado River during the 1862-1864 gold rush cause the population to rise slowly but steadily (Cataldo 2002). The years following 1870 were marked by the beginnings of fruit farms in the San Bernardino Valley as a new profitable industry. The Santa Fe, Union Pacific, and Southern Pacific Railways made San Bernardino a major transportation hub for Southern California in the last years of the 19th Century and further invigorated the city. In 1886, the Santa Fe Railway connected the city to the transcontinental

railways causing a population explosion from eastern settlers travelling west (City of San Bernardino 2015). The population of 7,786 recorded in 1880 increased to 29,415 by 1888 (Hale 1888). While the last years of the 19th Century display substantial growth for the city, it suffered a catastrophic fire on December 29, 1897. The fire started from a workman tipping a lamp in a lumber mill in the city. Almost immediately the blaze became uncontrollable and high winds spread the fire throughout downtown (Thompson 2007; Sacramento Daily Union 1897). The city recovered quickly after the fire and from 1900 to 1910 the population doubled (City of San Bernardino 2015). The population continued to rise throughout the 20th Century and more commercial enterprises, especially in the second half of the century. Richard and Maurice McDonald, immigrants from Ireland, found the first McDonald's restaurant chain establishment in the city in 1940. A large boost occurred during World War II when Norton Air Force Base was established near downtown San Bernardino. By the summer of 1941 it began training the needs for a 30,000 pilot training program. It became a repair and maintenance facility for aircraft as the war continued. After the war ended it continued to be used for maintenance and also support logistics for missile programs until its closure in 1994 (Norton Air Force Base 2015).

2.3.4 The Community of Bloomington

The following historical information is adopted from the *Bloomington Community Plan* (County of San Bernardino 2007). The Bloomington Community Plan presents the history of Bloomington and includes the important periods, events, and patterns of development for this community.

> Bloomington was originally developed as part of the land holdings of the Semi-Tropic Land and Water Company which was formed in 1887. In 1907, the Riverside Portland Cement Company built a large plant near Crestmore and to provide transportation for employees built a standard gauge railroad to Riverside. On May 20th, 1911 the line was opened to Bloomington. The original community, known as Crestmore, is generally located between Locust Avenue and Larch Avenue, south of Jurupa Avenue, extending to the County line. The Pacific-Electric Crestmore Line (Riverside-Rialto) provided local service for many years. The Semi-Tropic Land and Water Company laid out the town sites of Bloomington, Rialto, Fontana, and Sansevaine. The town site for Bloomington, after being surveyed in April, 1888, was bounded on the north by Valley Boulevard, on the south by Slover Avenue, on the east by Larch Avenue, and on the west by Linden Avenue. Presently, part of the community is still rural and many residents continue to keep and raise animals.

INTENTIONALLY LEFT BLANK

3 PREVIOUS RESEARCH

3.1 Archaeological Literature and Records Search

3.1.1 South Central Coastal Information Center

Dudek Archaeologist Adriane Dorrler conducted a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC) on October 22, 2015 for the proposed project site and surrounding one-mile radius (Confidential Appendix A). This search included their collection of mapped prehistoric, historical and built-environment resources, Department of Parks and Recreation (DPR) Site Records, technical reports, archival resources, and ethnographic references. Additional consulted sources included the NRHP, California Inventory of Historical Resources/CRHR and listed OHP Archaeological Determinations of Eligibility, California Points of Historical Interest, California Historical Landmarks, and Caltrans Bridge Survey information.

Previously Conducted Cultural Resources Studies

SCCIC records indicate that no previous cultural resources investigations have been conducted within the proposed project site. At least 28 studies have been conducted outside but within one-mile of the project site, the majority of which occurred within the City of Fontana and the town of Crestmore (Table 1). Confidential Appendix A provides the records search results maps and a complete bibliography of all prior cultural resources studies occurring within 1-mile of the project site.

Table 1
Previous Cultural Resources Studies Performed Within One-Mile of the Project Site

Author	Year	Report	Title
Smith, Gerald A.	1942	SB-00015	Traces of Ancient Man at Bloomington, California
Harris, Ruth D.	1976	SB-00357	Archaeological-Historical Resources Assessment of Lots 10-14; Block 58, City of Crestmore
Hearn, Joseph E.	1976	SB-00388	Archaeological-Historical Resources Assessment of Approximately 70 Acres in the Crestmore Area
Hearn, Joseph E.	1976	SB-00439	Archaeological-Historical Resources Assessment of Bloomington Park and Recreation District-Two Locations
Foster, John M. and Roberta S. Greenwood	1985	SB-01499	Cultural Resources Overview: California Portion, Proposed Pacific Texas Pipeline Project
Lerch, Michael K.	1987	SB-01651	Negative Resource Field Reconnaissance: Tentative Tract 12353, Bloomington
Padon, Beth	1987	SB-01731	A Cultural Resource Assessment, Fontana Estates Project, San Bernardino County

Table 1
Previous Cultural Resources Studies Performed Within One-Mile of the Project Site

Author	Year	Report	Title
Parr, Robert E.	1988	SB-01771	Environmental Impact Evaluation: An Archaeological Assessment of Tentative Tract 10783, Near the city of Fontana in Southwestern San Bernardino County, California
Foster, John M., J. J. Schmidt, C. A. Weber, G. R. Romani, and R. S. Greenwood	1991	SB-02853	Cultural Resource Investigation: Inland Feeder Project, MWD of Southern California
Love, Bruce	2000	SB-03586	Ontario to Colton Pipeline, San Bernardino County, California 26PP
Duke, Curt	1999	SB-03597	Cultural Resource Assessment for PBMS Facility CM 676-06, San Bernardino County, California, 4PP
Budinger, Fred	2001	SB-03999	Verizon Site Larch, Bloomington, California, 9PP
Hogan, Michael	2003	SB-04000	Archaeological Monitoring of Earth-Moving Activities: Green Acres Memorial Park in the Community of Crestmore, San Bernardino County, California 2PP
Dice, Michael	2004	SB-04370	Cultural/Paleontological Survey & Monitoring for the Young Homes Cedar Rand Crestmore Project (Tract 15836), San Bernardino County, California, 41PP
Kyle, Carolyn	2004	SB-04375	Cultural Resource Assessment for AT&T Wireless Facility 950-003-035, Located at 10974 Cedar Ave, City of Bloomington, San Bernardino County, California, 23PP
Wetherbee, Matthew and Sarah Siren	2006	SB-05064	A Phase I Cultural Resources Inventory and a Paleontological Assessment for the 25-Acrea Bloomington Estates Project
Wetherbee, Matthew and Sarah Siren	2006	SB-05065	A Phase I Cultural Resources Inventory and a Paleontological Assessment for the 34-Acrea Bloomington Estates Project
Wetherbee, Matthew and Sarah Siren	2006	SB-05066	A Phase I Cultural Resources Inventory and a Paleontological Assessment for the 30-Acrea Bloomington Estates Project
Aislin-Kay, Marnie	2005	SB-05643	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate CM-676-01 (ES-039-01) Green Acres, 18878 7th Street, Bloomington, San Bernardino County, California
McKenna, Jeanette A.	2008	SB-05972	A Cultural Resources Investigation for the Proposed Slover Avenue Improvements from West of Laurel Avenue to Maple Avenue in the Community of Bloomington, San Bernardino County, California
Bonner, Wayne H. and Sarah A. Williams	2008	SB-06127	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate IE04932C (SCE-Locust), 11430 Locust Avenue, Bloomington, San Bernardino County, California
Ashkar, Shahira	1999	SB-06516	Cultural Resource Inventory Report for Williams Communications, Inc., Proposed Fiber Optic System Installation Project, Los Angeles to Riverside, Los Angeles, Riverside, and San Bernardino Counties
McKenna, Jeanette A.	2009	SB-06532	A Supplemental and Comprehensive Cultural Resources Investigation for the Proposed Slover Avenue Improvements Project Between Tamarind Avenue and Cedar Avenue in Bloomington, San Bernardino County, California

Table 1
Previous Cultural Resources Studies Performed Within One-Mile of the Project Site

Author	Year	Report	Title
Sander, Jay K.	2010	SB-06719	Archaeological Survey Report for Southern California Edison's Pole Replacement Project: Highgrove-Corona 115kV Circuit, San Bernardino and Riverside Counties, California
Billat, Lorna	2012	SB-07184	Archaeological Assessment Report for Excel/MLAX04226A Wireless Facility located at 2353 South Cactus Avenue, Bloomington in San Bernardino County, California
Brunzell, David	2013	SB-07393	Cultural Resources Assessment; West Valley Logistics Center Project, City of Fontana, San Bernardino County, California
Puckett, Heather R.	2013	SB-07513	Byme, 10720 Locust Avenue, Bloomington, California 92316
Ballester, Daniel	2014	SB-07581	Archaeological and Paleontological Monitoring of Earth-Moving Activities, FedEx Ground Package System Project, City of Rialto, San Bernardino County, California

Previously Recorded Cultural Resources

According to the SCCIC records search, there is only one previously recorded cultural resource located within the proposed project site – P-36-060213. This prehistoric isolate was originally recorded in 1939 and consists of a projectile point. The San Bernardino County Museum Archaeological Site Survey Record for P-36-060213 does not mention if the isolate was collected.

An additional 34 cultural resources have been previously identified outside the project site, but within the one-mile radius. These resources consist of four prehistoric sites, including one temporary camp site, two bedrock milling sites, and a petroglyph panel; one historic archaeological site consisting of a refuse dump, cistern and concrete foundation; and 29 built environment resources consisting of 21 historic-era residences, 2 historic-era commercial buildings, Bloomington Middle School, Bloomington Congregational Church, El Rivino Country Club, and three California Points of Historical Interest including Bloomington Garage, San Bernardino County Museum and the San Bernardino-Sonora Road. Confidential Appendix A provides the records search results maps and DPR forms of all previously recorded cultural resources identified within 1-mile of the project site.

3.2 Native American Coordination

Dudek initiated Native American coordination for this project on October 19, 2015. As part of the process of identifying cultural resources within or near the project site, Dudek contacted the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File (SLF). The NAHC emailed a response on November 5, 2015 (Appendix B), and stated that the

Sacred Land File search "failed to indicate the presence of Native American cultural resources in the immediate project area."

3.3 Archival Research

Historic maps and aerial photos were consulted to further understand the development of the project site. Two roads characterize the project site as reviewed on the 1901 through 1938 USGS San Bernardino 15-minute series quadrangle. The roads are not seen on the 1938 historic aerial photograph – the earliest available aerial photograph of the project site (Historic Aerials 2015). The project site in 1938 was dominated by orchards. Five structures (presumed residences) are seen in the northwest, northeast, and southeast corners of the project. The Pacific-Electric Railway Line, Riverside-Rialto segment cuts through the center of the project site. Four of the five structures are confirmed on the 1943 USGS Fontana 7.5-minute quadrangle, as well as the Pacific Electric Railway Line. Although the Railway Line appears on the 1943 topographic map, according to Electric Railway Historical Association of Southern California (accessed 2015), the Riverside-Rialto segment was abandoned in 1940. The 1948 historic aerial shows a slight decrease in the amount of orchard within the project site; the five structures are still present; and the Pacific Electric Railway Line has been dismantled (Historic Aerials 2015). The railway line does not show on the 1955 USGS Fontana 7.5-minute quadrangle; the total number of structures on the project site increases to ten (with the original five still standing); and the percentage of orchard on the project site continues to decline. These conditions remain relatively consistent through 1966 (Historic Aerials 2015). However, the late 1960's saw a surge of development within the project site. Only a quarter of the project site was used for orchards; the number of structures doubled to 16 presumed residences (all the originals still stand) (Historic Aerials 2015); and by 1969, the Fontana 7.5 minute quadrangle showed a dirt road where the former railway line once traveled. According to the 1980 and 1985 Fontana quadrangles, a second development surge occurred in the 1980's with a total of 21 constructed residences on the project site. The project site took the shape it has today by 2002 (Historic Aerials 2015). None of the orchards remain, however, half of the project site is undeveloped agricultural land; the former railway line remains an established dirt road; and all the original structures seen on the 1938, 1959, and 1966 historic aerials are still standing.

4 METHODS

4.1 Field Methods

Dudek Archaeologist Adriane Dorrler conducted the intensive-level pedestrian survey on October 22, 2015 using standard archaeological procedures and techniques. The intensive-level survey methods consisted of a pedestrian survey conducted in parallel transects spaced no more than 10 meters apart over the accessible areas of the project site. Areas that were inaccessible due to private residences and fenced in junk yards and agriculture fields were visually inspected from a distance. Within each transect, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. The location of previously recorded isolate P-36-060213 was intensively surveyed in an attempt to relocate the artifact. Attempts were made to document the historic-era buildings on the project site. However, the buildings were set back on private property and access was restricted. It was possible to visually confirm that all ten structures are extant. However, formal recordation of the buildings was not possible as the details of the buildings were obscured by one or more of the following: vegetation, fencing, and junk yard debris.

Ms. Dorrler took detailed notes and photographs of the surroundings. All fieldwork was documented using field notes, digital photography, a Global Positioning System (GPS) receiver with sub-meter accuracy, iPad technology with close-scale field maps, and aerial photographs. Location-specific photographs were taken using an Apple 3rd Generation IPAD equipped with 8 MP resolution and georeferenced PDF maps of the project site. Accuracy of this device ranged between 3 meters and 10 meters. All field notes, photographs, and records related to the current study are on file at Dudek's Riverside, California office.

INTENTIONALLY LEFT BLANK

5 RESULTS

5.1 Survey Conditions

The general vicinity surrounding the project site is developed with a mix of residential and rural residential uses. Single-family residential development occurs immediately adjacent to the site on the south and west. Open agricultural fields are directly north and northeast from the project site; an elementary school is to the northwest; Cedar Avenue runs directly along the eastern side of the site, with Jurupa Avenue along the south side and Linden Avenue along the west side of the site. Commercial property and open fields are east of the site, on the east side of Cedar Avenue.

The intensive-level pedestrian survey was limited to the southeast quarter of the project site within an open field and the central north-south running dirt road that bisects the project site east-west. The north half of the project was inaccessible due to fenced in private residences and/or private commercial properties. The southwest quarter of the project site, while consisting of agricultural land, was also fenced in and inaccessible as private property. The numerous standing structures on the project site were only visible from a distance as fences prohibited access, and thick vegetation obscured visual inspection thus preventing further investigation.

Regardless of the survey limitations, a review of historic aerials shows that the project site has been routinely disturbed for agricultural purposes for nearly a century. The southern half of the project showed recent evidence of disking and land grading/pushing. Modern refuse dumps were scattered throughout the southeastern quarter of the project site. Ground visibility throughout the southern half of the project was generally good with ankle high non-native grassland partially obscuring the ground surface. Equipment, supplies, and inventory from junkyards, salvage yards, and a commercial apiary obscured the ground surface in the northern half of the project site.

No previously recorded or newly discovered archaeological resources were identified during the pedestrian survey. Ten historic-era buildings and the location of the previously extant Pacific Electric Railway Line, Riverside-Rialto segment were identified during the archival review of the project site.

5.2 Previously Identified Cultural Resources

5.2.1 P-36-060213

The location of previously recorded prehistoric isolate P-36-060213 was inspected in an attempt to relocate the artifact. No evidence of the isolate was uncovered during the intensive-level pedestrian survey. The isolate was originally recorded in 1939, and the location of the isolate as mapped has

been extensively tilled for nearly a century. As a result of this study, P-36-060213 is presumed displaced from its original location, destroyed, or collected upon its initial discovery in 1939.

5.3 Newly Identified Cultural Resources

5.3.1 Built Environment Resources

Archival research revealed ten historic-era buildings located on the project site. Five buildings are shown on the 1938 historic aerial photograph, and an additional three are introduced on the 1959 historic aerial (Historic Aerials 2015). During the pedestrian survey, visual inspection of the buildings from afar confirmed that they are extant. However, closer inspection to gather details about the individual structures was not possible due to the restricted access to private property and obscured visibility of the structures. Because of the inability to properly document the buildings through visual inspection, DPR forms were not prepared for the historic-age buildings.

The location of the previously extant Pacific Electric Railway Line, Riverside-Rialto segment (currently a dirt road) was inspected for any evidence of the existing railway. The Pacific Electric Railway was created in 1901 and serviced southern California as a privately owned mass transit system until 1961 (Electric Railway Historical Association of Southern California 2015). The Riverside-Rialto segment (the Crestmore Line) crossed through the project site from 1911 until 1940 to "serve the large Riverside Portland Cement Company plant near Crestmore" (Electric Railway Historical Association of Southern California 2015). A review of historic aerial photographs and topographic maps shows that the integrity of the railway line has been compromised. By 1980, the original alignment was altered and modern improvements were made to the line through grading, widening, and maintenance for use as an access road (Historic Aerials 2015). The pedestrian survey of the alignment uncovered no evidence of the railway line. The portion of the Pacific Electric Railway Line, Riverside-Rialto segment that runs through the project site is presumed destroyed.

6 RECOMMENDATIONS

The Phase I cultural resources inventory (including the results of the records search and pedestrian survey) identified ten historic-era buildings, the former location of the Pacific Electric Railway Riverside-Rialto segment (no longer extant), and a previously identified prehistoric isolate within the project site.

A review of modern and historic aerial photographs and historic maps indicates that there are at least ten historic-age buildings/structures within the project site. The records search results indicate that these buildings have not been previously recorded or evaluated. In order to assess whether or not the proposed project will result in impacts to historical resources (as defined in CEQA Guidelines Section 15064.5), all historic-age buildings (i.e., over 45 years of age) should be recorded and evaluated in consideration of CRHR eligibility criteria and integrity requirements. The evaluations should be conducted by a qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (CFR 36 Part 61).

The portion of the Pacific Electric Railway Line that intersects the project site has been altered to the point of destruction. No remnants of the railway line were observed during the pedestrian survey. The location of the previously extant railway line is recommended not eligible for the CRHR, is not a "unique archaeological resource" under CEQA, and does not warrant further consideration.

Previously recorded prehistoric isolate P-36-060213 was not relocated during the pedestrian survey. As isolates are not considered eligible for listing in the CRHR nor are they considered significant resources under CEQA, no further cultural considerations are recommended for this resource.

INTENTIONALLY LEFT BLANK

7 REFERENCES

16 U.S.C. 470–470x-6. National Historic Preservation Act of 1966, as amended.

36 CFR 60. National Register of Historic Places.

36 CFR 800.1–800.16 and Appendix A. Protection of Historic Properties.

48 FR 44720–44726. "The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act." April 24, 1998.

Abrams, L. 1923 *Illustrated Flora of the Pacific States*. Vol. IV. Stanford University Press, Stanford, California.

Atkins Engineering. 2011 Environmental Report for the Palm/Industrial Distribution Center (SCH#2007081029) Vol. I Draft EIR. Prepared for City of San Bernardino, Community Development Department, San Bernardino, California.

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Basgall, M. E., and M. Hall, 1990. Adaptive Variation in the North-Central Mojave Desert. Paper Presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Bean, L.J., and C.R. Smith, 1978. Gabrielino. In *California*, edited by Robert F. Heizer, pp. 538-548. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Boscana, G. 1846. "Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In Life in California, by Alfred Robinson, 227–341. New York, New York: Wiley & Putnam.

Burwasser, George J. 2007. *Preliminary Geotechnical Investigation: Proposed 682K Distribution Building, Southeast Corner Palm Avenue and Industrial Parkway, San Bernardino, California.* PBS&J, Sacramento, California. Prepared for IDS Real Estate Group, Los Angeles, California.

Byrd, Brian F., and Seetha N. Reddy, 2002. Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms. In *Catalysts to Complexity: Late Holocene Societies of the California Coast*, edited by Jon M. Erlandson and Terry L. Jones, pp. 41-62. Cotsen Institute of Archaeology, University of California, Los Angeles.

Cataldo, Nick. 2002. *Images of America: San Bernardino, California.* San Francisco, California: Arcadia Publishing.

City of San Bernardino. 2015. History of San Bernardino. Electronic Document. http://www.ci.san-bernardino.ca.us/about/history/history of_san_ bernardino_%28short_version%29.asp accessed on July 10, 2015.

Citytowninfo.com http://www.citytowninfo.com/places/california/san-bernardino. Accessed September 17, 2007.

Comeau, B. 2015. *Archaeological Evaluation Results for PA-SL-1 for the Palm Avenue Distribution Center, City of San Bernardino, California*. Submitted to the City of San Bernardino.

County of San Bernardino. 2007. "Bloomington Community Plan." *County of San Bernardino 2007 General Plan*. Accessed October 26, 2015. http://www.sbcounty.gov/Uploads/ lus/GeneralPlan/FINALGP.pdf

Davis, E.L. (editor). 1978. *The Ancient Californians: Rancholabrean Hunters of the Mohave Lakes Country*. Natural History Museum of Los Angeles County, Science Series No. 29.

Eerkens, J.W. 2001. "The Origins of Pottery among Late Prehistoric Hunter-Gatherers in California and the Western Great Basin." Unpublished PhD dissertation; University of California, Santa Barbara.

ERHA.org. 2015. "The Electric Railway Historical Association of Southern California". Access October 2015 http://www.erha.org/index.htm.

Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.

Geiger, M., and C. W. Meighan. 1976. As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813-1815. Santa Barbara, California: Santa Barbara Mission Archive Library.

Giambastiani, M.A., and M.E. Basgall. 2000. *Phase II Cultural Resource Evaluation for Sites CA-KER-4773/H and CA-KER-2016 in the Bissell Basin, Edwards Air Force Base, California*. Prepared for Department of the Army Corps of Engineers, Sacramento.

Golla, V. 2007. "Linguistic Prehistory." In California Prehistory: Colonization, Culture, and Complexity, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.

Grenda, D. R. 1997. *Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore: Archaeological Investigations at a Stratified Site in Southern California.* Statistical Research, Inc. Technical Series 59. Tucson, Arizona.

Gross, T.G. and M. Robbins-Wade. 2008. "Settlement Pattern and Predictive Modeling of Site Locations." In: *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*, pp. 299-331. Carlsbad, California: ASM Affiliates.

Hale, Edson D. 1888. *The County of San Bernardino, California, and its principal city.* New York, New York: Columbia College in the City of New York.

Hale, M. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's thesis; California State University, Sacramento.

Hale, M. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.

Hale, M. and Mark S. Becker. 2006. *From the Coast to the Inland: Prehistoric Settlement Systems Along the Las Pulgas Corridor, Camp Pendleton, California*. Prepared for Department of the Navy NAVFAC.

Hale, M., and B. Comeau. 2010. *Limited Archaeological Excavations at SDI-4669 (SDM-W-12A) In Advance of Geotechnical Coring, University House Rehabilitation Project, University of California at San Diego, La Jolla, California*. Prepared for IS Architecture and UC San Diego.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." Smithsonian Miscellaneous Collections 92(4).

Hector, S.M. 2006. Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California. Prepared for the City of San Diego.

Heizer, R. 1978. "Introduction." In California, edited by R.F. Heizer, 1–6. Handbook of North American Indians, Vol. 8, edited by W.C. Sturtevant. Washington, D.C.: Smithsonian Institution.

Heizer, R. and K.M. Nissen. 1973. The Human Sources of California Ethnography. Berkeley, California: University of California Archaeological Research Facility, Berkeley.

HistoricAerials.com. 2015. Accessed October 2015. http://www.historicaerials.com/aerials.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Non-Game Heritage Program, State of California Department of Fish and Game, Sacramento, California.

Jefferson, G.T., 1991, A catalogue of late Quaternary vertebrates from California; Part Two, mammals. Natural History Museum of Los Angeles County Technical Reports, No. 7.

Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." Journal of California and Great Basin Anthropology 26:33–64.

Jurich, Denise M. 2007. *Archaeological Survey Report for the Palm Avenue Distribution Center.* Prepared for Hurd Trust c/o IDS Real Estate Group, Los Angeles, California. Sacramento, California: PBS&J.

Kroeber, A. 1925. Handbook of the Indians of California. Washington D.C.: Smithsonian Institution.

Laylander, D. 2000. Early Ethnography of the Californias, 1533-1825. Salinas, California: Coyote Press Archives of California Prehistory.

Laylander, D. 2010. "Linguistic Prehistory." Research Issues In San Diego Prehistory. Accessed August 31, 2012. http://www.sandiegoarchaeology.org/Laylander/Issues /index.htm.

Lightfoot, K.G. 2005. *Indians, missionaries, and merchants: the legacy of colonial encounters on the California frontiers.* Berkeley, California: University of California Press.

McLeod, S.A., 2015. Vertebrate Paleontology Records Check for paleontological resources for the proposed Rancho Cucamonga Project, Dudek Project No. 9020, near Rancho Cucamonga, San Bernardino County, project site, 2 pp.

Morton, D.M., and Miller, F.K., 2003. Preliminary geologic map and digital database of the San Bernardino 30' x 60' Quadrangle, California: U.S. Geological Survey, Open-File Report 03-293, 1 sheet, 190 p.

NOAA (National Oceanic Atmospheric Administration). 2015. National Climatic Data Center. http://www.ncdc.noaa.gov/data-access.

Norton Air Force Base. 2015. Norton Air Force Base Museum History. Electronic Document. http://www.nafbmuseum.org/history/ accessed on July 10, 2015.

Parker, P.L. and King, T.F. 1998. Guidelines for Evaluating and Documenting Traditional Cultural Properties. *National Register Bulletin 38.* US Dept. of the Interior, National Park Service, Washington.

Reynolds, S.F.B., and R.L. Reynolds, 1991. The Pleistocene beneath our feet: near-surface Pleistocene fossils in inland southern California basins. In M.O. Woodburne, S.F.B. Reynolds, and D.P. Whistler (eds.), Inlands Southern California: the last 70 million years. Redlands: San Bernardino County Museum Special Publication 38(3&4), p. 41-43.

Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.

Sacramento Daily Union. 1897. "Big Fire at San Bernardino." *Sacramento Daily Union, Vol. 94, Number 130, December 30, 1897.* Electronic Document. http://cdnc.ucr.edu/cgi-bin/cdnc?a=d&d=SDU18971230.2.87&cl=search&srpos=225&dliv=none&e=-------en-logical-20--221-byPU---bernardino-all--- accessed on July 10, 2015.

Sawyer, J.O., and T. Keeler-Wolf 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, California.

Sawyer, J.O., and J.D. Stuart 2001. *Trees and Shrubs of California*. University of California Press, Berkeley, California.

Schaefer, J. 2000. *Archaeological Investigations at a Protohistoric Fish Camp on the Receding Shoreline of Ancient Lake Cahuilla, Imperial County, California*. ASM Affiliates. Prepared for Imperial Irrigation District, Imperial, California.

Schiffer, M.B. 1987. *Formation Processes of the Archaeological Record*. Albuquerque, New Mexico: University of New Mexico Press.

Scott, E. 2010. Extinctions, scenarios, and assumptions: changes in the latest Pleistocene large herbivore abundance and distribution in western North America. In E. Scott and G. McDonald (eds.), Faunal dynamics and extinction in the Quaternary: Papers honoring Ernest L. Lundelius, Jr. Quaternary International 217: 225-239.

Sparkman, Philip S. 1908. The Culture of Luiseño Indians. *University of California Publications in American Archaeology and Ethnography* 8(4): 187-234.

Springer, K., E. Scott, J.C. Sagebiel, and L.K. Murray, 2009. The Diamond Valley Lake local fauna: late Pleistocene vertebrates from inland southern California. In L.B. Albright III (ed.), Papers on geology, vertebrate paleontology, and biostratigraphy in honor of Michael O. Woodburne. Museum of Northern Arizona Bulletin 65:217-235.

Springer, K., E. Scott, J.C. Sagebiel, and L.K. Murray, 2010. Late Pleistocene large mammal faunal dynamics from inland southern California: the Diamond Valley Lake local fauna. In E. Scott and G. McDonald (eds.), Faunal dynamics and extinction in the Quaternary: Papers honoring Ernest L. Lundelius, Jr. Quaternary International 217: 256-265.

Starr, Kevin, 2007. *California: A History*. New York, New York: Modern Library Publications.

Thompson, Richard D. 2007. Fire Department Saves the City of San Bernardino. City of San Bernardino Historical and Pioneer Society Library News. Electronic Document. http://static1.1.sqspcdn.com/static/f/721507/20618741/1350156817373/Library+News+Sep+2007.pdf?token=42vC%2BsbPqdReh5rghfBP59db2No%3D accessed July 10, 2015.

USDA (U.S. Department of Agriculture).2015. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed October 2015.

Warren, Claude N. 1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams, pp. 1-14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

Warren, C.N. 1984. The Desert Region. In *California Archaeology*, by M.J. Moratto, pp. 339-430. Academic Press, Orlando, Florida.

Warren, C.N. 1986. *Fort Irwin Historic Preservation Plan*, vol. *2, The Research Overview*. National Park Service, U.S. Department of the Interior.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

Waters, M.R. 1992. *Principles of Geoarchaeology: A North American Perspective*. Tucson, Arizona: University of Arizona Press.

White, Raymond. 1963. Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48:91-194. Berkeley.

INTENTIONALLY LEFT BLANK

APPENDIX A (CONFIDENTIAL)

SCCIC Records Search Results

APPENDIX B

NAHC

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Bloomington Distribution Project (8674)

County: San Bernardino

USGS Quadrangle

Name: Fontana

Township: 1 South Range: 5 West Section(s): 27

Company/Firm/Agency:

Dudek

Contact Person: Adriane Dorrler

Street Address: 3544 University Avenue

City: Riverside Zip: 92501

Phone: (760) 840-7556 Extension:

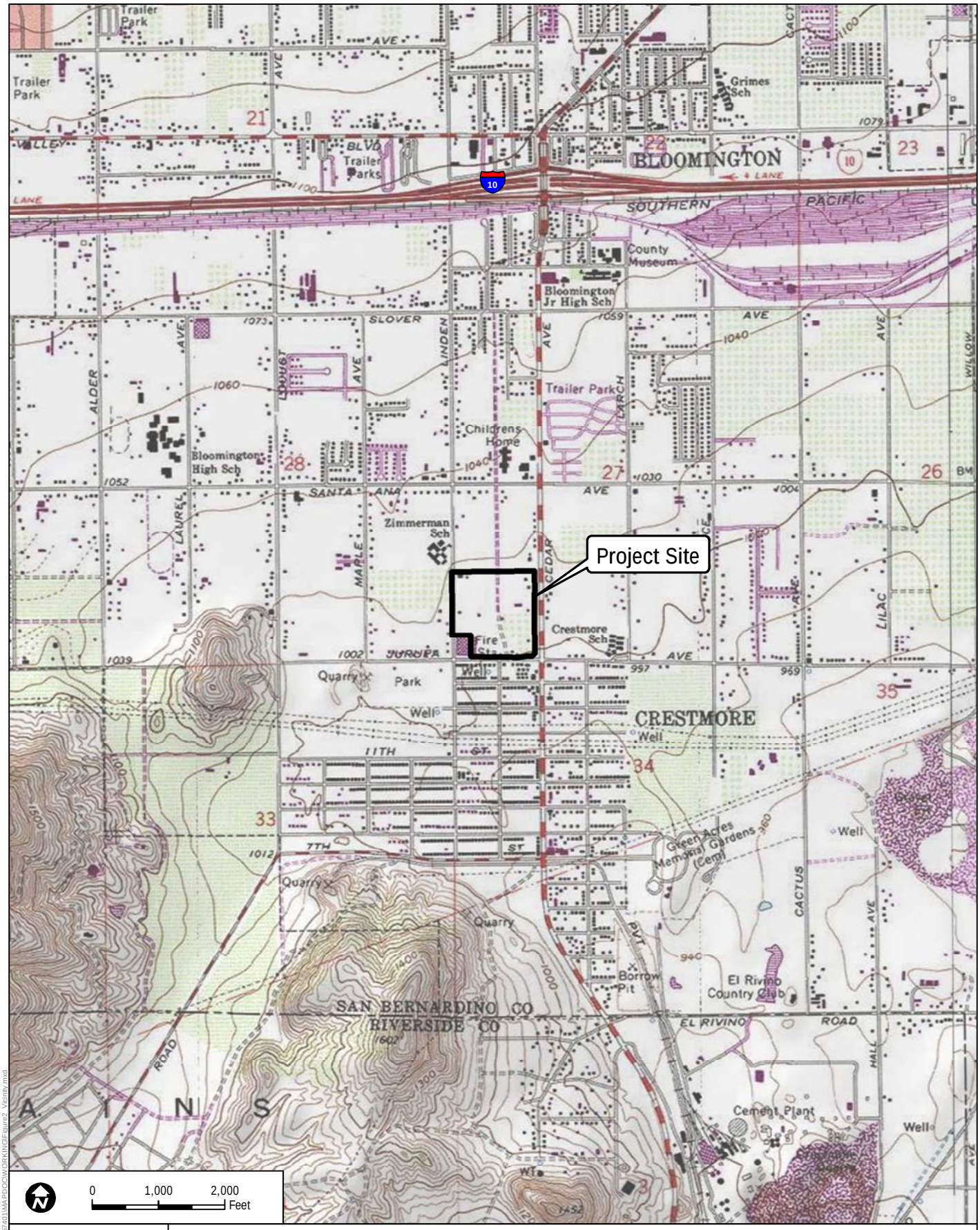
Fax: (760) 632-0164

Email: adorrler@dudek.com

Project Description:

Western Realco is proposing to construct a single 671,000-square-foot distribution building within an approximately 35-acre property. The site would include a detention basin and landscaping along Cedar Avenue and Jurupa Avenue. There will be a total of 291 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. Truck access will be installed from Cedar Avenue, and parking would include 138 trailer storage stalls, 4 grade level ramps, and 120 dock high doors.

☑ Project Location Map is attached



DUDEK

8674

SOURCE: USGS 7.5-Minute Series - Fontana Quadrangle.

FIGURE 1
Project Map

Bloomington Distribtuion Project

Document Path: Z:\Projects\8674\01\MAP\DOCWORKING\Figure2_Vicinity.mxd

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

November 5, 2015

Adriane Dorrler
DUDEK
3544 University Avenue
Riverside, CA 92501

Sent Via Email: adorrler@dudek.com
Number of Pages: 2

RE: Bloomington Distribution Project (8674), San Bernardino County

Dear Ms. Dorrler:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez
Associate Environmental Planner

Native American Contact List
San Bernardino County
November 5, 2015

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
gabrielenoindians@yahoo.
(626) 926-4131

Gabrieleno/Tongva San Gabriel Band of Mission Indian
Anthony Morales, Chairperson
P.O. Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 483-3564 Cell

(626) 286-1262 Fax

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., Gabrielino Tongva
Los Angeles , CA 90012
sgoad@gabrielino-tongva.com
(951) 807-0479

Gabrielino /Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
(909) 262-9351

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Bloomington Distribution Project (8674), San Bernardino County.

APPENDIX C

Resumes of Key Personnel

Adriane Dorrler

Archaeologist

Ms. Dorrler is a field archaeologist with over 14 years' experience in cultural resource management specializing in cultural resource studies with private, state, and federal regulatory agencies including National Historic Preservation Act (NHPA) Sections 106 and 110 and California Environmental Quality Act (CEQA) compliance extending primarily throughout Southern California. Ms. Dorrler has worked directly with Bureau of Land Management, the California Public Utilities Commission, California State Parks, and various military installations including the Marine Corps Air Ground Combat Center at Twentynine Palms, Marine Corps Base (MCB) Camp Pendleton, Naval Base Coronado, and Navy Installation San Clemente Island. She has experience in all aspects of project development from initial research, planning, and development to interpreting and synthesizing data in technical reports. Ms. Dorrler has acted as project manager and field director on complex data recovery programs, managed multiple archaeology laboratories, worked as liaison between Native American tribes and clients, and engaged in education and public outreach programs. In addition to Southern California, Ms. Dorrler has worked as a consulting archaeologist in the southwestern United States, the Mid-Atlantic region, and New England.

EDUCATION

BA, Anthropology,
Catholic University of America, 2001

BS, Nursing, University of Oklahoma, 2011

CERTIFICATIONS

City of San Diego Certified Archaeology and Paleontology Monitor

City of San Diego Certified Archaeology Crew Chief

Range Safety Training,
Camp Pendleton, California

Trimble GPS Mapping System TerraSync Certification

Occupational Safety and Health Administration (OSHA) 10-Hour Construction Safety Training

OSHA 40-Hour Hazardous Waste Operations Worker (HAZWOPER) training

Railroad Safety and Security Training

Registered Nurse

Health and Safety Officer

American Heart Association (AHA) Pediatric and Adult Cardiopulmonary resuscitation (CPR)

Wilderness First Responder

Project Experience

Development

Cannon Road, Caruso Affiliated, City of Carlsbad, San Diego County, California. Served as field director for a cultural resources constraints study of a 203-acre property for a proposed commercial retail center and open space easement in the City of Carlsbad. Conducted an intensive-level cultural resources survey.

Solana Highlands Revitalization, City of Solana Beach, San Diego County, California. Served as staff archaeologist during the preparation of an Environmental Impact Report (EIR) for a proposed 13.4-acre multifamily residential development with usable open space in Solana Beach. Authored Tribal Information Request letters in accordance with CEQA guidelines.

Murrieta 180, City of Murrieta, California. Served as field director for archaeological survey of a 10.9-acre property for a proposed multi-family residential development in Murrieta. Conducted a Phase I cultural resources inventory including a pedestrian survey and records search review of the California Historical Resources Information System.

Homestead South Cultural Resources, Newhall Land and Farming Company, Unincorporated Los Angeles County, California. Served as field director for archaeological survey of approximately 4,000-acre subdivision directly adjacent to the City of Santa Clarita. Conducted an intensive-level cultural resources survey.

Sand Canyon Plaza, JSB Development, City of Santa Clarita, California. Served as staff archaeologist during a Phase I cultural resources inventory for a proposed commercial and residential planning development in Santa Clarita. Performed a records search review of the California Historical Resources Information System.

Newland Sierra, Newland Land Co., San Diego, California. Served as staff archaeologist for the Phase I cultural resources inventory and Phase II significance evaluation of 1,983 acres of a proposed residential development within the North County Metro Subregion. Conducted a pedestrian survey, performed a records search review of the California Historical Resources Information System, and was a contributing author in the technical report.

As-Needed Environmental Planning Consultant Support Services, City of San Diego, California. Served as archaeological and paleontological monitor for underground conduit system installation in the neighborhood of Encanto. Tasks include environmental compliance monitoring.

Open Menu Indefinite Delivery/Indefinite Quantity (IDIQ) Contract for Cultural Resources Related Services, Naval Facilities Engineering Command Southwest (NAVFAC SW), various locations in California, Arizona, Colorado, Nevada, New Mexico, and Utah. Served as project manager, field director, health and safety officer, crew chief, and archaeological monitor and supported the undertakings of NAVFAC SW for new construction, ongoing maintenance, and repair projects by conducting cultural resources oversight for various projects throughout the Naval Southwest Division. Tasks included archaeological surveys, construction monitoring, National Register eligibility evaluations, mitigation programs, geographic information system (GIS) support, cultural resource/base support, and development of cultural/landscape contexts. (Approximate contract value: $3,000,000). Examples of projects include:

- P-1040 – Wire Mountain Road/Vandegrift Boulevard Intersection Improvements, MCB Camp Pendleton, San Diego, California
- P-1014 – Northern Region Tertiary Treatment Plant, MCB Camp Pendleton, San Diego, California
- P-1048 – Upgrades to Electrical Systems and Associated Facilities, MCB Camp Pendleton, San Diego, California
- Wilcox Range – Archaeological Monitoring to Support the Wilcox Range Ditch Drainage Clearance, MCB Camp Pendleton, San Diego, California
- P-310 – Archaeological Monitoring to Support the Small Arms Magazine, Edson Range P-310 Construction, MCB Camp Pendleton, San Diego, California
- San Clemente Island – Site Recording Only of Archaeological Sites on Northern San Clemente Island, San Clemente, California
- Silver Strand Training Complex – National Register Eligibility Determinations for Three Prehistoric Sites, Silver Strand Training Complex South Naval Base, Coronado, California
- Cultural Resource Investigation at CA-SDI-14791, MCB Camp Pendleton, San Diego, California

Paleontological Monitoring for the Carmel Valley Skate Facility Project, San Diego County, California. Served as paleontological monitor for the 13,500-square-foot facility excavation.

Cultural Resources Evaluation for Rancho Jamul Estates, Rancho Jamul Estates, San Diego County, California. Served as archaeologist responsible for surveying and testing for 20 historic and prehistoric resources for an approximately 400-acre development project in Jamul, California. Recorded and tested prehistoric and historic resources for significance and eligibility to local and state registers. Assisted in preparation and data analysis of technical report.

Cultural Resource Mitigation for Robertson Ranch, San Diego County, California. Served as archaeologist responsible for data recovery, controlled grading, and mass grading phases for an approximately 400-acre development project in Carlsbad, California. Assisted in preparation and data analysis of technical report.

Centre City Development Corporation Downtown San Diego Mitigation and Monitoring Reporting Program, Centre City Development Corporation, San Diego, California. Served as field director/archaeology and paleontology monitor for numerous commercial projects in downtown San Diego subject to the Centre City Development Corporation mitigation measures and mitigation monitoring requirements. Examples of projects include:

- The Q Project
- Lofts @ 707 10th Avenue Project
- South Block Lofts Project
- Vista Colina Project
- 6th and Market Project
- Carnation Building/Icon LLC Project
- Electra Project
- Park Terrace Project
- Pointe of View Project
- Vantage Pointe Project
- West Park Project
- Q Street Lofts Project
- The Mark

Paleontological Monitoring for the Glen Abbey Mortuary Project, San Diego County, California. Served as paleontological monitor for utility trenching and construction excavation in Chula Vista, California.

Cultural and Paleontological Resource Monitoring for the Towne Center Industrial Plaza Project, Imperial County, California. Served as archaeological and paleontological monitor for the mass grading and utility trenching of 125 acres of commercial/industrial land in Calexico, California.

Cultural Resource Survey for the Ketchum Ranch Project, San Diego County, California. Served as archaeologist responsible for field survey and eligibility review for prehistoric and historic sites for an approximately 208-acre development project in Jacumba, California.

Cultural Resource Survey for the Yuma Sector Project, BLM, Yuma County, Arizona. Served as archaeology crew chief responsible for in field survey and National Register eligibility review for ten prehistoric sites and three historic objects.

Cultural Resource Survey and Evaluation for the Otay Business Park Project, San Diego County, California. Served as archaeologist responsible for surveying and testing programs for an approximately 160-acre development project in Otay Mesa, California. Recorded and tested prehistoric and historic resources for significance and eligibility to local and State registers.

La Jolla Mitigation Monitoring Reporting Program, City of San Diego, California. Served as archaeological and paleontological monitor for numerous private residence additions within a culturally significant section of La Jolla, California. Examples of projects include:

- The Schroeder Residence Project
- The Nicolaou Residence Project
- The Underwood/Hall Residence Project

Paleontological Monitoring for the Gateway at Torrey Hills Project, San Diego County, California. Served as paleontological monitor during mass grading and excavation of a 200,000-square-foot building complex in Del Mar, California.

Paleontological Monitoring for the University City Village Project, San Diego County, California. Served as paleontological monitor during mass grading of a 55-acre residential development site in University City, California.

Cultural and Paleontological Resource Monitoring for the Siempre Viva Phase II Project, San Diego County, California. Served as archaeological and paleontological monitor for mass grading of a 60-acre business park site in Otay Mesa, California.

Cultural Resource Study and Paleontological Monitoring for the San Diego State University (SDSU) Campus Master Plan Project, San Diego County, California. Served as archaeological and paleontological monitor for the mitigation monitoring program of the 55-acre SDSU Campus Improvement project.

Paleontological Monitoring for the La Maestra Project, San Diego County, California. Served as paleontological monitor during utility trenching for improvements to a 36,440-square-foot medical clinic in City Heights.

Education

Academy of Our Lady of Peace Parking Garage Project, T.B. Penick & Sons, Inc., San Diego, California. As staff archaeologist, performed all laboratory duties for artifacts recovered from a historic refuse deposit discovered during construction; served as co-author of technical report.

Cultural Resources Monitoring, San Marcos Unified School District, San Diego County, California. Served as archaeology monitor responsible for available data review, construction activities monitoring, identified cultural resources recovery, strategy coordination with Native American groups, and cultural resource compliance establishment among contractors.

Cultural and Paleontological Resource Monitoring, San Marcos Unified School District, San Diego County, California. Served as archaeological and paleontological monitor for the mass grading of a 15-acre City of San Marcos school and park site.

Energy

Desert Green Solar Energy, Desert Green Solar Farm LLC, Borrego Springs, California. Served as co-author of technical report for a solar system project consisting of 45 acres of solar energy facility and offsite improvement corridors in Borrego Springs, San Diego County, California. Tasks include preparation and submittal of CEQA document.

McCoy Solar Energy, First Solar, Riverside County, California. Served as lead paleontological monitor during construction of the proposed 750-megawatt photovoltaic solar energy generating facility northwest of Blythe. Task included environmental compliance monitoring and project management support.

On-Call Cultural Resources, San Diego Gas & Electric (SDG&E), San Diego County, California. Served as field director and supported the undertakings of SDG&E for new construction, ongoing maintenance, and repair projects by conducting cultural resources inventories for various projects throughout the company service territory. Specific responsibilities included records search review, survey, field excavations, laboratory analysis, preparation of final report, and recommendations for resource significance and stewardship. Coordinated with other cultural resources staff, clients, and their subcontractors to implement, organize, conduct, and complete numerous small- to large-scale projects with overlapping schedules for SDG&E. Applied knowledge of local archaeological and Native American monitoring guidelines to assist SDG&E in completing projects within archaeologically sensitive areas. (Approximate contract value: $1,250,000). Examples of projects include:

- Pole Replacement Monitoring/Survey
- Wood to Steel Pole Conversion TL 678
- Wood to Steel Pole Conversion TL 6910
- Wood to Steel Pole Conversion TL 6914
- Wood to Steel Pole Conversion TL 683
- Wood to Steel Pole Conversion TL 637
- Wood to Steel Pole Conversion TL 688
- Wood to Steel Pole Conversion TL 698
- Orange Grove Re-conductoring Project TL 698
- Wood to Steel Pole Conversion TL 685
- Wood to Steel Pole Conversion TL 6932

Cultural Resources for the Devers-Palo Verde 500-kilovolt (kV) Transmission Line, Southern California Edison (SCE), Riverside County, California. Served as archaeology monitor responsible for available data review, field survey, field monitoring, and cultural resource compliance maintenance among contractors.

Cultural Resource Survey for Sempra Generation Copper Mountain North Solar Facility, Sempra Energy, Clark County, Nevada. Served as archaeologist responsible for field survey, identified cultural resources recovery, GIS mapping and navigation, and site recordation.

Cultural Resource Survey for Kern Front Oil Field, Kern County, California. Served as archaeologist responsible for field surveying, recovering identified cultural resources, GIS mapping and navigating, and site recordation.

Cultural Resource Survey and Support for the SDG&E East County Substation, SDG&E, San Diego County, California. Served as field director responsible for records search review, field survey, GIS mapping and global positioning system (GPS) data analysis, preparation of final report, and recommendations for resource significance and stewardship.

Cultural Resource Monitoring for the San Juan Capistrano Gas Line Project, Southern California Gas Company, Orange County, California. Served as field director/archaeology monitor to provide immediate on-site response in the event that cultural material was discovered during excavation work. Responsible for review of available data, GIS mapping, site recordation, data analysis, coordination of strategies with Native American groups, and cultural resource compliance establishment among contractors.

Cultural Resource Survey for Silurian Valley Wind Application BLM, San Bernardino County, California. Served as archaeologist responsible for review of available data, field survey, GIS mapping and navigation, and site recordation.

Healthcare

Paleontological Monitoring for the Cardinal Court/Cabrillo Medical Center Project, San Diego County, California. Served as paleontological monitor during demolition of existing structure and mass grading for a 3-story Class A building.

Military

Cultural Resources Inventory of Proposed Utility Corridors Associated with the Edwards Air force Base (AFB) Area Development Plan, 412th Civil Engineer Directorate, Kern and Los Angeles Counties, California. Served as staff archaeologist for the cultural resources inventory for approximately 4,339-acres of utility corridor within Edwards AFB. Assisted in report preparation and submittal of NEPA and NHPA Section 106 deliverable.

Environmental Assessment Addressing Upgrades to Support Maintenance and Energy and Water Supply Project at Navy Installation San Clemente Island, Naval Facilities Engineering Command Atlantic (NAVFAC LANT), San Clemente Island, California. Served as field director/health and safety officer and supported the undertakings of NAVFAC LANT through assessing potential impacts to cultural resources within proposed corridors along all utilities, roads, and structures for maintenance, upgrades, and vegetation management. Conducted a base-wide archaeological site record and literature search. Developed a GIS database containing site locational information of cultural resources impacted by the proposed plan. (Approximate contract value: $700,000).

Recreation

Cultural Resource Survey for Palomar Mountain State Park Fire Prevention, California Department of Parks and Recreation, San Diego County, California. Served as archaeologist responsible for review of available data, field survey, GIS mapping and navigation, and site recordation.

Cultural and Paleontological Resource Monitoring for the Fletcher Cove Park Improvements, California. Served as archaeological and paleontological monitor during grading and infrastructure alterations within the existing City of Solana Beach Park.

Resource Management

Mitigation, Monitoring, and Reporting for the 1900 and 1912 Spindrift Drive Projects, Private Client. La Jolla, California. Served as field director and health and safety officer responsible for implementation and oversight of a multiphase data recovery program and subsequent monitoring to satisfy City of San Diego and CEQA guidelines and regulations. Specific responsibilities included managing the daily operations of the archaeological excavation and cultural materials inventory program and monitoring effort; orchestrating fieldwork, billing, and staffing; coordinating and consulting with Native American tribes and agencies; supervising the project crew; adhering to a strict health and safety plan in order to guarantee project safety standards; ensuring that project progression is adequate to meet or exceed project end goals; observing and interpreting archaeological excavation data in order to maximize research potential and meet the requirements of the City of San Diego, CEQA, and client/representatives; creating daily schedules and staffing plans; coordinating with various agencies and client representatives; and supervising laboratory work. (Approximate contract value: $1,000,000).

Cultural Resource Study and Evaluation for LaPozz Claim Test, Kern County, California. Served as archaeologist responsible for review of available data, field excavations and survey, GIS mapping and navigation, site recordation, and data analysis.

Water/Wastewater

Little Lake MDP Line B, Stage 1, Riverside County Flood Control and Water Conservation District, San Jacinto and Hemet, California. Served as project archaeologist for archaeological monitoring during construction, operation and maintenance of approximately 9,000 linear feet of underground storm drain facilities in the cities of San Jacinto and Hemet. Tasks include evaluation and treatment of unanticipated discoveries and preparation of deliverables.

Cultural Resource Study, Padre Dam Municipal Water District, San Diego County, California. Served as archaeologist responsible for review of available data, field excavation, GIS mapping, site recordation, strategy coordination with Native American groups, and laboratory analysis.

Cultural and Paleontological Resource Study for the City of San Diego Reclaimed Water Distribution System Project, San Diego, California. Served as archaeological and paleontological monitor for the City of San Diego's continuing annual water and sewer main replacement program. Examples of projects include:

- Sewer and Water Group 683A
- Sewer and Water Group 676
- Sewer and Water Group 796
- Sewer and Water Group 741
- Sewer and Water Group 718
- Sewer Pump Station 19 Replacement
- Sorrento Valley Sewer and Pump Station 89

Relevant Previous Experience

Field Director/Health and Safety Officer, HDR, San Diego, California. Responsible for management of all aspects of field projects, including Phase I, II, and III projects under both CEQA and NHPA (Section 106 and 110). Manages crews of up to 20 individuals, supervises all daily field and laboratory operations, and maintains client relationships. Contributed to project's budget management and project report writing. (2009-2014)

Field Crew Chief/Archaeological Technician, ASM Affiliates, Inc., Carlsbad, California. Responsible for management of fieldwork on a long-term night project. Performed survey, monitoring, and excavation on various projects throughout Southern California and Nevada. Performed laboratory work including identification of prehistoric and historic material from site's within the Southwestern region. (2009-2010)

Laboratory Manager/Field Director, Brian F. Smith & Associates, Poway, California. Responsible for management of all aspects of field projects including Phase I, II, and III projects. Managed crews of up to ten individuals, supervised all daily field and laboratory operations, and maintained client relationships. Composed final project reports and curated cultural material. Performed as-needed paleontological monitoring. (2004-2009)

Crew Chief/Archaeological Technician, Richard Grubb & Associates, Cranbury, New Jersey. Performed survey, monitoring, and excavation on various projects throughout New England. Performed laboratory work including identification of prehistoric and historic material. Conducted background research for project's and was responsible for laboratory work and cultural material curation. (2001-2004)

Archaeological Technician, Thunderbird, Washington DC. Performed survey and excavation on various projects throughout the Mid-Atlantic region. Performed laboratory work including identification of prehistoric and historic material. (2000-2001)

Micah Hale, PhD, RPA

Senior Archaeologist

Micah Hale is Dudek's cultural resources practice manager and lead principal investigator, with technical expertise as a lithic and groundstone analyst, invertebrate analyst, and in ground penetrating radar. Over the course of his 19-year career, Dr. Hale has served as a principal investigator in the public and private sector for all levels of archaeological investigation, as a public outreach coordinator and as an assistant professor at the University of California, Davis (U.C. Davis). As Dudek's cultural resources practice manager, he currently functions as a principal investigator in project oversight including proposals, research designs, fieldwork, artifact analysis, and report authorship.

EDUCATION

University of California, Davis
PhD, Anthropology, 2009

California State University, Sacramento
MA, Anthropology, 2001

University of California, Davis
BS, Anthropology, 1996

CERTIFICATIONS

Register of Professional Archaeologists (RPA), 2001

PROFESSIONAL AFFILIATIONS

Society for American Archaeology

Society for California Archaeology

Antelope Valley Archaeological Society

San Diego Archaeological Society

Dr. Hale's experience is both academic and professional spanning California, Arizona, Nevada, and Oregon, including work for Naval Facilities Engineering Command (NAVFAC) Southwest, California Department of Transportation (Caltrans), Western Area Power Administration, Bureau of Land Management (BLM), U.S. Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service (USFWS), California State Parks, various city and county agencies, and directly for Native American groups. Dr. Hale has supervised numerous large-scale surveys, test excavations, data recovery programs, and geoarchaeological investigations, served as a third party review consultant, and an expert witness in legal proceedings. He has authored research designs, management and treatment plans, proposals, preliminary and final reports, and technical analyses. Dr. Hale has integrated his personal research interests into projects and participated in professional symposia at local and national venues, including the Society for American Archaeology and the Society for California Archaeology. Additionally, he has conducted academic research in the Polar Arctic, Greenland. Dr. Hale's current focus is on hunter-gatherer archaeology of California and the Great Basin, applying theoretical premises of cultural evolution and human behavioral ecology.

Project Experience

Development

Phase II Archaeological Data Recovery for the Newland Homes Sierra Project, San Diego County, California. As project manager and principal investigator, supervising data recovery investigations at two significant prehistoric archaeological sites and historic archival research of a homestead in support of the Newland Sierra Environmental Impact Report (EIR). (2013-present)

Phase I Archaeological Inventory and Phase II Archaeological Evaluation for the Yokohl Ranch Project, Tulare County, California. As project manager and principal investigator, supervised completion of 12,000 acre survey and archaeological evaluation of 85 prehistoric and historical archaeological sites in support of the Yokohl Ranch EIR. (2012-2013)

Phase I Inventory and Phase II Cultural Resources Evaluation for the Star Ranch Project, RBF Consulting, San Diego County, California. As project manager and principal investigator, supervised CEQA inventory and evaluation for private development. (2011)

Phase II Archaeological Evaluation of Two Prehistoric Sites, Torrey Pines Glider Port, San Diego County, California. As project manager and principal investigator, supervised CEQA evaluation of two prehistoric archaeological sites for the Torrey Pines City Park General Development Plan. (2012)

Data Recovery of One Prehistoric Site for the Rhodes Property, Sea Breeze Properties, San Diego County, California. As project manager and principal investigator, supervised CEQA compliant data recovery of a large prehistoric site for a residential development.

Archaeological Survey of the Paramount Mine Exploratory Drilling Project, Essex Environmental, Mono County, Nevada. As principal investigator and field director, conducted archaeological survey for mining exploration and prepared the technical report. (2006)

Phase I Inventory of 1,544 Acres and Phase II Evaluation of Archaeological Sites along the Western and Northwestern Boundaries, Edwards Air Force Base, Kern County, California. As field director, supervised a Phase I inventory of 1,544 acres. Recorded 30 new archaeological sites, more than a dozen "sub-modern" refuse dumps, and a variety of isolate finds. Notable sites include several early Holocene lithic scatters (Lake Mojave-, Silver Lake-, and Pinto-age deposits), a rhyolite lithic quarry, and a complex of historic dumps associated with homesteading activities around Lone Butte. (2005)

Archaeological Survey of the La Mesa Meadows Residential Development Project, Helix Environmental, San Diego County, California. As principal investigator, conducted a survey of a proposed residential development in San Diego County. (2005)

Pankey Ranch Testing, Pardee Homes, Northern San Diego County, California. As field director, supervised excavation of shovel test pits to delineate the boundaries of site CA-SDI-682, the prehistoric village of Tom-Kav. Managed field personnel, conducted excavation, and wrote portions of technical report. (2004)

Oceanside Hilton EIR, Dudek Associates, Oceanside, San Diego County, California. As principal investigator and field director, conducted a survey of the proposed Hilton Hotel at the eastern end of Buena Vista Lagoon in Carlsbad and prepared portions of technical report for an EIR. (2004)

Data Recovery of Locus O, Star Canyon Development, Agua Caliente Band of Cahuilla Indians, Palm Springs, Riverside County, California. As field director, supervised field crews for data recovery mitigation of an archaeological deposit and human remains near Tahquitz Canyon. Coordinated with Native American representatives and prepared portions of the technical report. (2004)

Linda Vista Survey, City of San Marcos Planning Department, San Diego County, California. As field director, conducted a Phase I cultural resource inventory of the proposed road realignment in San Marcos. Prepared technical reports and made recommendations for additional work to be done within the project area. (2003)

Archaeological Monitoring for Williams Communications Fiber-Optic Line, Jones and Stokes Associates, San Luis Obispo and Bakersfield, Kern and San Luis Obispo Counties, California. As resource monitor/Native American coordinator, conducted archaeological monitoring for a fiber-optic cable installation project that spanned 180 miles from San Luis Obispo to Bakersfield. Identified and

protected archaeological resources in the project area in compliance with state and federal regulations. Managed Native American monitors and coordinated daily work with construction and environmental staff to facilitate project completion. (2001)

Subsurface Survey of a Proposed Bicycle Path Along the Columbia River Slough in Northwest Portland, City of Portland, Multnomah County, Oregon. As field archaeologist, conducted auger testing in a variable north-to-south transect at 30-meter intervals, and unit mapping. (2000)

Phase II Test Excavations, AT&T, Portland, Multnomah County, Oregon, and Vancouver, Clark County, Washington. This project determined the presence and condition of any cultural resources in the project areas that were situated on the northern and southern sides of the Columbia River in Washington and Oregon. (1999)

AT&T Cable Removal Project, Jones and Stokes Associates, Taft to Los Angeles, Kern and Los Angeles Counties, California. As field archaeologist, conducted a survey to determine archaeological impact by the removal of a lead-lined subsurface cable. (1998)

Education

Data Recovery for the Palomar North and Meadowood Projects, Palomar College, San Diego County, California. As principal investigator, supervised Section 106 and CEQA-compliant data recovery of the ethnohistoric village of Tom-Kav. Expert witness for litigation of archaeological work for the client. (2012)

Data Recovery Excavations in Advance of Geotechnical Coring at W-12, University of California San Diego (UCSD), San Diego County, California. As project manager and principal investigator, supervised data recovery excavations in a midden dated as early as 9,600 years before present. (2009)

Archaeological Test Excavations at Selected Sites on Vandenberg Air Force Base, University of California, Davis, Lompoc, Santa Barbara County, California. As principal investigator and field director, supervised and instructed 21 students for the 2008 U.C. Davis Field School. (2008)

Archaeological Survey and Excavations in the Polar Arctic, University of California Davis, Northwest Greenland. As researcher, conducted a project for the National Science Foundation, National Geographic, and the Inglefieldland Polar Archaeology Expedition; U.C. Davis. (2006)

Energy

Phase II Evaluation of 19 Archaeological Sites for Soitec's Tierra Del Sol Solar Project, San Diego County, California. As principal investigator, oversaw and implemented significance evaluations, including fieldwork and documentation, under CEQA and San Diego County guidelines within the development footprint. (2012-2013)

Phase II Evaluation of 42 Archaeological Sites for Soitec's Rugged Solar Project, San Diego County, California. As principal investigator, oversaw and implemented significance evaluations, including fieldwork and documentation, under CEQA and San Diego County guidelines within the development footprint. (2012-2013)

Class III Cultural Resources Inventory for the Level 3 Fiber Optic Installation Project, Fort Irwin Army Reserve and BLM, San Bernardino County, California. As Project manager and co-principal

investigator, oversaw and implemented cultural resource inventory of fiber optic corridor and recordation and evaluation of contributing elements to the NRHP-eligible LADWP transmission line corridor. (2012-2013)

Third Party Compliance Monitoring for the Ocotillo Wind Energy Farm, Ocotillo, Imperial County, California. As principal investigator, oversaw and implemented compliance assistance to the BLM to ensure adherence to mitigation measures and proper treatment of cultural resources. (2012-2013)

Third Party Compliance Monitoring for the Tule Wind Project, San Diego County, California. As principal investigator, oversaw and implemented compliance assistance to the Bureau of Land Management to ensure adherence to mitigation measures and proper treatment of cultural resources. (2012-2013)

Third Party Compliance Monitoring for the East County Substation Project, San Diego County, California. As principal investigator, oversaw and implemented compliance assistance to the BLM and California Public Utilities Commission (CPUC) to ensure adherence to mitigation measures and proper treatment of cultural resources. (2012-2013)

Third Party Compliance Monitoring for the Rio Mesa Solar Project, Riverside County, California. As principal investigator, oversaw and implemented compliance assistance to the BLM to ensure adherence to mitigation measures and proper treatment of cultural resources. (2012-2013)

Class III Cultural Resources Inventory for Soitec's Fort Irwin Solar Project, San Bernardino County, California. As project manager and co-principal investigator, oversaw and implemented cultural resources inventory. (2013)

Phase II Archaeological Testing of One Historic Site for the Cool Valley Solar Project, RBF Consulting, San Diego County, California. As project manager, supervised implementation of archaeological testing of a historic airfield near Campo. (2012)

Phase II Archaeological Testing of Four Prehistoric Sites for the Gildred Solar Project, RBF Consulting, San Diego County, California. As project manager, supervised implementation of archaeological testing of four small prehistoric sites along the ancient Lake Cahuilla shoreline. (2012)

Phase II Archaeological Testing of One Prehistoric Site for the Borrego A and B Solar Projects, RBF Consulting, San Diego County, California. As project manager, supervised implementation of archaeological testing of a large prehistoric habitation site in the Imperial Valley. (2012)

Phase I Cultural Resources Inventories for the Sol Orchard and Sol Focus Solar Projects, RBF Consulting, San Diego County, California. As project manager, supervised implementation of Phase I CEQA inventories for more than 22 solar projects. (2012)

Class II Survey of 4,700 Acres for the Silurian Wind Project, Iberdrola Renewables, San Bernardino County, California.. As project manager and principal investigator, supervised Section 106 inventory of proposed renewable energy project. (2011)

Class III and Class II Cultural Resources Inventory for the Tule Wind Alternative Energy Project, HDR Engineering for Iberdrola Renewables, San Diego County, California. As project manager and principal investigator, supervised inventory of 6,000 acres and recordation of nearly 200 archaeological

sites, and assisted the BLM in preparation of a programmatic agreement between Iberdrola and the California State Historic Preservation Office (SHPO). (2010)

Monitoring of the Installation of Meteorological (MET) Towers for the Tule Wind Project, HDR Engineering, San Diego County, California. As project manager and principal investigator, supervised archaeological and Native American monitors during MET tower installation in the Tule Wind project area. (2010)

Jamul Substation 6, San Diego Gas & Electric Company (SDG&E), Jamul, San Diego County, California. As field director, conducted an intensive pedestrian survey of 18 acres in Jamul for a proposed substation construction project. Identified and recorded two archaeological sites within the project area. Prepared the technical report. Coordinated with paleontology subcontractor and incorporated paleontology report into ASM's archaeology technical report. (2004)

Path 15 Transmission Line Corridor, Steigers Corporation, San Joaquin Valley, Fresno and Merced Counties, California. As field director, supervised survey of over 87 miles of 400-foot transmission line corridor and over 46 miles of access roads in Merced and Fresno Counties. Supervised field crew, documented sites, coordinated with Native American representatives, coordinated access to survey areas, and prepared portions of technical report. (2004)

Carmel Valley Substation Survey, SDG&E, Carmel Valley, San Diego County, California. As field director, conducted a Phase I cultural resource inventory of a proposed power substation. (2003)

Federal

Ground-Penetrating Radar Survey and Class III Inventory for the Friendship Circle Project, Department of Homeland Security, Gulf South Research Corporation, San Diego County, California. As project manager and principal investigator, supervised and implemented a ground-penetrating radar survey and surface survey for the Friendship Circle project at Border Fields State Park, San Diego.

Healthcare

Kaiser Permanente Murrieta Valley Medical Center Preliminary Environmental Impact Report (PEIR), City of Murrieta, California. Dr. Hale acted as Principal Investigator on the Kaiser Murrieta project, overseeing a Phase I cultural resources inventory and Phase II archaeological significance evaluation of one prehistoric resource. Dr. Hale assisted the City with Tribal communication and analysis of potential impacts to a viewshed considered sensitive by local Native Americans. All studies were completed to comply with CEQA guidelines in support of an EIR.

Military

Phase II Evaluation of 31 High Complexity Sites on Edwards Air Force Base, CH2MHill/JT3, Kern and Los Angeles Counties, California. As project manager, oversaw Section 106 test excavations at 31 prehistoric archaeological sites. (2010)

Phase II Evaluation of 85 Archaeological Sites on Edwards Air Force Base, CH2MHill/JT3, Kern and Los Angeles Counties, California. As project manager and principal investigator, supervised Section 106 test excavations at 42 prehistoric and 43 historic archaeological sites. (2010)

Western Acquisition Survey, Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, San Bernardino County, California. As principal investigator, managed the survey of 10,000 acres on land administered by the BLM in Johnson Valley, west of the base. Duties included project management, coordination with BLM Barstow field office and MCAGCC 29 Palms personnel, coordinating and supervising field crews, as well as document preparation. (2010)

Management Plan for the Coso Rock Art National Historic Landmark (NHL), Naval Air Weapons Station (NAWS) China Lake, Inyo County, California. As project manager, supervised and co-authored a management plan for the Coso Rock Art NHL, including arranging and implementing stakeholder meetings and field testing the implementation plan. (2010)

Section 110 Intensive Archaeological Survey of the Cole Flat Training Area, NAWS China Lake, Inyo County, California. As project manager and principal investigator, supervised the survey of 5,400 acres near the Coso Rock Art NHL. (2009)

Phase I Survey of Selected Parcels in Five Training Areas, MCAGCC Twentynine Palms, San Bernardino County, California. As project manager and principal investigator, supervised survey of 4,500 acres in the Blacktop, Lava, Lavic Lake, Sunshine Peak, and Quackenbush training areas. (2009)

Phase I Survey of Aerial Maneuver Zones for the 53 Aerial Maneuver Zone (AMZ) Project, MCAGCC Twentynine Palms, California. As project manager and principal investigator, supervised survey of 72 AMZ's. (2009) Client Reference: Leslie Glover, MCAGCC 29 Palms, 760.830.5369.

Cultural Resources Inventory and Evaluation for the Skaggs Island Defense Base Closure and Realignment Commission (BRAC) Disposal Archaeological Survey, Naval Communications Station, Sonoma County, California. As principal investigator, supervised survey of installation and recordation and evaluation of historic civilian and military resources. (2011-2012)

Phase I Survey of 8,100 Acres on Edwards Air Force Base, ACOE, Kern County, California. As principal investigator, supervised survey of 8,100 acres on Edward Air Force Base. (2008-2009)

Phase I and II Survey of 2,500 Acres and Evaluation of 50 Sites on Edwards Air Force Base, ACOE, Kern County, California. As principal investigator, supervised survey of 2,500 acres and evaluation of 50 sites on Edward Air Force Base. (2008)

Cultural Resources Inventory and Evaluation for the Concord Inland BRAC Disposal Archaeological Survey, Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California. As principal investigator, supervised survey of 5,200 acres and recordation and evaluation of historic civilian and military resources, and prehistoric archaeological sites.

Archaeological Evaluation of Eight Prehistoric Sites in the Emerson and Quackenbush Training Areas, ACOE, MCAGCC Twentynine Palms, San Bernardino County, California. As field director, supervised excavation of eight prehistoric sites on the Marine Corps base in Twentynine Palms, California. (2005)

Archaeological Evaluation of 22 Sites on Edwards Air Force Base, ACOE, San Bernardino County, California. As field director, supervised the National Register evaluation of 22 sites at Edwards Air Force Base. (2005)

Naval Base Point Loma Site Recordation, NAVFAC Southwest (SW), Point Loma, San Diego County, California. As principal investigator and field director, supervised relocation of 33 sites located on Naval Base Point Loma. Reviewed site documentation and re-recorded sites that were improperly documented by past surveys. (2004)

Archaeological Testing of 23 Sites in the Las Pulgas Corridor, Marine Corps Base (MCB) Camp Pendleton Environmental Security, MCB Camp Pendleton, San Diego County, California. As field director, supervised field crews for Phase II testing and mechanical coring of 23 sites on Camp Pendleton. Coordinated with coring contractor and base personnel. Documented sites in the field. Supervised field crews and prepared portions of technical report. (2004)

Rose-Arizone, Clay, and Photo Drainage, and Road Improvement Surveys, NAVFAC SW, San Clemente Island, Los Angeles County, California. As field director, supervised archaeological surveys and the placement of protective signing on 750 sites. Coordinated access to the island and supervised one crew member. (2004)

Remote Sensing, NAVFAC SW, Naval Auxiliary Landing Field (NALF) San Clemente Island, Los Angeles County, California. As Global Positioning System (GPS) specialist, conducted data collection and image rectification for a remote sensing project in the detection of archaeological sites on the base. Supervised one crew member. (2004)

MCB Camp Pendleton Burn Survey, MCB Camp Pendleton Environmental Security, MCB Camp Pendleton, San Diego County, California. As field director, supervised an archaeological survey of 1,500 acres in the De Luz and Case Springs areas of Camp Pendleton. Managed field crews, documented archaeological sites, prepared site forms and portions of technical report. (2002)

Survey of Yuma Stormwater Basin, NAVFAC SW, Marine Corps Air Station (MCAS) Yuma, Yuma County, Arizona. As field director, supervised survey of stormwater basin along the Marine Corps airfield at MCAS Yuma. Managed field crew and prepared technical report. Client (2002)

Archaeological Coring of The Red Beach site (SDI-811), MCB Camp Pendleton Environmental Security, MCB Camp Pendleton, San Diego County, California. As field director, supervised first phase of a geologic coring project for a shell midden site along the coast of MCB Camp Pendleton, San Diego County. Coordinated with coring contractor and base personnel. Managed field monitors and field crew. (2002)

Archaeological Testing and Survey of the Lemon Tank Area, NAVFAC SW, NALF San Clemente Island, Los Angeles County, California. Conducted excavations, survey, and site recording. (2002)

Evaluation of Nine Prehistoric Sites, Edwards Air Force Base, San Bernardino County, California. As field archaeologist, evaluated nine sites through excavation to determine overall sensitivity and value of the archaeological remains that characterize the region. (1999)

Evaluation of Four Prehistoric Sites, Jones and Stokes Associates, Camp Roberts National Guard, San Luis Obispo County, California. As field technician, conducted excavation in order to determine the boundaries of the site for further mitigation. (1998)

Archaeological Survey and Excavation, ACOE, MCAGCC Twentynine Palms, San Bernardino County, California. As field archaeologist, participated in nine field rotations averaging 10 days each. Conducted survey of portions of the Marine Corps base to determine the distribution of cultural materials,

and subsequently excavate sites based on priority. This area is characterized as high desert with the typically associated flora and fauna and archaeological sites that range in age from Early to Late Holocene. (1998)

Resource Management

South Sacramento Habitat Conservation Plan (HCP) EIR, County of Sacramento, California. Dr. Hale led the cultural resources effort on the South Sacramento HCP Project, including development of a long-term plan for analyzing cultural resources constraints and assisting multiple agencies in their tribal outreach obligations.

Archaeological Survey of the Silver Lake Recreation Area, El Dorado Irrigation District, California. As principal investigator and field director, supervised an archaeological survey of the Silver Lake Recreation area. (2006)

Archaeological Data Recovery Excavations at Border Fields State Park, California State Parks, Imperial Beach, San Diego County, California. As field director, supervised excavation of prehistoric sites located within the APE of a fence along the U.S.–Mexico Border in San Diego County. Prepared technical report. (2005)

Archaeological Salvage Excavations of Two Ollas in Hellhole Canyon, BLM, San Diego County, California. As principal investigator, relocated a cache of prehistoric ceramic artifacts uncovered during wildfires in San Diego County. Documented cache and collected artifacts for subsequent reconstruction in the ASM laboratory. Prepared technical report detailing project. (2005)

Archaeological Data Recovery Excavations at CA-SDI-16691, Jackson Pendo Development Company, Escondido, San Diego County, California. As principal investigator, supervised data recovery excavation at a Late Prehistoric site in Escondido, California. (2005)

El Cuervo Wetlands Mitigation, City of San Diego Land Development Review Department and Mitigation Monitoring Coordination, Carmel Valley, San Diego County, California. As co-principal investigator, supervised an archaeological monitoring project in central San Diego County, conducted test excavation of one site identified during monitoring. The site was evaluated as not significant. Prepared portions of technical report and supervised on-site monitor. (2004)

Milk Vetch Emergency, Imperial Irrigation District (IID), Imperial County, California. As archaeological monitor, conducted emergency monitoring along transmission line corridor in Imperial County. Coordinated with IID and construction personnel. Prepared technical report. (2002)

Burial Salvage Excavations at the Sucking Carp Site (CA-MER-295), Great Valley Grassland State Park, California Department of Parks and Recreation, Los Banos, Merced County, California. As field supervisor, directed excavations at CA-MER-295 in the central San Joaquin Valley in order to salvage cultural remains (including burials) from further destruction by the San Joaquin River. (1999)

Transportation

Ortega Highway Monitoring, City of San Juan Capistrano, Orange County, California. As project manager, supervised Dudek's principal investigator to coordinate archaeological, tribal, and paleontological mitigation monitoring associated with the construction of water conveyance facilities and road repairs. (2013)

Archaeological Testing and Ground Penetrating Radar Study of the Forester Creek Biological Mitigation Area, Caltrans District 11, Santee, San Diego County, California. As principal investigator and field director, supervised archaeological testing of a private parcel. (2005)

Rail Bridge (at mile marker 230.6) Replacement, North County Transit District, Agua Hedionda, Carlsbad, San Diego County, California. As principal investigator and field director, managed an archaeological survey of an APE associated with the replacement of and historic railroad bridge. Recorded archaeological sites within APE and prepared portions of technical report. (2004)

Little Lake Phase II Testing, Caltrans District 5, Little Lake, Inyo County, California. As field director, supervised Phase II testing of four sites including the ethnohistoric village of *Pagunda* near the town of Little Lake. Supervised field crews, coordinated fieldwork with Caltrans and subcontractors, and prepared portions of technical report. (2004)

Extended Phase I Testing, Caltrans District 05, Little Lake, Inyo County, California. As field director, supervised fieldwork for extended Phase I testing of one prehistoric site along U.S. Route 395 (US 395) in Inyo County. Prepared portions of technical report. (2003)

Cartago and Olancha Four-Lane Project Test Excavations, Caltrans District 05, Inyo County, California. As field director, supervised test excavations of 15 sites for the proposed widening of US 395 near Cartago and Olancha. Supervised all fieldwork and managed a team of 12 field archaeologists. Coordinated selected specialized studies, conducted ground stone analysis, and prepared large portions of the resulting 800+-page report. (2002)

Survey of Amtrak Second Mainline Right-of-Way, North County Transit District, Oceanside, San Diego County, California. As co-field director, managed an archaeological survey of 6.2 miles of North County Transportation District railroad right-of-way near San Onofre, California. (2002)

State Route 905 (SR-905) Survey, Caltrans District 11, San Diego County, California. As co-field director, conducted survey and recording of sites along the SR-905 right-of-way in southern San Diego County. Documented three prehistoric sites within the proposed right-of-way. Created site maps and prepared site forms. (2002)

Evaluation of 11 Sites along US 395, Caltrans District 05, Blackrock, Inyo County, California. As crew chief, managed 6-18 personnel, prepared paperwork and report. Made decisions surrounding site excavations in Owens Valley. Project included Phase II test excavation of numerous sites ranging in age from early to late Holocene. (2002)

Phase I Survey, Caltrans District 10, Stockton, San Joaquin County, California. As field archaeologist, conducted various survey and excavation projects for Caltrans throughout central California. Conducted survey and excavation, operated as a graduate student assistant to the District 10 archaeologist dealing with compliance issues, prepared site mapping and technical reports including Archaeological Survey Reports (ASR), Historic Properties Survey Reports (HPSR), and Negative Declarations. (1997)

Phase I Survey/TEA, Caltrans, Inyo and Mono Counties, California. As field archaeologist, conducted survey of most major highways in Mono and Inyo Counties, California. Documented the distribution of all cultural material within the Caltrans right-of-way in order to determine impacts by road widening. (1996-1997)

Tribal

Section 106 Mitigation Development and Tribal Consultation Assistance, BLM, San Diego County, California. As project manager, assisted the BLM in development of Historic Properties Treatment Plan, Tribal Participation Plan, and other mitigation measures for the Tule Wind project, McCain Valley California. (2011-2012)

Mitigative Screening, Agua Caliente Band of Cahuilla Indians, Palm Springs, Riverside County, California. As field director, supervised archaeological mitigation of an impacted burial site on the Agua Caliente Reservation. Prepared mapping of the project, coordinated field efforts with Tribal representatives, oversaw monitoring of the project, and prepared portions of the technical report. (2003)

Water/Wastewater

San Clemente Water Recycling Monitoring, City of San Clemente, Orange County, California. As project manager, supervised Dudek's principal investigator to coordinate archaeological, tribal, and paleontological mitigation monitoring associated with the construction of a new water conveyance pipeline. Duties include preparation of a discovery and treatment plan. (2013)

Poseidon Resources Desalination Plant and Pipeline Monitoring, City of Carlsbad, San Diego County, California. As project manager, supervised Dudek's principal investigator to coordinate archaeological, tribal, and paleontological mitigation monitoring associated with the construction of the desalination plant and a new water conveyance pipeline. Duties include preparation of a discovery and treatment plan and evaluation of archaeological discoveries. (2013)

Poseidon Resources Desalination Plant and Pipeline Wetland Mitigation Archaeological Evaluation, City of San Diego, San Diego County, California. As project manager and principal investigator, developed methods and strategies to evaluate archaeological deposits most likely related to the 1782 ethnohistoric Kumeyaay village of La Punta located within the wetland mitigation area. Project included geotechnical coring and backhoe exploration to locate and evaluate buried archaeological deposits Duties included assistance provided to the USFWS for NAGPRA consultation and implementation. (2013)

Lee Lake Cultural Resources Inventory, Lee Lake Water District, Riverside County, California, 2013. As project manager, supervised Dudek's principal investigator to coordinate and implement cultural resources inventory for the construction of a new pipeline and water storage facility.

Cultural Resources Monitoring for the City of Napa Levee Improvement Project, ACOE, Sacramento District, Sacramento, California. As principal investigator, supervised archaeological monitoring requiring HAZWOPER certified archaeologists to treat historical archaeological discoveries for a levee and stormwater improvement project. (2010-2011)

Data Recovery Excavations at the Ridge Hill Facilities Site (SDI-18472), Padre Dam Municipal Water District (PDMWD), San Diego County, California. As principal investigator, supervised data recovery of a complex late prehistoric habitation site. (2009)

San Clemente Canyon Survey, City of San Diego Metropolitan Wastewater Department, City of San Diego, San Diego County, California. As principal investigator and field director, supervised and conducted an intensive pedestrian survey of proposed access road maintenance for the San Clemente

Canyon sewer line. Two cultural resources were identified. Conducted site documentation, prepared sites forms and technical report. Managed survey crew member. (2004)

Lake Murray Survey, City of San Diego Metropolitan Wastewater Department, La Mesa, San Diego County, California. As field director, conducted survey of proposed trunk sewer replacement in La Mesa. Prepared portions of the technical report. (2003)

Phase II Testing, IID, Imperial County, California. As field director, supervised Phase II testing of eight sites in the Colorado Desert. Managed field crews, conducted test excavations, and prepared site documentation and portions of the technical report. (2003)

Carmel Valley Archaeological Monitoring, City of San Diego Metropolitan Wastewater Department, Carmel Valley, San Diego County, California. As field monitor for pre-trenching for placement of sewer line, conducted monitoring and wrote portions of technical report. (2002)

EIR/EIS Preparation

Dr. Hale currently assists in the preparation of technical descriptions and analyses for environmental impact statements and reports at the state and federal levels for Dudek projects. Examples of completed environmental sections include those prepared for the Yokohl Ranch, Rio Mesa Solar, Soitec Rugged and Tierra Del Sol Solar, SDG&E's Wood to Steel project, and various others. More details are available upon request.

Other Relevant Experience

Training

- 2012 - Accounting and Finance for Non-Financial Managers, UCSD Rady School of Business Management
- 2010 - ESOP Planning and Management, UCSD Rady School of Business Management
- 2004 - Ground Penetrating Radar Field Methods and Interpretation Certificate
- 2002, 2010 - GPS Field Methods Training, ASC Scientific

Teaching

- 2008 - Assistant Professor, Archaeology, U.C. Davis
- 2008 - Instructor/ Principal Investigator, 2008 UC Davis Archaeology Field School, Vandenberg Air Force Base, California.
- 2005–2008 – Level III Teaching Assistant, U.C. Davis; taught discussion sections/ lectures for Human Evolution, Archaeology, and Human Ecology
- 1998–1999 – Acted as Public Education Coordinator for the Museum of Anthropology at UC Davis; included instructing a course teaching archaeology students how to inform the public about the value of anthropology through in-class presentations, exhibits, and the building of 'teaching trunks' for people in grades 1–12 of primary and secondary education
- 1997–1998 - Substitute teacher with an Emergency Credential in the Woodland and Davis Joint Unified School Districts for grades K–12, all subjects excluding foreign languages
- 1997–present – Regularly perform presentations about the value of archaeology in classrooms at the level of the grades 1–12
- 1996 – Teaching assistant at the U.C. Davis archaeological field school; job duties included student management and instruction in the methods of excavation and survey.

Publications

Selected Technical Reports

Hale, Micah J. 2010. "Limited Archaeological Excavations at SDI-4669 (SDM-W-12A)." In Advance of Geotechnical Coring, University House Rehabilitation Project, University of California at San Diego, La Jolla, California. Submitted to Ione Stiegler Architecture, La Jolla, California. Report on file at South Coastal Information Center, SDSU.

Hale, Micah J. 2010. Results of Archaeological Monitoring for Meteorological Masts in McCain Valley, San Diego County, California. Prepared for HDR Engineering Inc.

Hale, Micah J. 2007. Archaeological Survey of the Silver Lake Recreation Area, El Dorado Irrigation District, El Dorado County, California. Prepared for Trish Fernandez, El Dorado Irrigation District, El Dorado County, California.

Hale, Micah J. 2005. "Ground Stone Analysis." In From the Coast to the Inland: Prehistoric Settlement Systems Along the Las Pulgas Corridor, Camp Pendleton, California, by Micah J. Hale and Mark S. Becker. Report submitted to Southwest Division of Naval Facilities.

Hale, Micah J. 2005. Cultural Resources Inventory for the Proposed San Diego Model Schools Development Project. ASM Affiliates Inc., Carlsbad, California. Prepared for the City of San Diego, California.

Hale, Micah J. 2004. Cultural Resources Inventory for the Replacement of Bridge 230.6 over Agua Hedionda Lagoon, San Diego County, California. Submitted to North County Transit District, San Diego County, California.

Hale, Micah J. 2004. Cultural Resources Inventory for the Gawle Property, San Diego County, California. Submitted to Helix Environmental for the City of San Diego.

Hale, Micah J. 2004. Cultural Resources Inventory for the Hines Nursery, San Diego County, California. Submitted to Hines Nurseries, Rainbow Valley, California.

Hale, Micah J. 2004. Cultural Resources Inventory for the San Clemente Canyon Trunk Sewer Maintenance and Access Routes, San Diego County, California. Submitted to Metropolitan Wastewater Department, City of San Diego, California.

Hale, Micah J. 2004. Cultural Resources Inventory for the Montezuma Trunk Sewer Replacement, San Diego County, California. Submitted to Metropolitan Wastewater Department, City of San Diego, California.

Hale, Micah J. 2004. Cultural Resources Inventory for the Oceanside Hotel EIR, San Diego County, California. Submitted to Dudek for the City of Oceanside, California.

Hale, Micah J. 2004. Historic Resources Mitigation Monitoring of the El Cuervo Norte Project, San Diego County, California. Submitted to the City of San Diego.

Hale, Micah J. 2004. Emergency Test Excavations of an Exposed Olla, Riverside County, California. Submitted to BLM, Riverside County, California.

Hale, Micah J. 2004. Cultural Resources Monitoring for Geotechnical Coring Related to the All-American Canal Lining Project, Imperial County, California. Submitted to Imperial Irrigation District, Imperial County, California.

Hale, Micah J. 2004. Cultural Resources Monitoring of Geotechnical Coring Related to the Coachella Canal Lining Project, Riverside County, California. Submitted to Imperial Irrigation District, Riverside County, California.

Hale, Micah J. 2004. "Ground and Battered Stone Analysis." In Data Recovery Investigations at the Eucalyptus Site, CA-SDI-6954, San Diego County, California. Prepared by Don Laylander, ASM Affiliates Inc., Carlsbad, California. Submitted to EDAW, Inc.

Hale, Micah J. 2003. Cultural Resources Inventory for the Linda Vista Drive Re-Alignment Alternatives, City of San Marcos, California. Submitted to Nolte for the City of San Marcos.

Hale, Micah J. 2003. Cultural Resources Inventory for the Lake Murray Trunk Sewer Replacement, San Diego County, California. Submitted to the Metropolitan Wastewater Department, City of San Diego, California.

Hale, Micah J. 2000. Cultural Resource Monitoring Report. Jones and Stokes Associates Inc. Prepared for AT&T Corp., Atlanta, Georgia, for the AT&T cable removal project from Lucin, Utah, to Red Bluff, California.

Hale, Micah J. 2000. "Ground and Battered Stone Analysis." In Report on Excavations at Four Locations in the Lead Mountain Vicinity of the 29-Palms Marine Base, edited by Mark Basgall. Sacramento Archaeological Research Center.

Hale, Micah J. 2000. "Ground and Battered Stone Analysis." In Report on Excavations at CA-MER-295, edited by Mark Basgall and R. Bethard. Sacramento Archaeological Research Center.

Hale, Micah J. 2000. "Invertebrate Analysis." In Report on Excavations at CA-MER-295, edited by Mark Basgall and Mark Giambastiani. Sacramento Archaeological Research Center.

Hale, Micah J. 2000. "Site Reports for Sites SBR-9415 and SBR-9420." In Report on Excavations at Lead Mountain in Twentynine Palms Marine Corps Air Ground Combat Training Center, edited by Mark Basgall. Sacramento Archaeological Research Center.

Hale, Micah J. 1999. "Ground and Battered Stone Analysis." In Muddle in the Middle: Phase II Excavations of Five Sites in Kern County, California, edited by Mark Basgall. Prepared for V. Levulett, Environmental Management, Caltrans District 5, San Luis Obispo. Sacramento Archaeological Research Center.

Hale, Micah J., and Brad Comeau. 2009. Data Recovery Excavations at CA-SDI-18472 for the Proposed Padre Dam Municipal Water District Secondary Connection Project (Ridge Hill Facilities) Johnstown, San Diego County, California. Prepared for Mr. Albert Lau, Engineering Manager, Padre Dam Municipal Water District.

Hale, Micah, Brad Comeau, and Chad Willis. 2010. Class II and Class III Cultural Resources Inventory Report for the Tule Wind Project, McCain Valley, San Diego County, California. Prepared for HDR Engineering Inc. Report on file at the South Coastal Information Center, SDSU.

Hale, Micah J., and John R. Cook. 2005. Results of Ground Penetrating Radar Investigations at CA-SDI-10148 in the Forester Creek Biological Mitigation Site, San Diego County, California. With contributions by Jeffrey S. Patterson. Prepared for Chris White, Caltrans District 11.

Hale, Micah J., and Mark S. Becker. 2006. From the Coast to the Inland: Prehistoric Settlement Systems Along the Las Pulgas Corridor, Camp Pendleton, California. ASM Affiliates, Carlsbad, California. Submitted to Southwest Division of Naval Facilities.

Hale, Micah J., and Mark A. Giambastiani. 2010. A Cultural Resources Inventory for Sample Surveys in Selected Training Areas, Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, San Bernardino County, California. Prepared for Marine Air Ground Task Force Training Command, Natural Resources and Environmental Affairs, Twentynine Palms, California.

Hale, Micah, and Mark Giambastiani. 2010. Archaeological Resources Survey Report Aerial Maneuver Zone (AMZ) Project at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California, San Bernardino County, California. Prepared for Marine Air Ground Task Force Training Command, Natural Resources and Environmental Affairs, Twentynine Palms, California.

Hale, Micah, and Mark Giambastiani. 2010. An Archaeological Survey of 3,650 Acres at Cole Flat, Naval Air Weapons Station (NAWS), China Lake, California. Prepared for Mike Baskerville, Base Archaeologist, NAWS China Lake, California.

Hale, Micah J., Mark Giambastiani, Michael Richards, and David Iversen. 2009. Phase II Cultural Resource Evaluations at 51 Archaeological Sites in Management Regions 1A, 1B, 2B, 2C, and 3E, Bissell Hills and Paiute Ponds, Edwards Air Force Base, Kern and Los Angeles Counties, California. Prepared for U.S. Army Corps of Engineers under contract numbers W91238-07-F-0051 and W91238-07-F-0052.

Basgall, Mark, Lynn Johnson, and Micah Hale. 2002. An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California. Prepared for United States Marine Corps Air Ground Combat Center, Twentynine Palms, California. Prepared by Archaeological Research Center, Institute of Archaeology and Cultural Studies, Department of Anthropology, California State University, Sacramento.

Becker, Mark S., and Micah J. Hale. 2004. "Flaked Stone and Ground Stone Artifact Analysis." In Phase II Archaeological Testing and Evaluation of CA-INY-3647, CA-INY-3650/H, CA-INY-3826, and P-14-7356, Little Lake Rehabilitation, U.S. 395, Inyo County, California, edited by Brian Byrd and Seetha Reddy, ASM Affiliates. Prepared for Caltrans District 6, Fresno.

Byrd, Brian F., and Micah J. Hale. 2005. Testing and Evaluation of CA-SDI-13,930 on Camp Pendleton Marine Corps Base, San Diego County, California: A Paleoenvironmental Approach. ASM Affiliates, Carlsbad, California. Prepared for Southwest Division Naval Facilities Engineering Command.

Byrd, Brian F., and Micah J. Hale. 2004. Final Report on the Rose-Arizone Site Survey and Documentation, San Clemente Island. Prepared for Dr. Andrew Yatsko, NAVFAC SW, South Bay Area Focus Team.

Byrd, Brian F., and Micah J. Hale. 2004. Final Report on the San Clemente Island Protective Signing and Maintenance Project. Prepared for Dr. Andrew Yatsko, NAVFAC SW, South Bay Area Focus Team.

Byrd, Brian F., and Micah J. Hale. 2004. Final Report on the San Clemente Island Road Improvement Survey. Prepared for Dr. Andrew Yatsko, NAVFAC SW, South Bay Area Focus Team.

Byrd, Brian F., Micah J. Hale, and Sinéad Ní Ghabhláin. 2004. "Archaeological Testing at INY-3647." In Phase II Archaeological Testing and Evaluation of CA-INY-3647, CA-INY-3650/H, CA-INY-3826, and P-14-7356, Little Lake Rehabilitation, U.S. 395, Inyo County, California, edited by Brian Byrd and Seetha Reddy, ASM Affiliates. Prepared for Caltrans District 6, Fresno.

Byrd, Brian F., Micah J. Hale, and Sinéad Ní Ghabhláin. 2004. "Archaeological Testing at INY-3650/H." In Phase II Archaeological Testing and Evaluation of CA-INY-3647, CA-INY-3650/H, CA-INY-3826, and P-14-7356, Little Lake Rehabilitation, U.S. 395, Inyo County, California, edited by Brian Byrd and Seetha Reddy, ASM Affiliates. Prepared for Caltrans District 6, Fresno.

Byrd, Brian F., Micah J. Hale, and Sinéad Ní Ghabhláin. 2004. Archaeological Testing at INY-3826. In Phase II Archaeological Testing and Evaluation of CA-INY-3647, CA-INY-3650/H, CA-INY-3826, and P-14-7356, Little Lake Rehabilitation, U.S. 395, Inyo County, California, edited by Brian Byrd and Seetha Reddy, ASM Affiliates. Prepared for Caltrans District 6, Fresno.

Byrd, Brian F., and Micah J. Hale. 2003. Final Report on Extended Phase I Excavation at CA-INY-2207/2758, Little Lake Rehab Project, Inyo County, California. ASM Affiliates, Encinitas. Prepared for Lynn Faraone, Chief, Central California Cultural Resource Branch, California Department of Transportation.

Byrd, Brian F., and Micah J. Hale. 2002. Phase II Investigations of 15 Prehistoric Sites for the Cartago-Olancha Four-Lane Project, U.S. 395, Owens Valley, California. ASM Affiliates Inc. Prepared for Caltrans District 6, Fresno.

Byrd, Brian F., and Micah J. Hale. 2001. Research Design for Phase II Investigations of 14 Prehistoric Sites for the Cartago-Olancha Four-Lane Project, U.S. 395, Owens Valley, California. ASM Affiliates Inc. Prepared for Caltrans District 6, Fresno.

Cook, John R., Collin O'Neill, and Micah J. Hale. 2001. Archaeological Survey for the Amtrak Second Main Line, San Onofre Segment, MP 210.1 to 214.7, San Diego County. ASM Affiliates Inc. Draft report prepared for North County Transit District.

Giambastiani, M., M. Hale, M. Richards, and S. Shelley. 2008. Draft Report Phase II Cultural Resource Evaluations at 47 Archaeological Sites on the East and Northeast Shores of Rogers Lake, Management Region 3, Edwards Air Force Base, Kern and Los Angeles Counties, California. Report submitted to Edward Air Force Base, Base Historic Preservation Officer.

Giambastiani, G., M. Hale, S. Ni Ghabhláin, and D. Iversen. 2006. Phase II Cultural Resource Evaluation of 21 Archaeological Sites along the Western and Northwestern Boundary Fence, Edwards AFB, Kern and Los Angeles Counties, California. Submitted to Earth Tech Inc., Colton, California.

Hector, Susan, Micah J. Hale, and Catherine Wright. 2003. Cultural Resource Inventory of the Path 15 Los Banos-Gates Transmission Line Construction Project, Merced and Fresno Counties, California. Contract No. 03-186-01-01-ASM. Prepared for Steigers Corporation, Littleton, Colorado.

Laylander, Don, and Micah J. Hale. 2004. Data Recovery Excavations at Locus O, CA-RIV-45. ASM Affiliates Inc., Carlsbad, California. Submitted to Agua Caliente Band of Cahuilla Indians.

Reddy, Seetha N., and Micah J. Hale. 2003. Archaeological Survey of Portions of the De Luz Housing Area, O'Neill Lake, and the Case Spring Highlands, Marine Corps Base Camp Pendleton, California. ASM Affiliates, Encinitas, California. Prepared for NAVFAC SW, San Diego, California.

Whitley, David, and Micah Hale. 2010. Management Plan for the Coso Rock Art District National Historic Landmark. Prepared for NAVFAC SW, San Diego County, California.

Other Publications

Hale, Micah J. 2012. "Malcolm Rogers' Archaeology in Coastal San Diego." Book chapter in preparation; edited by Don Laylander.

Hale, Micah J. 2011. "Modeling Socioeconomic Discontinuity in Southern Alta California." In, California Archaeology 2:2: December 2010, pp. 203-250.

Hale, Micah J. 2010. "A Comment on Hildebrandt et al. (2009) Shellfish Transport, Caloric Return Rates, and Prehistoric Feasting." In California Archaeology 3:111-113.

Hale, Micah J. 2009. Santa Barbara and San Diego: Contrasting Adaptive Strategies in Southern California. PhD dissertation; University of California, Davis.

Hale, Micah J. n.d. Preserving Cultural Heritage Through Public Outreach: A Curriculum for Jr. High and High School.

Hale, Micah J. 2005. Processing Economies, Coastal Settlement, and Intensification in Northern San Diego County. In Proceedings of the Society for California Archaeology, Volume 18.

Hale, Micah J. 2001. Technological and Social Organization of the Millingstone Horizon in Southern California. Master's thesis; California State University, Sacramento.

Hale, Micah J. 2000. Consumer Anthropology: Theory and Method of Recognizing and Interpreting Consumption Patterns for Product Development and Marketing Strategies. Developed for Richard Knight, Director of Intelligent Products, Addidas, USA.

Hale, Micah J., Richard McElreath, and Robert Bettinger. 2012. (in prep.) Modeling Time Minimizing and Energy Maximizing Adaptive Strategies.

Hale, Micah J., and Peter Richerson. 2012. (in prep.) Investigating the Rate-Limiting Factors of Cultural Evolution: Archaeological Evidence from Southern California.

Hale, Micah J., and Bruce Winterhalder. 2012. (in prep.) Discontinuous Sociocultural Evolution

Editorial Reviewer

Hale, Micah J. 2011. Editorial Reviewer, *Journal of California Archaeology*, Left Coast Press, California.

Hale, Micah J. 2011. Editorial reviewer, *Journal of California and Great Basin Anthropology*, Malki Museum Press, California.

Hale, Micah J. 2010. Editorial reviewer, *Pacific Coast Archaeology Society*, California.

Presentations

Hale, Micah J. 2012. *The Data Matter: Contributions of the Sacramento State Archaeological Research Center*. Presented at the 2012 Society for California Archaeology Meetings, San Diego, California.

Hale, Micah J. 2012. *Andy Yatsko, the Human Transit: Celebrating His Lifetime Contributions*. Presented at the 2012 Society for California Archaeology Meetings, San Diego, California.

Hale, Micah J. 2012. *Malcolm Rogers' Work Along the San Diego Coast*. Presented at the 2012 Society for California Archaeology Meetings, San Diego, California.

Hale, Micah J. 2011. *Tracing the Origins of Processing Economies in the Far West: A View from Coastal Southern California*. Presented at the Yucca Valley Archaeopalooza Conference, 29 Palms, California.

Hale, Micah J. 2011. *Adaptive Divergence Among Southern California Hunter Gatherers*. Presented at the 2011 Society for California Archaeology Meetings, Rohnert Park, California.

Hale, Micah J. 2011. *A 10,000 Year Old Habitation at the University House, La Jolla: Implications for Trans-Holocene Socioeconomic Stability in San Diego*. Presented at the 2011 Society for American Archaeology Meetings, Sacramento, California.

Hale, Micah J. 2010. *Using the Ideal Free Distribution to Model Socioeconomic Discontinuity Among Hunter-Gatherers*. Paper presented at the 2009 Society for American Archaeology Meetings, St. Louis, Missouri. Micah Hale, Symposium Chair.

Hale, Micah J. 2005. *Investigating the Role of Acorns in Southern California Hunter-Gatherer Economies*. Guest Speaker at the Antelope Valley Archaeological Society Meeting.

Hale, Micah J. 2005. *Processing Economies, Coastal Settlement, and Intensification in Northern San Diego County*. Presented at the Society for California Archaeology, Sacramento.

Hale, Micah J. 2004. *Cultural Resource Management in Practice: An Overview of Methodological Approaches*. Presented at the Imperial Valley Desert Museum Annual Meetings.

Hale, Micah J. 2003. *The Adaptive Significance of Technological Organization during the Holocene in Southern California*. Discussant in a symposium entitled, *Change and Cultural Adaptations Along the California Coast*. Organized by Seetha Reddy for the 68th Annual Meetings of the Society for American Archaeology, Milwaukee, Wisconsin. David Yesner and Roger Colten, Chairs.

Hale, Micah J. 2003. *The Organization of Subsistence Technology in Southern California During the Holocene*. Guest Speaker for the San Diego County Archaeological Society, January 28, 2003, San Diego.

Hale, Micah J. 2002. *Prehistory Along the Southwestern Shore of Owens Lake: Preliminary Results from the Cartago-Olancha Project*. Presented at the 2002 Northern California Data Sharing Meetings, Society for California Archaeology, Santa Cruz, California.

Hale, Micah J. 2002. *Ground and Battered Stone Along the Western Shores of Owens Lake*. Presented at the 2002 Northern California Data Sharing Meetings, Society for California Archaeology, Santa Cruz, California.

Hale, Micah J. 2001. *Technological and Social Organization during the Millingstone Horizon of Southern California*. Presented at the Society for California Archaeology Annual Meeting, Modesto.

Hale, Micah J. 1999. *The Analysis Method of Formatting Presentations and Lesson Plans in Archaeology*. Presented at the Society for American Archaeology 64th Annual Meeting, Chicago, Illinois.

Hale, Micah J. 1998. *A Practical and Effective Method for Teaching Archaeology to the Public*. Presented at the Society for California Archaeology Annual Meeting, San Diego, California.

Awards/Commendations

- 2010 – NAVFAC SW, Camp Pendleton, Research Grant, $59,000
- 2008 – U.S. Air Force, Vandenberg AFB, Radiocarbon Grant, $25,000
- 2008 – Fieldwork Fellowship, Graduate Studies, UC Davis, $2,010
- 2007 – Fieldwork Fellowship, Graduate Studies, UC Davis, $1,800
- 2006 – Fieldwork Fellowship, Graduate Studies, UC Davis, $5,650
- 2005–2009 – Graduate Fee Fellowship/Stipend, UC Davis, $74,500

Clearances

- Department of Defense (DoD) High-Security Clearance for SPAWAR, Naval Base Point Loma, NALF San Clemente Island, Vandenberg Air Force Base, MCAGCC 29 Palms, Edwards Air Force Base, NAWS China Lake, Yuma Proving Grounds, and MCB Camp Pendleton

CULTURAL RESOURCES EVALUATION

Bloomington Distribution Project
San Bernardino County, California

Prepared for:

Christine Donaghue
Sr. Project Manager
Michael Baker International
3536 Concours Street, Suite 100
Ontario, California 91764

Prepared by:

David Brunzell, M.A., RPA, and Kara Brunzell, M.A.
BCR Consulting LLC
1420 Guadalajara Place
Claremont, California 91711

Project No. MBI1602

Data Base Information:
Type of Study: Intensive Survey
Resources Recorded: Historic-period Buildings at 11109, 11141, and 11191 Linden Avenue; 11138, 11150, 11166, 11174, 11188, and 11260 Cedar Avenue; and 18604 Jurupa Avenue in the Bloomington Community of San Bernardino County
Keywords: Historic-period buildings, Ritner Sayles, Gerald A. Smith, San Bernardino County Museum
USGS Quadrangle: 7.5-minute *Harrison Mountain, California* (1996)

BCRCONSULTING LLC

July 21, 2016

MANAGEMENT SUMMARY

BCR Consulting LLC (BCR Consulting) is under contract to Michael Baker International to complete a Cultural Resources Evaluation of the proposed Bloomington Distribution Project (project) in the Community of Bloomington, San Bernardino County, California. Tasks for the current study are partially based on recommendations from the *Cultural Resources Study for the Bloomington Distribution Project*, and have been completed pursuant to the California Environmental Quality Act (CEQA). The project comprises 14 parcels on approximately 35 acres that are being consolidated for redevelopment. Ten of the parcels contain historic-period cultural resources that require evaluation for California Register of Historical Resources eligibility (i.e. significance under CEQA).

None of the 10 addresses that contained historic-age (i.e. over 45 years old) cultural resources within the project site are eligible for listing in the California Register. As a result the proposed project is not likely to impact any significant historical resources under CEQA. However, BCR Consulting recommends that, prior to demolition, the interior of the Ritner Sayles buildings at 11260 Cedar Avenue be examined for any artifacts associated with Sayle's archaeological discoveries. Any artifacts present would not be in archaeological context and would not require official curation. However, if any artifacts are present they should be offered to the Bloomington Preservation Foundation and Historical Society for display. Finally, if previously undocumented cultural resources are identified during proposed project activities, a qualified cultural resource professional should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

TABLE OF CONTENTS

MANAGEMENT SUMMARY ii
INTRODUCTION AND PROJECT DESCRIPTION 1
PERSONNEL 1
RESEARCH DESIGN 1
METHODS 3
RESEARCH 3
FIELD SURVEY 3
RESULTS 3
RESEARCH 3
FIELD SURVEY 8
SIGNIFICANCE EVALUATIONS 12
SIGNIFICANCE CRITERIA 12
EVALUATIONS 13
RECOMMENDATIONS 17
REFERENCES 19

FIGURES

1: Project Location Map 2

APPENDICES

A: DEPARTMENT OF PARK AND RECREATION 523 FORMS
B: HISTORICAL SOCIETY COMMUNITY CONSULTATION

INTRODUCTION AND PROJECT DESCRIPTION

BCR Consulting LLC (BCR Consulting) is under contract to Michael Baker International to complete a Cultural Resources Evaluation of historic-period cultural resources at the Bloomington Distribution Project (project) in the Bloomington Community of San Bernardino County, California. Tasks for the current study are partially based on recommendations from the *Cultural Resources Study for the Bloomington Distribution Project* (Dorrler and Hale 2015), and have been completed pursuant to the California Environmental Quality Act (CEQA). The project comprises 14 parcels on approximately 35 acres that are being consolidated for redevelopment. Ten of the parcels contain historic-period cultural resources that require evaluation for California Register of Historical Resources eligibility (i.e. significance under CEQA). The proposed development includes the construction of a 671,000 square foot distribution building, a detention basin, and landscaping along Cedar Avenue, Linden Avenue, and Jurupa Avenue. It is surrounded by residential properties to the south, and low-density rural residential and industrial properties to the north, east, and west. The project site is located in Section 27 of Township 1 South, Range 5 West, San Bernardino Baseline and Meridian. The project is depicted on the United States Geological Survey (USGS) *Fontana, California* (1980) 7.5-minute topographic quadrangle (Figure 1).

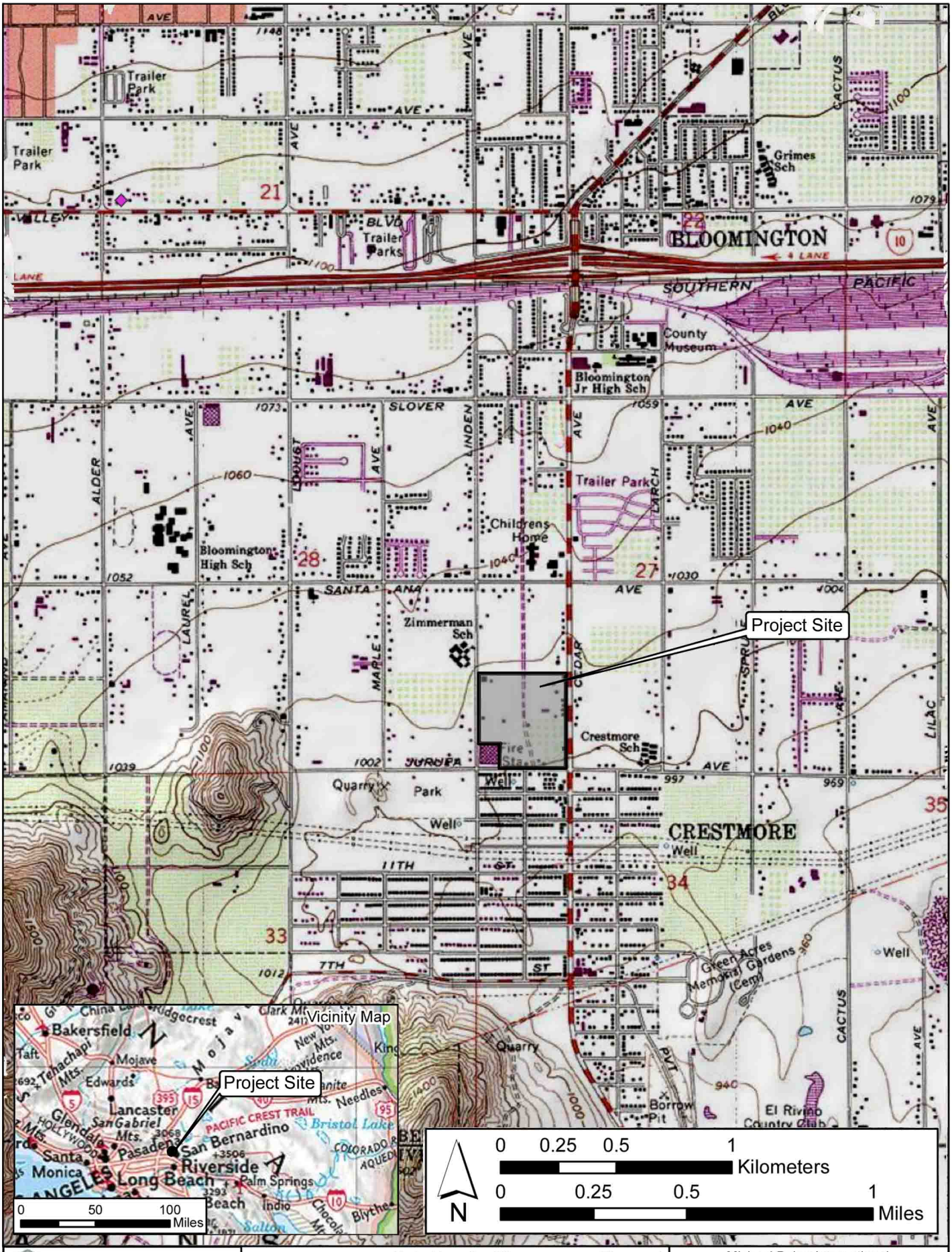
PERSONNEL

David Brunzell, M.A., RPA acted as the Project Manager and Principal Investigator for the current study, and also carried out the fieldwork. BCR Consulting Architectural Historian Kara Brunzell, M.A. directed the land-use history research through various repositories, and completed the architectural descriptions and the required Department of Park and Recreation (DPR) 523 forms. David Brunzell and Kara Brunzell co-wrote the technical report.

RESEARCH DESIGN

This work was completed pursuant to CEQA, the Public Resources Code (PRC) Chapter 2.6, Section 21083.2, and California Code of Regulations (CCR) Title 14, Chapter 3, Article 5, Section 15064.5. This study is intended to determine whether cultural resources identified during the original assessment completed for the project (see Dorrler and Hale 2015) are significant pursuant to the above-referenced regulations and standards, and to develop specific mitigation measures that will address potential impacts to existing or potential resources. Tasks pursued to achieve that end include:

- Land use research through various local and regional archives and repositories
- Fieldwork to locate, photograph, and describe any cultural resources within the project boundaries
- Evaluation of California Register of Historical Resources (California Register) eligibility for any cultural resources discovered
- Development of recommendations and mitigation measures for cultural resources documented within the project boundaries, following CEQA
- Completion of DPR 523 forms for any discovered cultural resources
- Preparation of this technical report.



BCRCONSULTING LLC
Claremont Napa Tehachapi
www.bcrconsulting.net
909-525-7078

Project Location Site
Bloomington Distribution Project

Figure 1

Reference: ESRI; USGS Quad: *Fontana, California* (1980)

Michael Baker International
3536 Concours Street, Suite 100
Ontario, California 91764

METHODS

Research

BCR Consulting performed land-use history research through records of the San Bernardino County Historical Archives, the office of the San Bernardino County Assessor and Recorder, records of the Bureau of Land Management and General Land Office, the Bloomington Preservation Foundation and Historical Society, the Fontana Historical Society, the Bloomington Branch of the San Bernardino County Library, and various Internet resources. This research is performed to provide the land use history of the project site, and to provide a historic context for any historic-period cultural resources within its boundaries.

Field Survey

Preparation for the field survey involved a thorough review of modern and historic aerial photos and topographic maps, and review of the *Phase I Environmental Site Assessment Northwest Corner of Cedar and Jurupa Avenues Bloomington California* (Mape 2014) and of the cultural resource study completed for the project (Dorrler and Hale 2015). Since the previous identification efforts failed to yield significant archaeological cultural materials located within the project site boundaries, BCR Consulting personnel qualified to perform historic-architectural resource fieldwork were assigned to inventory and evaluate the project site for historic-period (i.e. over 45 years old) buildings. Digital photographs were taken at various points within the project site. These included overviews as well as detail photographs of all cultural resources. Cultural resources were recorded per the California OHP *Instructions for Recording Historical Resources* in the field using:

- Detailed note taking for entry on DPR Forms (see Appendix A)
- Hand-held Garmin Global Positioning systems for mapping purposes
- Digital photography of all cultural resources (see Appendix A).

RESULTS

Research

Research was performed for the project site to provide a context for the historic-period buildings located within its boundaries. A brief general history for the region is followed by historic contexts for each of the properties that contain historic-period buildings, organized by address. Please note that figures (including photographs and historic maps) and all citations are included for this section in Appendix A.

Bloomington History. The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called “farm lots.” The project site is directly south of the original Bloomington plat, near the southern border of the company’s holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a

railway line from Bloomington to Crestmore that ran through the center of lots 387 and 394, which comprise the current project site.

Lot 387 West. Lot 387 was subdivided into 10-acre parcels with an easement between for the railway after the turn of the 20th century. The western half of lot 387 was originally subdivided into a single 10-acre parcel that comprises the current addresses of 11109, 11141, and 11191 Linden Avenue. By 1915, Edward A. and Anne Featherstone owned the property and built the Craftsman house that still occupies its northwestern corner. A Chicago native, Featherstone was born in 1876, the youngest child of Ruth and John Featherstone. John Featherstone ran a foundry, and the family was wealthy. In 1897, Featherstone married Anne Robinson, who was a year younger. Anne was a member of a socially prominent Chicago family and a Daughter of the American Revolution. The young couple lived in Chicago, where Featherstone listed his occupation as "broker." Shortly after the turn of the century, they relocated to Los Angeles, where Featherstone operated automobile-related businesses. They lived in the fashionable neighborhood near the University of Southern California campus southwest of downtown. He was an investor in Durocar (a company that began manufacturing cars in Los Angeles in 1907), and owned a tire company and an oil company as well as a company that manufactured and sold automobile accessories. Their son Edward Allyn was born in 1916.

Featherstone's auto-related investments were apparently successful, and Anne and Edward continued to enjoy the privilege they had grown up with in Chicago. In 1920, it was still common for families of means to have a live-in maid, but the Featherstone family of three had a live-in staff of four to cook, clean, drive, and care for young Edward Allyn. Featherstone also invested in a yacht-building company, and purchased a racing yacht that he would sail to Catalina. The subject parcel is likely to have been the wealthy family's "country home," where they raised poultry and bred dogs for competitions. Except for the original house and some sheds and small outbuildings, the property was planted in orchards. In 1928, E.A. Featherstone appears in the San Bernardino County telephone directory for the Bloomington area, but no address is listed. The outbuildings appear to date from the same era as the house, and were probably associated with agriculture and animal husbandry on the property.

About 1932, the Citizens' National Savings Bank of Los Angeles acquired the parcel, and held onto it for the next decade. The house and orchard on the property were presumably rented or leased during this period. In 1942, Ely and Laura C. Johnson, aged 45 and 40, purchased the parcel. The Johnsons were African-Americans from Louisiana. In 1930, Ely worked as a chauffeur and Laura as a cook in Los Angeles. By 1938, the couple lived in a home they owned in Los Angeles with a teenage niece. They also owned and co-operated a liquor store. Research has not revealed if they moved to the Bloomington farm after their purchase, but they owned other property and resold the Linden Avenue parcel two years later, so it is likely to have been an investment rather than a home.

Werner and Elizabeth Hofmann bought the property in 1944. Werner was an engineer who designed tools and the Hofmanns lived in Montebello before moving to Bloomington. The couple, who were in their mid to late twenties when they bought the house, resided on the property until at least 1965. A daughter, Doris Elizabeth, was born to the couple in the

1940s. Voter registration documents show Werner and Elizabeth Hofmann living on South Linden Street in Bloomington from 1946 to 1964. The Hofmanns removed the orchards from the parcel during the 1950s, and in the early 1960s subdivided the parcel into 11109, 11141, and 11191 Linden Avenue. After subdividing, the Hofmanns retained 11109 and 11141, and sold the southern-most parcel at 11191 to Eugene and Virginia Patterson. While under the Patterson ownership, the current house that occupies 11191 was built in 1965. The Pattersons sold to Walter Keinle, who resold to Sharon and Paul Beaulieu. The Beaulieus were living in the house when their son was born in 1974. Two years later, they sold the house to Wanda Bouchelle, who almost immediately resold to current owners Roger and Mary Jaynes. Roger Jaynes grew up in Riverside, and he married fellow Riverside native Mary Tino in 1962. The couple has lived in the house and they operate an apiary on the property.

In the 1970s, John and Sharon Heydenreich owned and lived at the original house at 11109 Linden Avenue, and also owned 11141 Linden Avenue. After 1975, city directories show the house at 11109 vacant most years, although it may have been occupied and its residents were not listed. Donal and Barbara Howell owned 11109 and 11141 from 1980 to 1998. Donal Howell appears as a resident at the address in 1992, and the couple apparently resided there during the entire 18 years they owned the property. Aerial photographs indicate that the Howells moved two houses to 11141 Linden Avenue. In 1998, they sold both parcels to current owners George and Betty Walters. The Walters lived at 11109 until about 2008, but the house is currently unoccupied.

Lot 387 East. Like its western counterpart, the eastern half of lot 387 was originally subdivided into a single 10-acre parcel that comprises the current addresses of 11134, 11138, 11150, 11166, 11174, and 11188 Cedar Avenue. Research has not revealed any significant development to this portion of lot 387 prior to 1928. By 1928, Louis Rapellin owned the northeast portion of Lot 387 (which included today's 11134 and 11138) and Rene Rapellin the southeast portion (today's 11150, 11166, 11174, and 11188). Unlike most of the surrounding land, the five-acre parcels were not planted in orchards during this period. Based on improvement values recorded in Block Books, a house or small farm building on the north parcel (at 11134 -no longer present) was constructed in 1930. By 1938, there was also a house on Rene's parcel to the south, also no longer present.

Wendell C. and Elizabeth Pynch acquired the northeast portion of Lot 387 in 1937. Wendell was born in 1905 in Wisconsin to Jenner and Joan Pynch. Jenner taught at Wesleyan in Mitchell South Dakota when Wendell was a young child. In the 1920s, Pynch married Elizabeth Shay. Elizabeth was three years younger and a Kansas native. Her father, Joseph Shay, was a blacksmith, and her mother's name was Mary. Wendell and Elizabeth had seven children between 1925 and 1935, moving around Colorado and Montana before settling in Bloomington. House numbers have changed since the 1930s, so it is difficult to connect people definitively to particular houses. By 1938, there were two houses in the northern portion the parcel, neither of which remains. The family lived in one, and rented the other to Elizabeth's mother Mary Shay and her sister Rosetta. Mary Shay was 60 at the time, and worked as a seamstress for a federal relief program. Wendell worked the ranch and also worked as a carpenter to make ends meet. The family suffered a tragic loss at the end of 1939, when Wendell turned his car into the driveway

and hit Michel, the youngest child. The toddler was struck and killed. In 1943, the family sold the property to Thomas and Ellen O' Brien.

No biographical information is available about the O'Briens, who sold to Jim and Ruby Pound in 1946. Jim was born in Texas and Ruby in Oklahoma, both shortly after the turn of the century. Their son James was born in 1927 and their daughter Lottie in 1933, and later sons Cleburn and David. Jim was a pipe-fitter and later a cement worker, and the family lived in Texas through 1930s, moving to Riverside about 1939. They moved to Bloomington, first living on Commercial Street before purchasing the northeastern portion of Lot 387. The Pounds may have built the first house on the southern portion of the parcel at 11138 Cedar Street, which appears on aerial photographs by 1948. The family was living on the property in 1955 when 14-year-old David Pound died, and was still there in 1958. The house currently at 11138 Cedar Street took shape by 1959. It is likely that an addition to the small original house brought the house to its current L-shaped form, although the original house may have been demolished. If the original house was retained, subsequent remodels have removed any remaining historic fabric. In 1958, Leslie and Mary Rodgers were living at 11138 Cedar Avenue, possibly in the new house. The Pounds also continued to reside on the property, although it is not known who lived in which house. The Pound family held onto the rest of the property until 2003, when James Pound, Jr. sold to present owners Tomas and Karen Araujo. The Araujos also purchased the house at 11138 Cedar Street, but they resold that parcel to Juan Estudillo in 2005.

In 1937, Rene Rapellin sold the southeast portion of Lot 387 to Jenner and Joan Beebe Pynch (spelled Pinch on some documents). Jenner was a ranch foreman and Joan was a teacher during this era. The couple lived in Los Angeles in 1940. They appear to have purchased the lot in order to invest in son Wendell's ranching venture (Wendell purchased the northeast quarter of Lot 387 about the same time). The Pynch family built the house near the southern parcel boundary (11188 Cedar Avenue) in 1938, although the original address was 872 South Cedar Avenue. Jenner and Joan Pinch moved into the house in the 1940s, living there until at least 1948.

The Pynch family began subdividing the parcel in 1946, selling the 132-foot-wide strip of land at the south end of the parcel (11188) on which the original house was sited to Notie and John R. Berry. The Berrys were both Midwesterners, and reaching retirement age when they moved to Bloomington. They had lived and raised their children in Alhambra and later the San Fernando Valley, where John Berry was a farm foreman. The Berrys planted a small orchard at the southeastern corner of the parcel. About 1948, they built a second house on the property, to the north of the original house and closer to the street. In 1958, voter registration documents show John Rescum Berry and Mrs. Notie Agnes Berry living at 11188 Cedar Avenue, probably in the newer house. They lived on the property until at least 1964. The property changed hands several times beginning in the 1980s. Current owners George and Betty Walters purchased it in 2000.

In 1947, the Pynchs sold the 66-foot-wide strip of land at 11150 Cedar Avenue to Lee and Exia Shinn. The Shinns constructed the current house the same year. Although the current building is in the same general location as the 1947 house, it has clearly been altered and enlarged over the years. The side-gabled central wing of the house with its more steeply-pitched roof is probably original. The couple almost immediately resold to Martin T.

Pflueger. Research has not revealed evidence of Pflueger living in Bloomington, although he owned the house through at least 1950. Bernard and Mary Schlosser lived in the house by 1958. Bernard was born in Nebraska in 1902, and came to Bloomington to work for Kaiser Steel in the 1940s. He died in 1967, while Mary Schlosser lived until 1990. Mary left the property soon after Bernard's death and by the 1970s, Bertha and Ray Latham owned 11150 Cedar Avenue. They did not reside in Bloomington, however, and sold to Anastacio and Anita Garcia in 1981. The Garcias lived in the house. Research has not revealed when the back house and ancillary dwellings were built, but based on construction details they probably date from the 1980s when the Garcias owned the house. They appear to have altered the main house in the 1990s, adding the front-gabled wing near the street and replacing windows. Anastacio died in 2000, and in 2003 Richard Linares acquired the property. He sold to current owner Jose Marmolejo in 2005.

Also in 1947, the Pynchs sold the large center portion of the parcel (11166 and 11174 Cedar Avenue) to Bock and Edna Mae Bleeker. Edna Mae and Exia Shinn were sisters. Born in 1904 and 1905, Bock and Edna Mae Bleeker farmed in Texas (where their son Vernon was born) until the 1940s. The Bleekers built the house to the south at 11174 Cedar Avenue about 1956. The house at 11166 on the north half of the Bleeker property was constructed about 1960. The Bleekers were members of the Rialto Jehovah's Witness church. Bock Bleeker died in 1969, and Edna Mae in 1973. She lived at 11166 Cedar Avenue until her death. Vernon and Lola Bleeker inherited the two houses after Edna Mae's death. Vernon lived in Rialto. They split the parcel and sold the house at 11174 Cedar Avenue in 1977. It changed hands many times before current owners George and Betty Walters purchased it in 2007.

Lot 394. The Bloomington Land Company (a real estate company) owned much of the land in the neighborhood in the years after the turn of the twentieth century. By the 1910s, an entity named the Bloomington Improvement Company (probably the same company with a new name) owned the land. Lot 394 was subdivided in 1917, when E.A. Featherstone purchased the roughly nine acres east of the railroad, currently designated 11260 Cedar Avenue. Ruth P. McKinley purchased the parcel in 1927. McKinley was a Missouri native, where she was born about 1860. The McKinley family built the house at 11260 Cedar Avenue about 1929. (The original address was 894 Cedar, current address numbers on Cedar Avenue date from the 1950s). By 1930, 70-year old Ruth was living on the property with adult children Neal and Gertrude as well as Gertrude's husband Dewey. Neal, a farmer, raised chickens on the property. Matriarch Ruth died in 1931, and the family sold the property the following year.

Martha P. and Ritner (Ratner) Sayles bought the house and chicken ranch in 1932. The Pennsylvania natives were both born about 1890. Martha Preston married Ritner Sayles about 1925, and the couple relocated to California. Their son, Ritner Preston Sayles, was born in Riverside in 1927. They had a dairy in Bloomington on a rented property before buying the McKinley place. The family attended Bloomington's First Congregational Church, where Martha played piano. Martha worked in mental health care. Ritner planted a citrus orchard on the north half of the property. By the late 1940s, the whole property was devoted to the orchard. He continued to list his occupation as "dairyman," so may have continued to operate the rented dairy. In 1936, nine-year-old Ritner Preston Sayles

Jr. contracted pneumonia and died after five days in the hospital. The second house on the parcel, which fronts onto Jurupa Avenue east of the railroad tracks, was constructed about 1939 after the Sayles family purchased the property. They lived in the house on Jurupa and used the older house as a rental. Originally, it shared the address 894 Cedar Avenue with the McKinley house, although it faced Jurupa Avenue. Martha died in 1940, and Ritner continued living on the property. He was an avid amateur archaeologist, and participated in uncovering significant San Bernardino County sites in the 1930s and 1940s. He was a cofounder of the San Bernardino County Museum, and became its director emeritus after he retired from farming. The museum was located near the Sayles' property in Bloomington for decades before moving to Redlands in 1975. Sayles owned and lived on the property through at least 1958, and he died in 1982.

Sayles rented the McKinley house to Gerald A. Smith in the 1940s, who lived there with his wife Maxine and young daughter. Maxine Smith was a psychiatrist, and Gerald an educator and superintendent of Bloomington schools. Like Sayles, Smith was an avocational archaeologist. In 1952, he helped launch the San Bernardino County Museum, which later moved to Redlands. The family was living in the old McKinley house on Cedar Avenue when their son was born in July of 1946 until at least 1949. After 1952, the McKinley house was rented to a succession of short-term residents. Current owners Ami and Phoebe Deckel acquired the property in the early 1980s.

The majority of the western half of Lot 394 was not developed during the historic era. Citizens National Bank acquired the small irregularly-shaped lot west of the railroad tracks in 1932. An entity called Properties, Inc. bought that property in 1933, and sold to Ely and Laura Johnson in 1941. They sold to William and Amy Miller in 1945. The property remained undeveloped through the 1950s, and during this period was owned and farmed by the successive owners of the west half of Lot 394. In the early 1960s, the building at 18604 Jurupa was constructed. It was built to be Bloomington's second fire station. When the San Bernardino Freeway was constructed a few years later, however, it cut the neighborhood off from the northern part of Bloomington, so it was no longer a practical location for a fire station. By the 1970s, the building housed the Bloomington Contact Station, also called Bloomington Neighborhood Services Center, where low-income residents could get blood pressure checks and take advantage of other health and social services. In 2014, the building opened as a recreation center, offering after-school children's enrichment classes and other activities.

Field Survey

During the field survey BCR Consulting personnel carefully inspected the project site and identified the historic-period buildings that comprise many of the site's buildings. Architectural descriptions are included below for the historic-period buildings. DPR 523 Forms are included with photographs for each of these resources in Appendix A.

11109 Linden Avenue. The property is enclosed with a concrete and metal fence and there is a driveway on each side of the main building. The yard is full of trees at the sides and in front of the house.

The building is rectangular and has a cross-gabled composition shingle roof. Wide overhanging eaves are open, with exposed rafter tails and purlins. There are paired eight-light wood frame casement windows on the main façade with smaller one-over-one double-hung wood sash at the sides and at least one aluminum replacement at the rear. The house is clad in alternating rows of large and small wood shingles. There is a front porch centered under the gable on the west elevation. Its floor is concrete, and accessed via a sidewalk and concrete steps. There are heavy wood porch supports, and also porch supports and low porch wall of uncoursed cut stone masonry (see photos 1-6 of DPR, Appendix A). The east elevation features two smaller gables. There is an entrance on the east elevation that is covered by a metal screen door and accessed by a set of concrete steps (photos 12-15). A storage area covered by a metal awning is directly adjacent to this entrance (photos 14-15). Farther back on the property to the east is a wooden shed with a gabled roof topped with a combination of corrugated metal and composition shingle (photos 22-30). An addition on the southwest corner has a shed roof of corrugated metal (see photos 24-26). Cladding is vertical unpainted wood boards, and there are wooden doors on the south elevation (photo 26). The north elevation has a wooden door repurposed from a single-car garage (photo 29).

11141 Linden Avenue. The yard consists of gravel all the way to the edge of the road. There is a high chain-link fence between the road and the nearest building, and another metal fence behind it. There are trees and gravel in between the fences. A driveway leads into the property through both rows of fences.

There is a roughly rectangular house behind the second fence. The yard is mostly grass, shrubs, and trees; the driveway leads to a metal garage door on the west elevation, and there is a small concrete area directly in front of the house that connects to the driveway. The roof is composition shingle and cross-gabled. It has overhanging eaves with decorated verge boards on the gables and exposed brackets elsewhere. The house is clad in stucco, besides for a portion of the north elevation which is board siding. The other part of the north elevation consists of an integral porch with concrete floor and wrought iron supports, accessed by a set of concrete steps with wrought iron balustrade that lead to a door at the center of the elevation. Windows and doors are covered in wrought iron grates, except one boarded up window on the west elevation. There is a brick chimney on the west elevation. The east elevation includes a porch with wooden supports and a corrugated metal shed roof. Farther back on the property, to the east of the house, are several sheds and warehouses. Most notable are a pair of gabled buildings and a large skeletal structure.

11191 Linden Avenue. There are paved sidewalks across the street from the property, but not in front of it. The front yard consists of a lawn with three trees, one of them inside a ring of flowering shrubs, surrounded by a decorative wrought iron and brick fence. The fence is lined with shrubs along the inside and flowers along the outside. Between the fence and the street is a strip of grass with three smaller trees in it. A low brick planter runs along the front of the house and contains various plants and shrubs. There is a driveway on either side of the house; the one to the south is paved, while the one to the north is dirt and leads into a road that runs farther back into the property and is lined by a row of

shrubs on the other side (see photos 6-7 of DPR, Appendix A). A sidewalk leads between both driveways and the front door.

The house is L-shaped and cross-gabled with a wood shingle roof. The front façade is brick veneer and the other walls are clad in stucco (photos 1-4, 8-13). Windows are single hung vinyl replacement with applied decorative muntins. The main elevation faces west and has one main gable to the north and a subordinate asymmetrical gable at the center (see photos 1-3). The main entrance is immediately north of the smaller gable and consists of a modern wooden door with a decorative oval window inset (photo 3). There is a metal garage door with a row of windows along the top at the south end of this elevation. The back yard includes grass and a patio sheltered by a latticed wooden awning directly behind the house. This patio is accessed by a partially glazed nine-light wooden door (photos 10-12). There are several metal sheds behind the house (photos 14-17).

11138 Cedar Avenue. A sidewalk runs in front of the property, which is used by truck repair and diesel parts facilities. The yard is paved and surrounded with a chain-link fence. The house is set back considerably from the street. It has an L-shaped plan and composition shingle roof. It is clad in stucco with vinyl slider windows of various sizes with interior muntins. There is a large brick chimney on the north elevation.

11150 Cedar Avenue. A sidewalk runs in front of the property and there is a wrought iron and concrete masonry unit fence that separates it from the yard. There are driveways on either side of the yard which has hardscape, grass, wooden planting beds, and palm trees. The house is cross-gabled with a composition shingle roof and is clad in stucco. Windows are mostly aluminum sliders, besides one large vinyl window with interior muntins on the east elevation. There is an attached carport at the north elevation, which shelters an entrance through a wooden door. There is also an entrance on the south elevation sheltered by metal awning, and a metal fence encloses the paved back yard.

There are several other buildings on the property. One is a similar-sized house directly behind the front house, with a gabled composition shingle roof and stucco cladding. There are two other buildings, also with gabled roofs and stucco cladding. These small buildings appear to be ancillary dwellings or storage areas consisting of a single room each.

11166 Cedar Avenue. There is a sidewalk in front of the house and it is enclosed in with a chain-link fence. There is a driveway that leads to the double garage from the east, and a paved front yard. The house fronts onto Cedar Avenue with its main façade on the east. It is cross-gabled with a composition shingle roof. Walls are stucco and windows are aluminum sliders. The main entrance has a metal screen door. There is a wooden play structure at the southeast corner of the yard near the street. The house appears to be in poor condition. Its details are difficult to observe because of furniture, tires, bicycles, household items, and cars stored on the property adjacent to the house.

11174 Cedar Avenue. There is a sidewalk in front of the house and it is enclosed in a low chain-link fence. There is a driveway that leads into the property from the east and a front yard, which is mostly dirt with grass and a few small trees and potted plants. The house is roughly L-shaped and cross-gabled with a composition shingle roof. Walls are stucco and

windows are mostly horizontal sliders with interior muntins. The main entrance, on the east elevation, is covered by a metal screen door. An articulated metal door is fitted to the double garage north of the main entryway. A large recreational vehicle is stored in the front yard, and at the time of the field visit a commercial truck was parked in the driveway. These vehicles block much of the main façade.

11188 Cedar Avenue. The property is surrounded by a high chain-link fence and there are two buildings on it fairly close to one another. The building closer to Cedar Avenue has a lawn with trees in front of it within the fenced area and a concrete driveway that leads to the recessed garage, accessed from the east (see photos 1-2 of DPR, Appendix A). This building is L-shaped with a -hipped composition shingle roof. It is clad in stucco. Windows are mostly double-hung, with two that are painted over on the east elevation (photos 1-2). There is an entrance covered by a metal screen door on the south elevation and another entrance with a wooden door on the west elevation that leads onto a concrete patio in the backyard (photo 3). The single-car garage has a door of horizontal wood boards.

The second building on the property is southwest of the first and has an irregular, roughly L-shaped plan. It has a hipped composition shingle roof. Original cladding on the heavily altered building appears to have been horizontal drop siding, but there are areas of vertical boards, plywood, particleboard, stucco, and brick. Windows are mostly wood sash with metal screens, there are also aluminum sliders. The house is accessed to the east by a wooden door set in a recessed volume (see photo 4). There is a projection in the southwest corner made of unpainted plywood, and next to it to the east is a large metal awning that is significantly taller than the building (photos 7-11). The south elevation includes multiple entrances covered by wooden doors (see photos 8-9). Another awning on the east elevation is shorter, in line with the roof (see photos 12-13).

11260 Cedar Avenue. The 7.5-acre parcel northwest of the intersection of Cedar and Jurupa Avenues is primarily bare dirt and weeds, with a few mature trees near the buildings (see photo 3 of DPR, Appendix A). The primary dwelling fronts onto Cedar Avenue, and features a complex compound plan and cross-gabled roof with front shed dormer. Glass has been replaced with plywood on the dormer's three decorative windows, and the dormer is also patched with plywood. The full-width porch is supported by Roman columns atop heavy brick piers. The front door is centered on the porch and has a security screen door. It is accessed via sets of concrete steps at the center and side of the porch. The building is clad in clapboard siding and windows are aluminum and vinyl sliders. There is a brick chimney on the north (side) elevation. Because of the replacement of doors and windows and alteration of original window openings the original features of the house are difficult to interpret. Features like the wide porch, its heavy piers, and the front dormer are elements of the Craftsman style, while clapboard siding and Roman columns more consistent with a turn-of-the-century National Folk house. The combination of these elements along with the irregular plan of the building indicate multiple alterations over the life of the building.

The secondary dwelling fronts onto Jurupa Avenue and is rectangular in plan. Its moderate pitch side-gabled roof with decorative vertical siding at the gable ends and modest size are elements of the Minimal Traditional style, popular for small houses from the 1930s until

about 1950. It has a projecting full-width porch under a low-pitch shed roof with simple "ladder" supports. Its centered entryway has a metal security door. Windows are double hung wood sash with four horizontally-oriented lights. Cladding is wide horizontal wood siding (photo 4). There are two small front-gabled buildings to the north of the secondary dwelling that appear to have been sheds or garages. They are in poor condition, and openings have been covered with plywood on the larger western shed. Its cladding is clapboard. The smaller eastern shed, which is closer to the secondary dwelling, has a shed-roofed porch with simple square supports and a swinging double vehicle door (photo 5).

18604 Jurupa Avenue. A wide driveway leads to the building, which is set back only about 25 feet from the street. The property is enclosed by a tall metal fence that runs along the front of the property. The surrounding yard is mostly dirt with some bushes and trees. The building has a roughly rectangular plan with a rectangular-plan addition to the northeast. The primary roof is side-gabled and low pitch, and tops the portion of the building that originally housed the fire trucks. The building is constructed of concrete masonry units and gable ends are clad in stucco. Its main (south) elevation has two large vehicle doors that have been infilled. A projecting volume at the east is flat-roofed. An entryway at its south elevation is fitted with a partially glazed door with sidelight and transom which is sheltered by the broad eave overhang. Windows are aluminum sliders and covered in security bars. A small addition to the northeast of the building has a hipped roof and vertical-groove plywood cladding.

SIGNIFICANCE EVALUATIONS

During the field survey and research, the above addresses and associated historic-period buildings were identified. CEQA (PRC Chapter 2.6, Section 21083.2 and CCR Title 145, Chapter 3, Article 5, Section 15064.5) calls for the evaluation and recordation of historic and archaeological resources. The criteria for determining the significance of impacts to cultural resources are based on Section 15064.5 of the *CEQA Guidelines* and Guidelines for the Nomination of Properties to the California Register. Properties eligible for listing in the California Register and subject to review under CEQA are those meeting the criteria for listing in the California Register, National Register, or designation under a local ordinance.

Significance Criteria

California Register of Historical Resources. The California Register criteria are based on National Register criteria. For a property to be eligible for inclusion on the California Register, one or more of the following criteria must be met:

1. It is associated with the events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the U.S.;
2. It is associated with the lives of persons important to local, California or national history;

3. It embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time has passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resources." (CCR 4852 [d][2]). The California Register also requires that a resource possess integrity. This is defined as the ability for the resource to convey its significance through seven aspects: location, setting, design, materials, workmanship, feeling, and association.

Evaluations

11109 Linden Avenue. Criterion 1: 11109 Linden Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11109 Linden Avenue is not associated with the lives of persons important to local, state, or national history. Although E.A. Featherstone was an important regional figure and helped popularize the automobile in Southern California, the property was not his office or primary dwelling, so the strength of association is insufficient for historic listing. Therefore, the property is not eligible to the California Register under Criterion 2.

Criterion 3: The house is a good example of a Craftsman dwelling from the 1910s. Typical Craftsman features include its wide gabled roof with decorative knee braces, expansive porch with heavy stone supports, shingle cladding, and decorative gable vents. Although the storage of household items and junk on and around the house make it difficult to assess visually, it also appears to retain integrity. The architectural features of the house would allow it to qualify as a contributor to a historic district if such a district existed. There does not appear to be an eligible historic district in the vicinity, however. The house lacks the ornamental features of large, architect-designed examples of the style, such as dormers, shaped rafter tails, decorative window assemblages and partially glazed doors. It therefore lacks the distinction required for individual listing on the California Register for its architecture.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11109 Linden Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11141 Linden Avenue. The building was moved to the site from an unknown location in the 1990s and is not architecturally significant. It therefore does not meet the criteria for listing on the California Register.

11191 Linden Avenue. 1: 11191 Linden Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11191 Linden Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: 11191 Linden Avenue is a common example of a Ranch style dwelling constructed in the 1960s, and also appears to have been heavily altered with brick veneer and replacement of windows, front door, and garage door. The house lacks architectural distinction and is not eligible for historic listing under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11191 Linden Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11138 Cedar Avenue. Criterion 1: 11138 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11138 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: 11138 Cedar Avenue is an example of a mid-century house that has been so heavily altered over the years that it is unrecognizable as a house constructed in the 1950s. It lacks both architectural significance and integrity, and is therefore not eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11138 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11150 Cedar Avenue. Criterion 1: 11150 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11150 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: 11150 Cedar Avenue is an example of a mid-century house that has been so heavily altered over the years it is impossible to interpret as a house constructed in the 1940s. It lacks architectural significance and lacks integrity and is therefore not eligible to the California Register under Criterion 3. The associated resources including the back house and ancillary dwellings also lack architectural significance.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11150 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11166 Cedar Avenue. Criterion 1: 11166 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11166 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register, or local designation under Criterion 2.

Criterion 3: 11166 Cedar Avenue lacks architectural significance and is therefore not eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11166 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11174 Cedar Avenue. Criterion 1: 11174 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11174 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: 11174 Cedar Avenue is a common example of a mid-century Ranch house that has also been altered over the years. It lacks architectural significance and is therefore not eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11174 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11188 Cedar Avenue. Criterion 1: 11188 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 11188 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: The two houses at 11188 Cedar Avenue are common examples of modest dwellings constructed in the 1930s and 1940s and lack architectural distinction. The older house (Building 2) has also been extensively altered. Therefore its original characteristics are difficult to discern and it lacks historic integrity. Neither house is eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11188 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

11260 Cedar Avenue. Criterion 1: 11260 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: Although Ritner Sayles and Gerald Smith both lived at 11260 Cedar Avenue, research has not indicated that their relevant discoveries in regional archaeology or their formation of the San Bernardino County Museum occurred at the subject property. Therefore, the property is not significantly associated with persons important to local or state history and does not appear eligible to the California Register under Criterion 2.

Criterion 3: Criterion 3: The primary dwelling at 11260 Cedar Avenue is an example of a vernacular house with elements from different architectural styles that has also been altered in recent decades. The secondary dwelling is a modest example of a Minimal Traditional house, a popular style for inexpensive houses during the Great Depression, when it was constructed. Both lack architectural significance and are therefore not eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11260 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

18604 Jurupa Avenue. Criterion 1: 18604 Jurupa Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the California Register under Criterion 1.

Criterion 2: 18604 Jurupa Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the California Register under Criterion 2.

Criterion 3: 18604 Jurupa Avenue is a utilitarian example of a mid-century fire station. Built to house fire trucks and firefighters, it lacks decorative features or design distinction. It has also been altered over the years it, most notably by the infilling of the fire truck doors, so that it lacks the ability to convey its history as a fire station. It lacks architectural significance and lacks integrity and is therefore not eligible to the California Register under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 18604 Jurupa Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

RECOMMENDATIONS

BCR Consulting conducted a Cultural Resources Evaluation of the Bloomington Distribution Project in the Community of Bloomington, San Bernardino County, California.

Based on the results of the current study, none of the 10 addresses that contained historic-age (i.e. over 45 years old) cultural resources within the project site are eligible for listing in the California Register. As a result the proposed project is not likely to impact any significant historical resources under CEQA. However, BCR Consulting recommends that,

prior to demolition, the interior of the Ritner Sayles buildings at 11260 Cedar Avenue be examined for any artifacts associated with their archaeological discoveries. Any artifacts present would not be in archaeological context and would not require official curation. However, if any artifacts are present they should be offered to the Bloomington Preservation Foundation and Historical Society for display. Finally, if previously undocumented cultural resources are identified during proposed project activities, a qualified cultural resource professional should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

REFERENCES
(See Also Appendix A)

Dorrler, Adriane and Micah Hale
2015 *Cultural Resources Study for the Bloomington Distribution Project, San Bernardino County, California.* On File at BCR Consulting.

Mape, Jeremy
2014 *Phase I Environmental Site Assessment Northwest Corner of Cedar and Jurupa Avenues Bloomington California.*

United States Geological Survey
1980 *Fontana, California* 7.5-minute topographic quadrangle map.

APPENDIX A

DEPARTMENT OF PARK AND RECREATION 523 FORMS

P1. Other Identifier: 11109 Linden Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ___ **B.M.**

c. Address 11109 Linden Avenue City Bloomington Zip 92316

d. UTM: (give more than one for large and/or linear resources) Zone 10 ; 463111.75 mE/ 3768028.85 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-32

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. There are paved sidewalks across the street from the property, but not in front of it. The property is enclosed with a concrete and metal fence and there is a driveway on each side of the main building. The yard is full of trees at the sides and in front of the house.

The building is rectangular and has a cross-gabled composition shingle roof. Wide overhanging eaves are open, with exposed rafter tails and purlins. There are paired eight-light wood frame casement windows on the main façade with smaller one-over-one double-hung wood sash at the sides and at least one aluminum replacement at the rear. The house is clad in alternating rows of large and small wood shingles. There is a front porch centered under the gable on the west elevation. Its floor is concrete, and accessed via a sidewalk and concrete steps. There are heavy wood porch supports, and also porch supports and low porch wall of uncoursed cut stone masonry, and there are two sets of double glass doors covered by screen doors to either side, and two more closer to the northwest corner (see photos 1 – 6) (continued p. 3).

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: West (main) elevation of building, camera facing southeast, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
c1915

***P7. Owner and Address:**

George W. and Betty E. Walters
11109 Linden Avenue
Bloomington, California 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11109 Linden Avenue
B2. Common Name: 11109 Linden Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:** Craftsman
***B6. Construction History:** (Construction date, alteration, and date of alterations) c1915, original construction

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR. The property lacks architectural or historical significance and is therefore ineligible for listing as a historic resource (see continuation sheet).

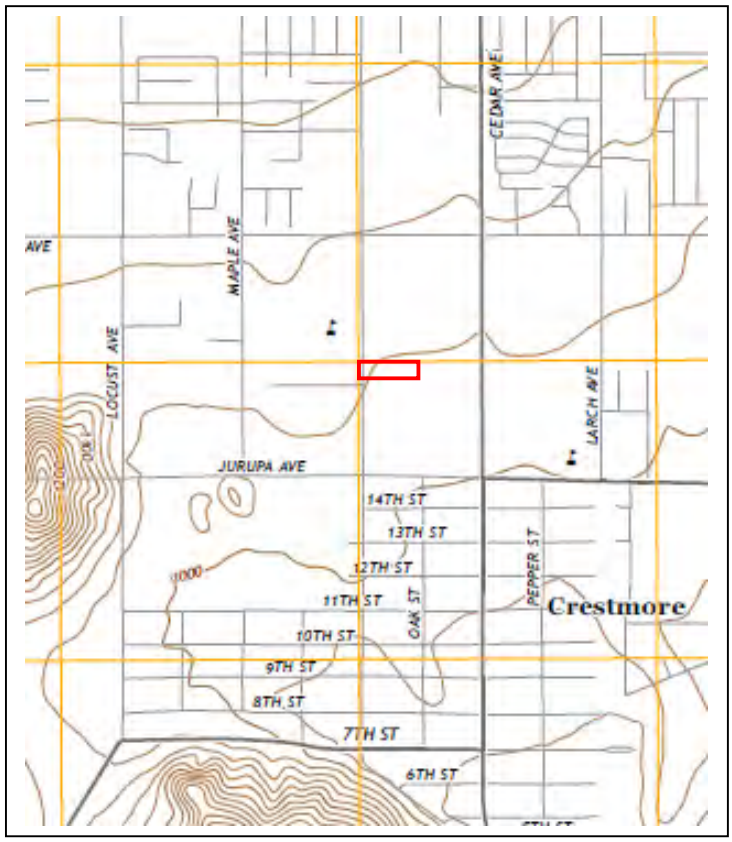
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

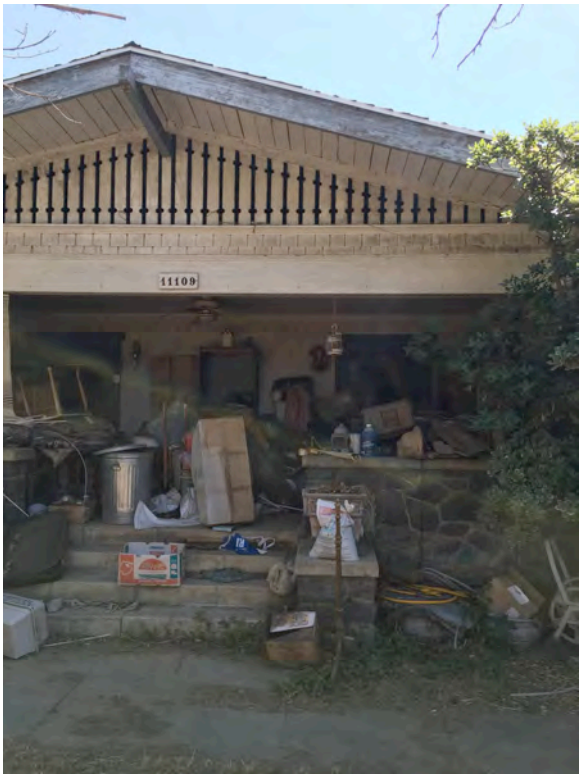
***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



***P3a. Description:** (continued)

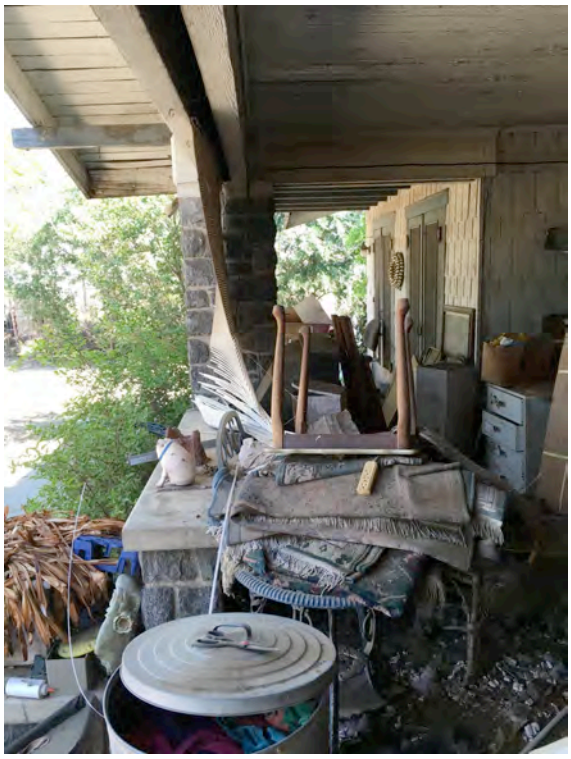
The east elevation features two smaller gables with an inset part of the wall between them. There is an entrance on the east elevation that is covered by a metal screen door and accessed by a set of concrete steps (see photos 12 – 15). A storage area covered by a metal awning is directly adjacent to this entrance (see photos 14 – 15). Farther back on the property to the east is a wooden shed with a gabled roof topped with a combination of corrugated metal and composition shingle (see photos 22 – 30). An on the southwest corner has a shed roof made of corrugated metal (see photos 24 – 26). Cladding is vertical unpainted wood boards, and there are wooden doors on the south elevation (see photo 26). The north elevation has a wooden door repurposed from a single-car garage (see photo 29).



Photograph 2: West elevation, camera facing east, May 3, 2016.

Photograph 3: West elevation, camera facing southeast, May 3, 2016.

Photograph 4: West elevation, camera facing northeast, May 3, 2016.



Photograph 5: West elevation, camera facing north, May 3, 2016.

Photograph 6: West elevation, camera facing south, May 3, 2016.

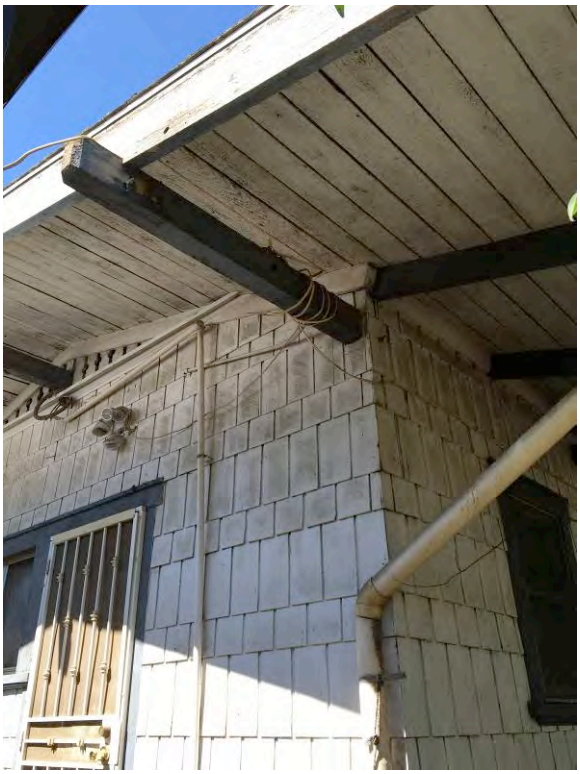
Photograph 7: North and west elevations, camera facing southeast, May 3, 2016.

Photograph 8: North and west elevations, camera facing southeast, May 3, 2016.

Photograph 9: North elevation, camera facing southwest, May 3, 2016.

Photograph 10: North elevation, camera facing east, May 3, 2016.

Photograph 11: North elevation, camera facing west, May 3, 2016.



Photograph 12: North and east elevations, camera facing southwest, May 3, 2016.

Photograph 13: East elevation, camera facing south, May 3, 2016.

Photograph 14: East elevation, camera facing northwest, May 3, 2016.

Photograph 15: East elevation, camera facing northwest, May 3, 2016.

Photograph 16: East elevation, camera facing southwest, May 3, 2016.

Photograph 17: East and south elevations, camera facing northwest, May 3, 2016.

Photograph 18: South elevation, camera facing northeast, May 3, 2016.

Photograph 19: South elevation, camera facing north, May 3, 2016.

Photograph 20: South elevation, camera facing north, May 3, 2016.

Photograph 21: Backyard, camera facing north, May 3, 2016.

Photograph 22: Shed viewed across backyard, west elevation, camera facing northeast, May 3, 2016.

Photograph 23: Shed, west elevation, camera facing east, May 3, 2016.

Photograph 24: Shed, west elevation, camera facing southeast, May 3, 2016.

Photograph 25: Shed, west and south elevations, camera facing northeast, May 3, 2016.

Photograph 26: Shed, south elevation, camera facing northwest, May 3, 2016.

Photograph 27: Shed, south and east elevations, camera facing northwest, May 3, 2016.

Photograph 28: Shed, east elevation, camera facing northwest, May 3, 2016.

Photograph 29: Shed, east and north elevations, camera facing southwest, May 3, 2016.

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387 and 394.[1]

11109 Linden Avenue

Lot 387 was subdivided into 10-acre parcels with an easement between for the railway after the turn of the century. In the 1920s, E.A. and Anne R. Featherstone owned lot 449, which was west of the railway. A Chicago native, Edward A. Featherstone was born in 1876, the youngest child of Ruth and John Featherstone. John Featherstone ran a foundry, and the family was wealthy. In 1897, Featherstone married Anne Robinson, who was a year younger. Anne was a member of a socially prominent Chicago family and a Daughter of the American Revolution. The young couple lived in Chicago, where Featherstone listed his occupation as "broker." Shortly after the turn of the century, they relocated to Los Angeles, where Featherstone operated automobile-related businesses. They lived in the fashionable neighborhood near the University of Southern California campus southwest of downtown. He was an investor in Durocar (a company that began manufacturing cars in Los Angeles in 1907), and owned a tire company and an oil company as well as a company that manufactured and sold automobile accessories. Their son Edward Allyn was born in 1916.[2]

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] U.S. Census Records, Chicago, Illinois, 1880, 1900, Los Angeles, California, 1910, 1920.

Featherstone's auto-related investments were apparently successful, and Anne and Edward continued to enjoy the privilege they had grown up with in Chicago. In 1920, it was still common for families of means to have a live-in maid, but the Featherstone family of three had a live-in staff of four to cook, clean, drive, and care for young Allyn. Featherstone also invested in a yacht-building company, and purchased a racing yacht which he would sail to Catalina. By 1915, the Featherstones owned the ten-acre property near Bloomington. Although County records estimate the construction date of the house as 1925, the Featherstones probably built it c1915. The property is likely to have been the wealthy family's "country home," where they raised poultry and bred dogs for competitions. Except for the house (the first on the west half of the parcel) and some sheds and small outbuildings, the property was planted in orchards. In 1928, E.A. Featherstone appears in the San Bernardino County telephone directory for the Bloomington area, but no address is listed. Research has not revealed definitive evidence of the Featherstones living at the address, and their country house may have been located on another parcel they owned in Bloomington. The outbuildings appear to date from the same era as the house, and were probably associated with agriculture and animal husbandry on the property.[3]

About 1932, the Citizens' National Savings Bank of Los Angeles acquired the parcel, and held onto it for the next decade. The house and orchard on the property were presumably rented or leased during this period. In 1942, Ely and Laura C. Johnson, who were 45 and 40, purchased the parcel. The Johnsons were African-Americans from Louisiana. In 1930, Ely worked as a chauffeur and Laura as a cook in Los Angeles. By 1938, the couple lived in a home they owned in Los Angeles with a teenage niece. They also owned and co-operated a liquor store. Research has not revealed if they moved to the Bloomington farm after their purchase, but they owned other property and resold the 11109 Linden Avenue two years later, so it is likely to have been an investment rather than a home.[4]

Werner and Elizabeth Hofmann bought the west half of lot 387 in 1944. Werner was an engineer that designed tools and the Hofmanns lived in Montebello before moving to Bloomington. The couple, who were in their mid to late twenties when they bought the house, resided on the property until at least 1965. A daughter, Doris Elizabeth, was born to the couple in the 1940s. Voter registration documents show Werner and Elizabeth Hofmann living on South Linden Street in Bloomington in 1946 – 1964. In 1947, a Werner Hofmann, who was an engineer at Food Machinery Corporation, was shown living in Bloomington, though no address is given. The orchards were removed from the parcel in the 1950s while the Hofmanns owned it. Construction of new dwellings on the west half of lot 387 began in the early 1960s with 11191 Linden Avenue, the house at the southwest corner of the lot. Subdivision of the parcel probably began around the same time. In the 1970s, John and Sharon Heydenreich owned 11109 Linden Avenue. John Heydenreich lived at the address in 1975.[5]

After 1975, city directories show the house vacant most years, however it may have been occupied and its residents were not recorded. Donal and Barbara Howell owned the property from 1980 to 1998. Donal Howell appears as a resident at the address in 1992, and the couple may have resided there during the entire 18 years they owned the property. Aerial photographs indicate that the Howells built two more houses near the center of the parcel in the 1990s at 11141 Linden Avenue. In 1998, they sold to current owners George and Betty Walters. The Walters lived on the property until about 2008, but the house currently appears to be unoccupied. At some point the parcel was subdivided, and the house is now on a 107-foot-wide parcel at the north end of lot 387.[6]

Evaluation:
The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11109 Linden Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR, under Criterion 1.

Criterion 2: 11109 Linden Avenue is not associated with the lives of persons important to local, state, or national history. Although E.A. Featherstone was an important regional figure and helped popularize the automobile in Southern California, the property was not his office or primary dwelling, so the strength of association is insufficient for historic listing. Therefore, the property is not eligible to the CRHR under Criterion 2.

---

[3] Great Falls Tribune, 26 March 1921, p. 2 col. 2; San Bernardino County Sun, 18 April 1918, p. 7; California Poultry Journal, Vol. I, No. I, 1915, p. 1; Polk Directory, San Bernardino, 1928.

[4] San Bernardino County Block Books, 1928 – 1933; U.S. Census, Los Angeles, 1930, 1940.

[5] San Bernardino County Block Books, , 1934 – 1939, 1940 – 1945; U.S. Census Records, Los Angeles County, 1940; Riverside City Directory, 1947; The Fresno Bee The Republican 1 July 1965, p. 23.

[6] Deeds on File at San Bernardino County Recorder's Office; Historic Aerial Photographs, Copyright 2009-2016 Nationwide Environmental Title Research, LLC, http://www.historicaerials.com/, accessed 30 May 2016; Fontana City Directories.

Criterion 3: The house is a good example of a Craftsman dwelling from the 1910s. Typical Craftsman features include its wide gabled roof with decorative knee braces, expansive porch with heavy stone supports, shingle cladding, and decorative gable vents. Although the storage of household items and junk on and around the house make it difficult to assess visually, it also appears to retain integrity. The architectural features of the house would allow it to qualify as a contributor to a historic district if such a district existed. There does not appear to be an eligible historic district in the vicinity, however. The house lacks the ornamental features of large, architect-designed examples of the style, such as dormers, shaped rafter tails, decorative window assemblages and partially glazed doors. It therefore lacks the distinction required for individual listing on the CRHR for its architecture.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11109 Linden Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

Figure 2: Map Showing Subdivision of Lands belonging to the Semi-Tropic Land & Water Co., 1891, project vicinity outlined in red.

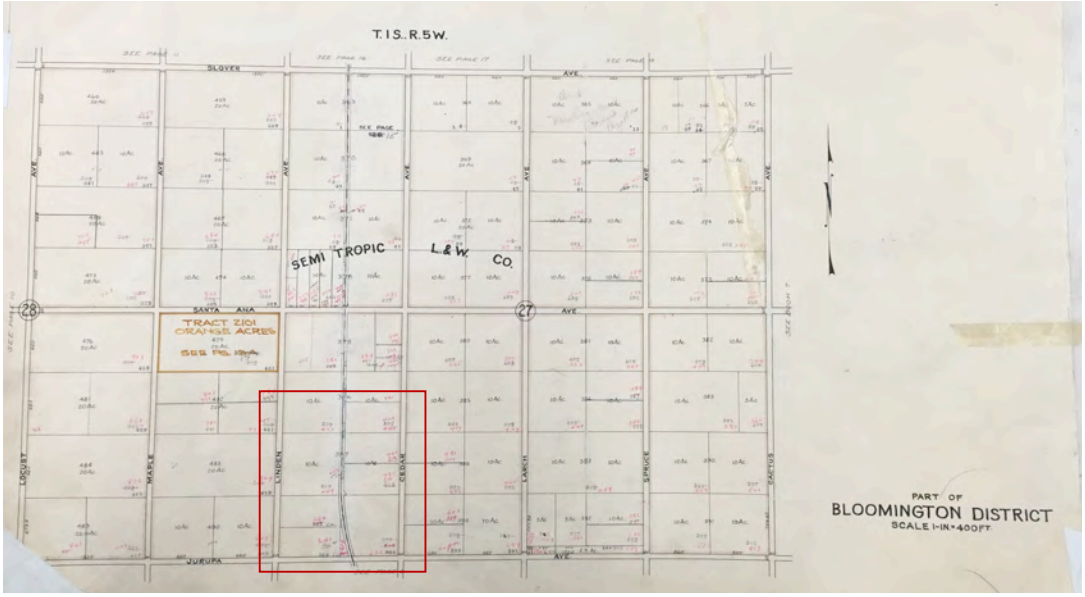


Figure 3: Map of the Bloomington District, San Bernardino County Block Books, 1923 – 1928, showing railroad tracks and project vicinity outlined in red.

P1. Other Identifier: 11141 Linden Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ____ **B.M.**
c. Address 11141 Linden Avenue City Bloomington Zip 92316
d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463116.16 mE/ 3767929.60 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-33

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This property is surrounded by other residential properties. The yard consists of gravel all the way to the edge of the road. There is a high chain-link fence between the road and the nearest building, and another metal fence behind it. There are trees and gravel in between the fences. A driveway leads into the property through both rows of fences.

There is a roughly rectangular house behind the second fence. The yard is mostly grass, shrubs, and trees; the driveway leads up to a metal garage door on the west elevation, and there is a small concrete area directly in front of the house that connects to the driveway. The roof is composition shingle and has a cross gable and second gable. It has overhanging eaves with decorated verge boards on the gables and exposed brackets elsewhere. The house is clad in stucco, besides a portion of the north elevation under a gable, which is board siding. The other part of the north elevation consists of an integral porch with a concrete floor and wrought iron supports, accessed by a set of concrete steps with wrought iron balustrade that lead to a door at the center of the elevation. Windows and doors are covered in wrought iron grates, except one boarded up window on the west elevation (continued p. 3).

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: West (main) elevation of building, camera facing northeast, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1915

***P7. Owner and Address:**

George and Betty E. Walters
11141 Linden Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11141 Linden Avenue
B2. Common Name: 11141 Linden Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, c1950s
Moved to site, 1990s

***B7. Moved?** ☐ **No** ☒ **Yes** ☐ **Unknown** **Date:** 1990s **Original Location:** unknown
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building was moved to the site from an unknown location in the 1990s and is not architecturally significant. It therefore does not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

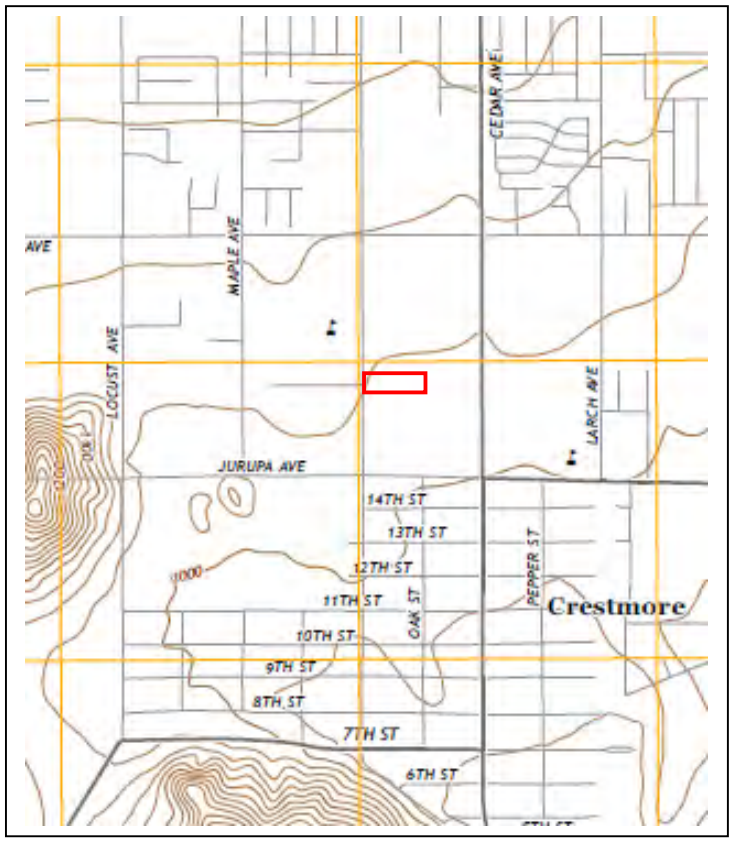
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



There is a brick chimney on the west elevation. The east elevation includes a porch with wooden supports and a corrugated metal shed roof. Farther back on the property, to the east of the house, are several sheds and warehouses. Most notable are a pair of gabled buildings and a large skeletal structure.

Photograph 2: West elevation, camera facing southeast, May 3, 2016.

Photograph 3: West and north elevations, camera facing south, May 3, 2016.

Photograph 4: North elevation, camera facing east, May 3, 2016.

Photograph 5: North and east elevations, camera facing south, May 3, 2016.

Photograph 6: East elevation, camera facing northwest, May 3, 2016.

Photograph 7: East and south elevations, camera facing northwest, May 3, 2016.

Photograph 8: Yard with sheds left of frame, camera facing east, May 3, 2016.

Photograph 9: Frame structure in foreground and sheds in background, camera facing north, May 3, 2016.

P1. Other Identifier: 11191 Linden Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ _____ **B.M.**
c. Address 11191 Linden Avenue City Bloomington Zip 92316
d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463116.49 mE/ 3767871.61 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-30

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. There are paved sidewalks across the street from the property, but not in front of it. The front yard consists of a lawn with three trees, one of them inside a ring of flowering shrubs, surrounded by a decorative wrought iron and brick fence. The fence is lined with shrubs and flowering bushes along the inside and flowers along the outside. Between the fence and the street is a strip of grass with three smaller trees in it. A low brick planter runs along the front of the house and contains various plants and shrubs. There is a driveway on either side of the house; the one to the south is paved and leads to a driveway, while the one to the north is dirt and leads into a road that runs farther back into the property and is lined by a row of shrubs on the other side (see photos 6 – 7). A sidewalk leads between both driveways and the front door.

The house is L-shaped and cross-gabled with a wood shingle roof. The front façade is brick veneer and the other walls are clad in stucco (see photos 1 – 4, 8 – 13). Windows are single hung vinyl replacement with applied decorative muntins. The main elevation faces west and has one main gable to the north and a subordinate asymmetrical gable at the center (see photos 1 – 3) (continued p. 3).

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: West (main) elevation of building, camera facing southeast, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1964

***P7. Owner and Address:**

Roger D. and Mary Rose Jaynes
11191 Linden Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**
May 3, 2016
***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11191 Linden Avenue
B2. Common Name: 11191 Linden Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:** Ranch
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, 1964

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). It lacks historical or architectural significance and is therefore ineligible for listing as a historic resource (see continuation sheet).

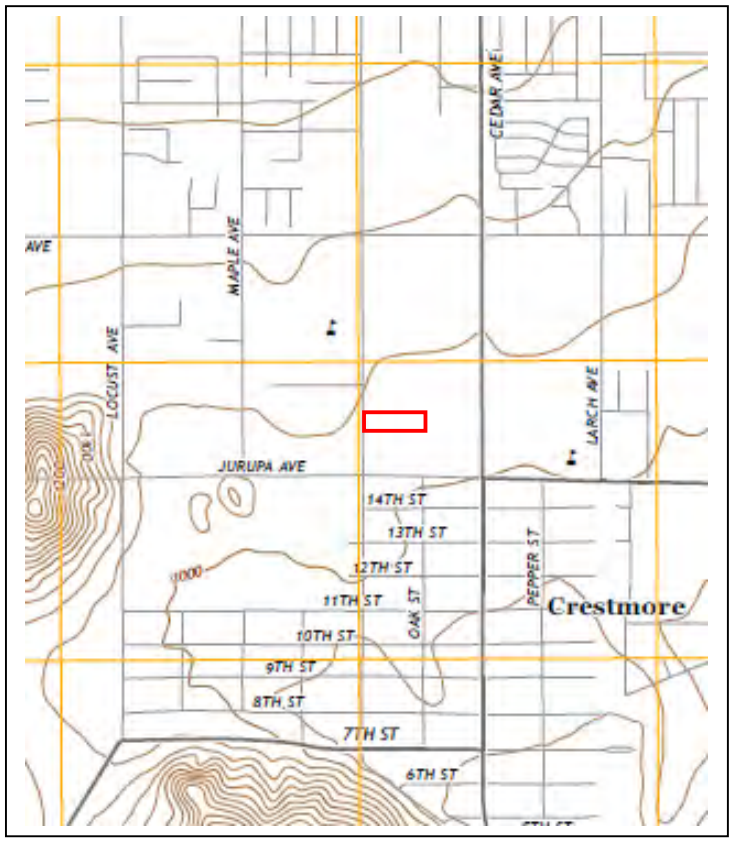
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

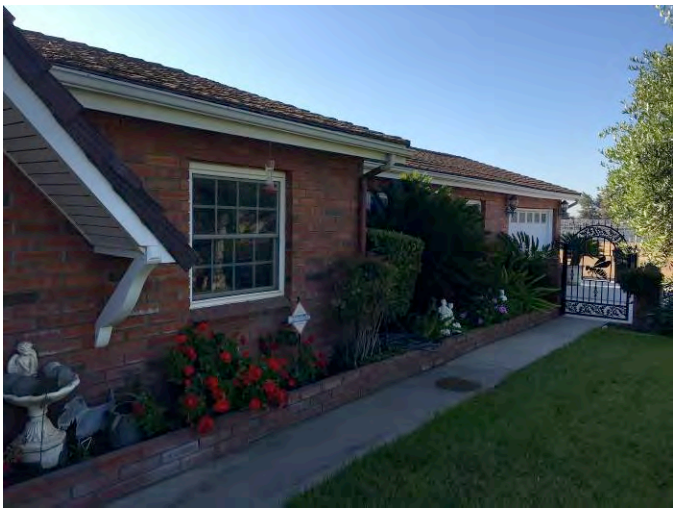
(This space reserved for official comments.)



The main entrance is immediately north of the smaller gable and consists of a modern wooden door with a decorative oval window inset (see photo 3). There is a metal garage door with a row of windows along the top at the south end of this elevation. The backyard includes grass and a patio sheltered by a latticed wooden awning directly behind the house. This patio is accessed by a partially glazed nine-light wooden door (see photos 10 – 12). There are several metal sheds behind the house (see photos 14 – 17).

Photograph 2: West elevation, camera facing north, May 3, 2016.

Photograph 3: West elevation, camera facing east, May 3, 2016.



Photograph 4: West elevation, camera facing southeast, May 3, 2016.

Photograph 5: West and north elevations, camera facing southeast, May 3, 2016.

Photograph 6: North and west elevations viewed from road into property, camera facing southeast, May 3, 2016.

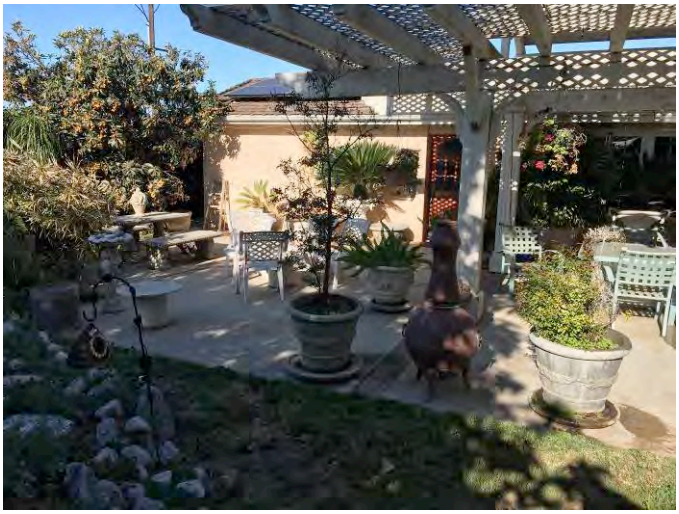
Photograph 7: View down road into property, camera facing east, May 3, 2016.

Photograph 8: North elevation, camera facing southwest, May 3, 2016.

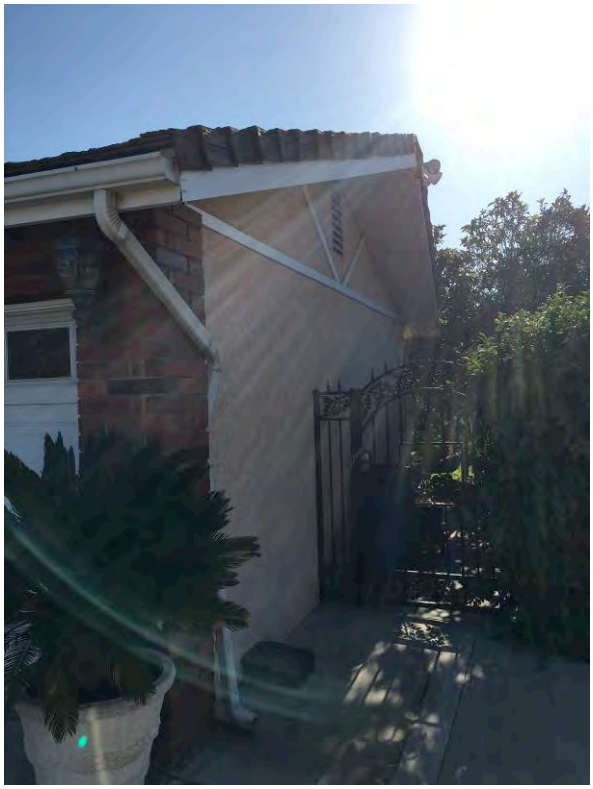
Photograph 9: North and east elevations, camera facing southwest, May 3, 2016.

Photograph 10: East and north elevations, camera facing southwest, May 3, 2016.

Photograph 11: East elevation, camera facing northwest, May 3, 2016.



Photograph 12: East elevation, camera facing west, May 3, 2016.



Photograph 13: South and west elevations, camera facing northeast, May 3, 2016.

Photograph 14: Shed at back of property, May 3, 2016.

Photograph 15: Shed at back of property, May 3, 2016.

Photograph 16: Warehouses at back of property, May 3, 2016.

Photograph 17: Warehouse at back of property, May 3, 2016

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

11191 Linden Avenue

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

Lot 387 was subdivided into 10-acre parcels with an easement between for the railway after the turn of the century. In the 1920s, E.A. and Anne R. Featherstone owned lot 449, which was west of the railway. A Chicago native, Edward A. Featherstone was born in 1876, the youngest child of Ruth and John Featherstone. John Featherstone ran a foundry, and the family was wealthy. In 1897, Featherstone married Anne Robinson, who was a year younger. Anne was a member of a socially prominent Chicago family and a Daughter of the American Revolution. The young couple lived in Chicago, where Featherstone listed his occupation as "broker." Shortly after the turn of the century, they relocated to Los Angeles, where Featherstone operated automobile-related businesses. They lived in the fashionable neighborhood near the University of Southern California campus southwest of downtown. He was an investor in Durocar (a company that began manufacturing cars in Los Angeles in 1907), and owned a tire company and an oil company as well as a company that manufactured and sold automobile accessories. Their son Edward Allyn was born in 1916.

Featherstone's auto-related investments were apparently successful, and Anne and Edward continued to enjoy the privilege they had grown up with in Chicago. In 1920, the family of three had a live-in staff of four to cook, clean, drive, and care for young Allyn. Featherstone also invested in a yacht-building company, and purchased a racing yacht which he would sail to Catalina. By 1915, the Featherstones owned the ten-acre property near Bloomington. Although County records estimate the construction date of the house as 1925, the Featherstone's probably built it c1915. The property was the wealthy family's "country home," where they raised poultry and bred dogs for competitions. Except for the house (the first on the west half of the parcel) and some sheds and small outbuildings, the property was planted in orchards. In 1928, E.A. Featherstone appears in the San Bernardino County telephone directory for the Bloomington area, but no address is listed.[2]

About 1932, the Citizens' National Savings Bank of Los Angeles acquired the parcel, and held onto it for the next decade. The house and orchard on the property were presumably rented or leased during this period. In 1942, Ely and Laura C. Johnson, who were 45 and 40, purchased the parcel. The Johnsons were African-Americans from Louisiana. In 1930, Ely worked as a chauffeur and Laura as a cook in Los Angeles. By 1938, the couple lived in a home they owned in Los Angeles with a teenage niece. They also owned and co-operated a liquor store. Research has not revealed if they moved to the Bloomington farm after their purchase, but they resold the property two years later.[3]

Werner and Elizabeth Hofmann bought the west half of lot 387 in 1944. Werner was an engineer that designed tools and the Hofmanns lived in Montebello before moving to Bloomington. The couple, who were in their mid-late twenties when they bought the house, resided on the property until at least 1965. A daughter, Doris Elizabeth, was born to the couple in the 1940s. Voter registration documents show Werner and Elizabeth Hofmann living on S. Linden Street in Bloomington in 1946 – 1964. In 1947, a Werner Hofmann, who was an engineer at Food Machinery Corporation, was shown living in Bloomington, though no address is given. The orchards were removed from the parcel in the 1950s while the Hofmanns owned it.

Construction of new dwellings on the west half of lot 387 began in the early 1960s with 11191 Linden Avenue, the house at the southwest corner of the lot. Subdivision of the parcel probably began around the same time. Research has not revealed whether the Hofmanns built the house as a speculative venture and then sold it, or subdivided their parcel and sold the lot. Its first known owners were Virgina and Eugene Patterson. They sold to Walter Keinle, who resold to Sharon and Paul Beaulieu. The Beaulieus were living in the house when their son was born in 1974. Two years later, they sold the house to Wanda Bouchelle, who almost immediately resold to current owners Roger and Mary Jaynes. Roger Jaynes grew up in Riverside, and he married fellow Riverside native Mary Tino in 1962. The couple has lived in the house and operated an apiary from the property.[4]

Evaluation:
The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11191 Linden Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: 11191 Linden Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR under Criterion 2.

---

[2] Great Falls Tribune, 26 March 1921, p. 2 col. 2; San Bernardino County Sun, 18 April 1918, p. 7; California Poultry Journal, Vol. I, No. I, 1915, p. 1; Polk Directory, San Bernardino, 1928.
[3] San Bernardino County Block Books, 1928 – 1933; U.S. Census, Los Angeles, 1930, 1940.
[4] Deeds on File at San Bernardino County Recorder's Office; San Bernardino County Sun, 4 June 1974, p. 35; California Marriage Index, Riverside, 1962.

Criterion 3: 11191 Linden Avenue is a common example of a Ranch style dwelling constructed in the 1960s, and also appears to have been heavily altered with brick veneer and replacement of windows, front door, and garage door. The house lacks architectural distinction and is not eligible for historic listing under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11191 Linden Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

P1. Other Identifier: 11150 Cedar Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ____ **B.M.**
c. Address 11150 Cedar Avenue City Bloomington Zip 92316
d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463311.83 mE/ 3767931.82 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-07

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. A sidewalk runs in front of the property and there is a wrought iron and concrete masonry unit fence that separates it from the yard. There are driveways on either side of the yard which has hardscape, grass, wooden planting beds, and palm trees. The house is cross-gabled with a composition shingle roof and is clad in stucco. Windows are mostly aluminum sliders, besides one large vinyl window with interior muntins on the east elevation. There is an attached carport at the north elevation, which shelters an entrance through a wooden door. There is also an entrance on the south elevation sheltered by metal awning, and a metal fence encloses the paved back yard.
There are several other buildings on the property. One is a similar-sized house directly behind the front house, with a gabled composition shingle roof and stucco cladding. There are two other ancillary buildings, also with gabled roofs and stucco cladding. These small buildings appear to be ancillary dwellings or storage areas consisting of a single room each.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: East (main) and south elevations of building, camera facing northwest, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1947, San Bernardino County Block Books

***P7. Owner and Address:**

Jose L. Marmolejo and Tello Herculano
11150 Cedar Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**
May 3, 2016.

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11150 Cedar Avenue
B2. Common Name: 11150 Cedar Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, 1947
1980s, construction of back house and ancillary dwellings
1990s enlargement and alteration of main house

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

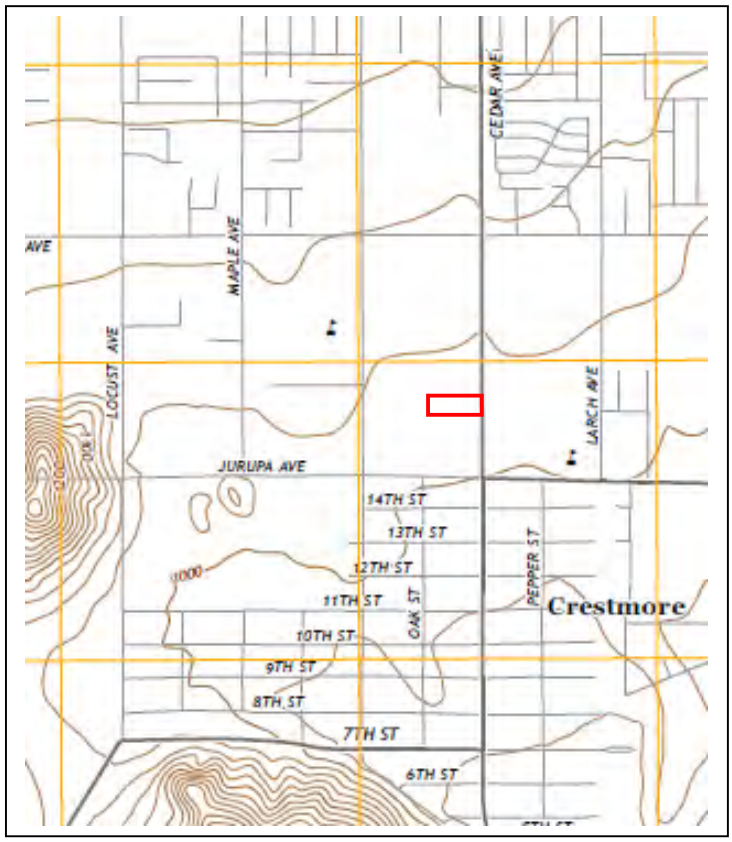
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

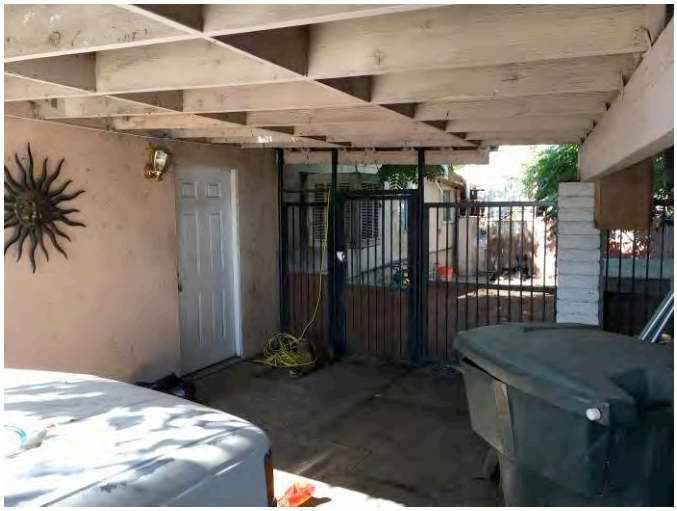
(This space reserved for official comments.)



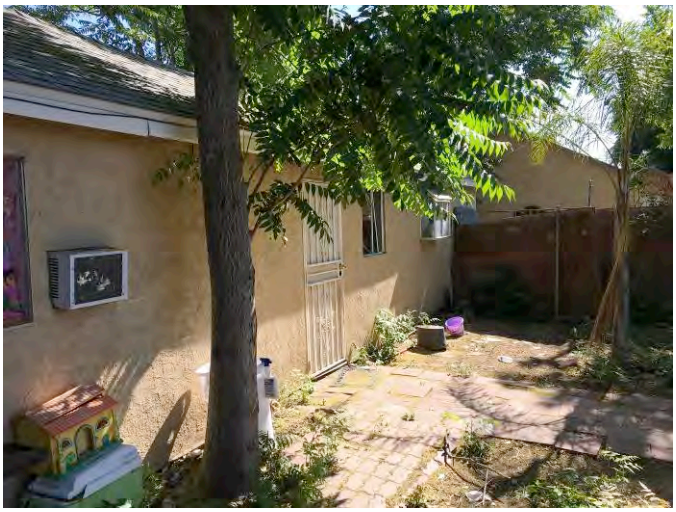
Photograph 2: East elevation, camera facing west, May 3, 2016.

Photograph 3: East elevation, camera facing southwest, May 3, 2016.

Photograph 4: South and west elevations, camera facing northeast, May 3, 2016.



Photograph 5: North elevation, camera facing southwest, May 3, 2016.



Photograph 6: Back house, main entrance, May 3, 2016.

Photograph 7: Back house, May 3, 2016.

Photograph 8: North ancillary dwelling with south ancillary dwelling (adjacent to back house) in background, May 3, 2016.

Photograph 9: South ancillary dwelling, May 3, 2016.

Photograph 10: South ancillary dwelling, May 3, 2016.

Photograph 11: View of yard behind buildings, May 3, 2016.

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

11150 Cedar Avenue

By 1938, there were houses on both the north and south halves of the eastern portion of Lot 387. In 1937, Rene sold his parcel (the south half) to Jenner and Joan Beebe Pynch (spelled Pinch on some documents). Jenner was a ranch foreman and Joan was a teacher during this era. The couple lived in Los Angeles in 1940. They appear to have purchased the lot in order to invest in son Wendell's ranching venture (Wendell purchased the north half of Lot 387 about the same time). The Pynch family appears to have built the house near the southern parcel boundary (11118 Cedar Avenue) in 1938. The original address was 872 South Cedar Avenue. Jenner and Joan Pinch moved into the house in the 1940s, living there until at least 1948.[3]

The Pynch family began subdividing the parcel in 1946. In 1947, the Pynchs sold the 66-foot-wide strip of land at the north of the parcel to Lee and Exia Shinn. The Shinns constructed 11150 Cedar Avenue the same year. (Although the current building is in the same general location as the 1947 house, it has clearly been altered and enlarged over the years. The side-gabled central wing of the house with its more steeply-pitched roof is probably original.) The couple almost immediately resold to Martin T. Pflueger. Research has not revealed evidence of Pflueger living in Bloomington. He owned the house through at least 1950. Bernard and Mary Schlosser lived in the house by 1958. Bernard was born in Nebraska in 1902, and came to Bloomington to work for Kaiser Steel in the 1940s. He died in 1967, while Mary Schlosser lived until 1990. It is not known how much longer Mary stayed in the house.[4]

By the 1970s, Bertha and Ray Latham owned 11150 Cedar Avenue. They do not appear to have lived in Bloomington, and sold to Anastacio and Anita Garcia in 1981. The Garcias lived in the house. Research has not revealed when the back house and ancillary dwellings were built, but based on construction details are likely to date from the 1980s when the Garcias owned the house. They appear to have altered the main house in the 1990s, adding the front-gabled wing near the street and replacing windows. Anastacio died in 2000, and in 2003 Richard Linares acquired the property. He sold to Jose Marmolejo, the current owner, in 2005.[5]

Evaluation:

The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11150 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

---

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] U.S. Census Records, Los Angeles, 1940; California Voter Registrations, Bloomington, CA, 1948.

[4] California Voter Registration, San Bernardino County, 1958, 1964, San Bernardino County Sun, 26 November 1967, p. 49.

[5] Deeds on File at San Bernardino County Recorder's Office.

Criterion 2: 11150 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR under Criterion 2.

Criterion 3: 11150 Cedar Avenue is ab example of a mid-century house that has been so heavily altered over the years it is impossible to interpret as a house constructed in the 1940s. It lacks architectural significance and lacks integrity and is therefore not eligible to the CRHR under Criterion 3. The associated resources including the back house and ancillary dwellings also lack architectural significance.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11150 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

P1. Other Identifier: 11166 Cedar Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ___ **B.M.**

c. Address 11166 Cedar Avenue City Bloomington Zip 92316

d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463301.59 mE/ 3767907.48 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-19

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. There is a sidewalk in front of the house and it is enclosed in with a chain-link fence. There is a driveway that leads to the double garage from the east, and a paved front yard. The house fronts onto Cedar Avenue with its main façade on the east. It is cross gabled with a composition shingle roof. Walls are stucco and windows are aluminum sliders. The main entrance has a metal screen door. There is a wooden play structure at the southeast corner of the yard near the street. The house appears to be in poor condition. Its details are difficult to observe because of furniture, tires, bicycles, household items, and cars stored on the property adjacent to the house.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: East (main) and north elevations of building, camera facing southwest, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
c1956, aerial photographs

***P7. Owner and Address:**

George W. and Betty E. Walters
11141 Linden Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11166 Cedar Avenue
B2. Common Name: 11166 Cedar Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, 1938

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

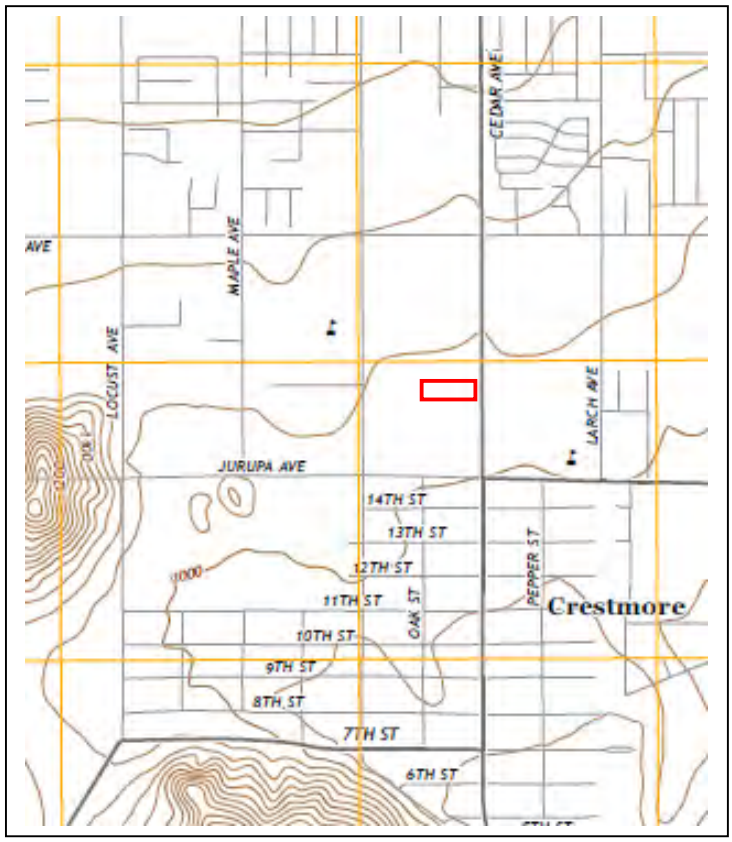
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

11166 Cedar Avenue

By 1938, there were houses on both the north and south halves of the eastern portion of Lot 387. In 1937, Rene sold his parcel (at the south) to Jenner and Joan Beebe Pynch (spelled Pinch on some documents). Jenner was a ranch foreman and Joan was a teacher during this era. The couple lived in Los Angeles in 1940. They appear to have purchased the lot in order to invest in son Wendell's ranching venture (Wendell purchased the north half of Lot 387 about the same time). The Pynch family appears to have built the house near the southern parcel boundary (11188 Cedar Avenue) in 1938. The original address was 872 South Cedar Avenue. Jenner and Joan Pinch moved into the house in the 1940s, living there until at least 1948.[3]

The Pynch family began subdividing the parcel in 1946, selling a 132-foot-wide strip of land at the south end of the parcel to Notie and John R. Berry. In 1947, the Pynchs sold the 66-foot-wide strip of land at the north of the parcel to Lee and Exia Shinn. They constructed 11150 Cedar Avenue the same year. Also in 1947, the Pynchs sold the large center portion of the parcel to Bock and Edna Mae Bleeker. Edna Mae was Exia Shinn's sister, who bought the adjacent parcel to the north about the same time. Born in 1904 and 1905, the Bleekers farmed in Texas (where their son Vernon was born) until the 1940s. The Bleekers built the house to the south at 11174 Cedar Avenue about 1956. 11166, on the north half of the Bleeker property, was constructed about 1960. The Bleekers were members of the Rialto Jehovah's Witness church. Bock Bleeker died in 1969, and Edna Mae in 1973. She lived at 11166 Cedar Avenue until her death. Vernon and Lola Bleeker inherited the two houses after Edna Bleeker's death. Vernon lived in Rialto. They split the parcel and sold the house at 11174 Cedar Avenue in 1977. It changed hands many times before current owners George and Betty Walters purchased it in 2007. In 1980, the Bleekers sold 11166 Cedar Avenue to Joyce and Edgar Kingsley. They quickly resold to George Montague, who owned the property for two decades. Current owners George and Betty Walters purchased it in [4]

Evaluation:

The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11166 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: 11166 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR, or local designation under Criterion 2.

Criterion 3: 11166 Cedar Avenue lacks architectural significance and is therefore not eligible to the CRHR under Criterion 3.

---

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] U.S. Census Records, Los Angeles, 1940; California Voter Registrations, Bloomington, CA, 1948.

[4] San Bernardino County Sun, 13 April 1973, p. 15.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11166 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

P1. Other Identifier: 11174 Cedar Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ____ **B.M.**

c. Address 11174 Cedar Avenue City Bloomington Zip 92316

d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463388.20 mE/ 3767894.17 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-20

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. There is a sidewalk in front of the house and it is enclosed in a low chain-link fence. There is a driveway that leads into the property from the east and a front yard, which is mostly dirt with grass and a few small trees and potted plants. The house is roughly L-shaped and cross gabled with a composition shingle roof. Walls are stucco and windows are mostly horizontal sliders with interior muntins. The main entrance, on the east elevation, is covered by a metal screen door. An articulated metal door is fitted to the double garage north of the main entryway. A large recreational vehicle is stored in the front yard, and at the time of the field visit a commercial truck was parked in the driveway. These vehicles block much of the main façade.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: West elevation of building, camera facing northeast, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1956

***P7. Owner and Address:**

George W. and Betty E. Walters
11141 Linden Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11174 Cedar Avenue
B2. Common Name: 11174 Cedar Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, 1956

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

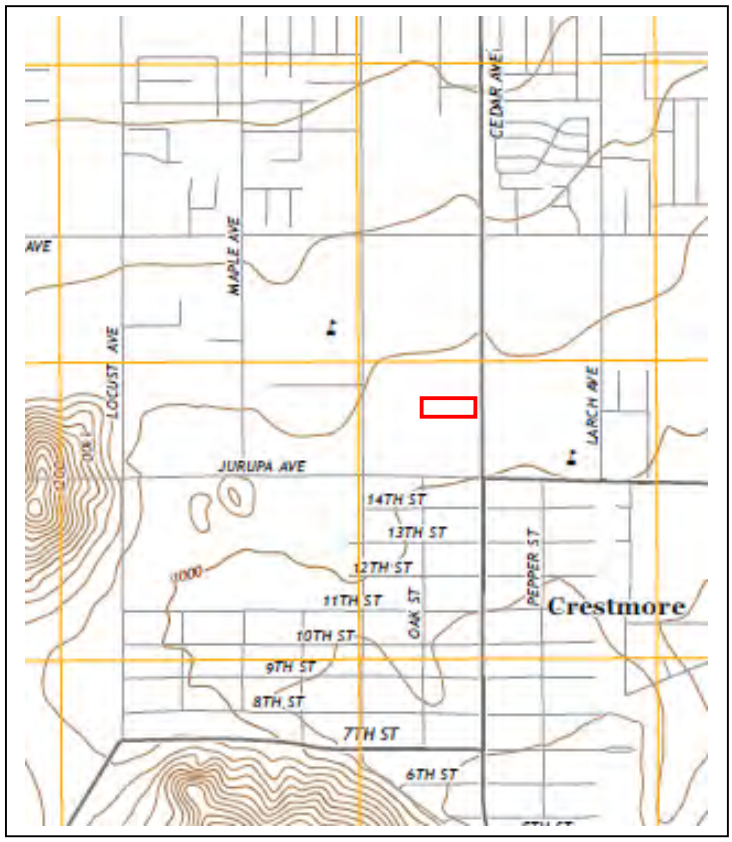
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

11174 Cedar Avenue

By 1938, there were houses on both the north and south halves of the eastern portion of Lot 387. In 1937, Rene sold his parcel to Jenner and Joan Beebe Pynch (spelled Pinch on some documents). Jenner was a ranch foreman and Joan was a teacher during this era. The couple lived in Los Angeles in 1940. They appear to have purchased the lot in order to invest in son Wendell's ranching venture (Wendell purchased the north half of Lot 387 about the same time). The Pynch family appears to have built the house near the southern parcel boundary (11118 Cedar Avenue) in 1938. The original address was 872 South Cedar Avenue. Jenner and Joan Pinch moved into the house in the 1940s, living there until at least 1948.[3]

The Pynch family began subdividing the parcel in 1946, selling a 132-foot-wide strip of land at the south end of the parcel to Notie and John R. Berry. In 1947, the Pynchs sold the 66-foot-wide strip of land at the north of the parcel to Lee and Exia Shinn. They constructed 11150 Cedar Avenue the same year.[4]

The same year, the Pynchs sold the large center portion of the parcel to Bock and Edna Mae Bleeker. Edna Mae and Exia Shinn were sisters. Born in 1904 and 1905, the Bock and Edna Mae Bleeker farmed in Texas (where their son Vernon was born) until the 1940s. The Bleekers built the house to the south at 11174 Cedar Avenue about 1956. 11166, on the north half of the Bleeker property, was constructed about 1960. The Bleekers were members of the Rialto Jehovah's Witness church. Bock Bleeker died in 1969, and Edna Mae in 1973. She lived at 11166 Cedar Avenue until her death. Vernon and Lola Bleeker inherited the two houses after Edna Bleeker's death. Vernon lived in Rialto. They split the parcel and sold the house at 11174 Cedar Avenue in 1977. It changed hands many times before current owners George and Betty Walters purchased it in 2007.[5]

Evaluation:
The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11174 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: 11174 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR under Criterion 2.

---

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] U.S. Census Records, Los Angeles, 1940; California Voter Registrations, Bloomington, CA, 1948.

[4] California Voter Registration, San Bernardino County, 1958, 1964, San Bernardino County Sun, 26 November 1967, p. 49.

[5] San Bernardino County Sun, 13 April 1973, p. 15.

Criterion 3: Criterion 3: 11174 Cedar Avenue is a common example of a mid-century Ranch house that has also been altered over the years. It lacks architectural significance and is therefore not eligible to the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11174 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

P1. Other Identifier: 11188 Cedar Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ _ ___ **B.M.**
c. Address 11191 Linden Avenue City Bloomington Zip 92316
d. UTM: (give more than one for large and/or linear resources) Zone 10 ; 586223.03 mE/ 4161416.79 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-23

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The property is surrounded by a high chain-link fence and there are two buildings on it fairly close to one another. The building closer to Cedar Avenue (Building 1) has a lawn with trees in front of it within the fenced area and a concrete driveway that leads to the recessed garage, accessed from the east (see photos 1 – 2).

This building is L-shaped with a hipped composition shingle roof. It is clad in stucco. Windows are mostly double-hung, with two that are painted over on the east elevation (see photos 1 – 2). There is an entrance covered by a metal screen door on the south elevation and another entrance with a wooden door on the west elevation that leads onto a concrete patio in the backyard (see photo 3). The single-car garage has a door of horizontal wood boards (continued p. 3).

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: East (main) elevation of building, camera facing southwest, photograph taken April 23, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1947

***P7. Owner and Address:**

George W. & Betty E. Walters
11188 Cedar Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 11188 Cedar Avenue
B2. Common Name: 11188 Cedar Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:** Minimal Traditional/vernacular
***B6. Construction History:** (Construction date, alteration, and date of alterations)

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The buildings do not meet the criteria for listing on the California Register of Historical Resources (CRHR). They lack architectural or historical significance and are therefore ineligible for listing as a historic resource (see continuation sheet).

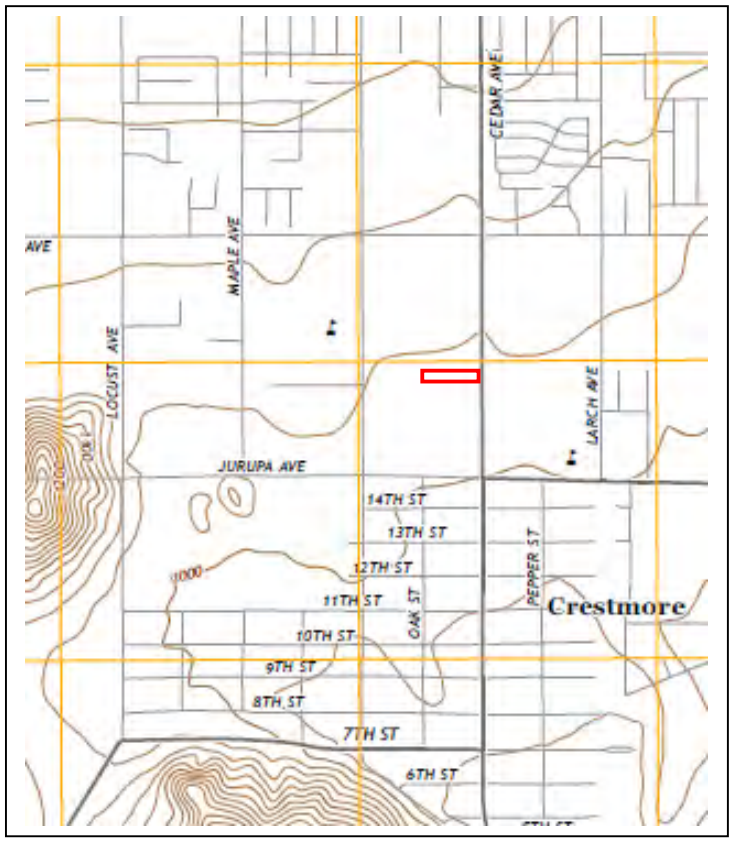
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

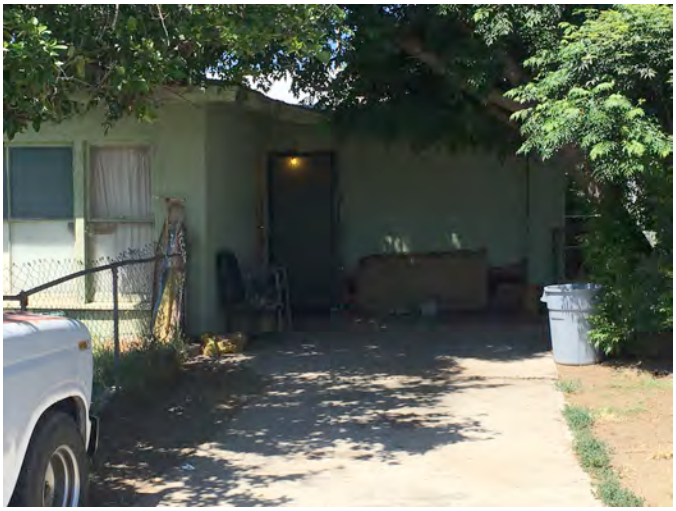
***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



The second building on the property is southwest of the first building and has an irregular, roughly L-shaped plan. It has a hipped composition shingle roof. Original cladding on the heavily altered building appears to have been horizontal drop siding, but there are areas of vertical boards, plywood, particle board, stucco, and brick. Windows are mostly wood sash with metal screens, there are also aluminum sliders. The house is accessed to the east by a wooden door set in a recessed volume (see photo 4). There is a projection in the southwest corner made of unpainted plywood, and next to it to the east is a large metal awning that is significantly taller than the building (see photos 7 – 11). The south elevation includes multiple entrances covered by wooden doors (see photos 8 – 9). Another awning on the east elevation is shorter, in line with the roof (see photos 12 – 13).



Photograph 2: Building 1, east elevation, camera facing west, May 3, 2016.

Photograph 3: Building 1, south and west elevations, camera facing northeast, May 3, 2016.

Photograph 4: Building 2, east elevation, camera facing northwest, May 3, 2016.

Photograph 5: Building 2, east elevation, camera facing west, May 3, 2016.

Photograph 6: Building 2, east elevation, camera facing west, May 3, 2016.

Photograph 7: Building 2, east and south elevations, camera facing northwest, May 3, 2016.

Photograph 8: Building 2, south elevation, camera facing north, May 3, 2016.

Photograph 9: Building 2, south elevation, camera facing northeast, May 3, 2016.

Photograph 10: Building 2, south elevation, camera facing northwest, May 3, 2016.

Photograph 11: Building 2, west elevation, camera facing southeast, May 3, 2016.

Photograph 12: Building 2, west elevation, camera facing east, May 3, 2016.

Photograph 13: Building 2, west elevation viewed across yard, camera facing northeast, May 3, 2016.

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

11188 Cedar Avenue

By 1928, Louis Rapellin owned the northeast portion of Lot 387 and Rene Rapellin the southeast portion. Unlike most of the surrounding land, the five-acre parcels were not planted in orchards during this period. Based on improvement values recorded in Block Books, a house or small farm building on the north parcel (apparently no longer extant) was constructed in 1930. By 1938, there was also a house on Rene's parcel to the south.

In 1937, Rene sold his parcel to Jenner and Joan Beebe Pynch (spelled Pinch on some documents). Jenner was a ranch foreman and Joan was a teacher during this era. The couple lived in Los Angeles in 1940. They appear to have purchased the lot in order to invest in son Wendell's ranching venture (Wendell purchased the north half of Lot 387 about the same time). The Pynch family appears to have built the house near the southern parcel boundary (11188 Cedar Avenue) in 1938. The original address was 872 South Cedar Avenue. Jenner and Joan Pinch moved into the house in the 1940s, living there until at least 1948.[3]

The Pynch family began subdividing the parcel in 1946, selling the 132-foot-wide strip of land at the south end of the parcel on which the original house was sited to Notie and John R. Berry. (The Pynch family sold the remaining portions of the property the following year.) The Berrys were both Midwesterners, and reaching retirement age when they moved to Bloomington. They had lived and raised their children in Alhambra and later the San Fernando Valley, where John Berry was a farm foreman. The Berrys appear to have planted a small orchard at the southeastern corner of the parcel. About 1948, they built a second house on the parcel, to the north of the original house and closer to the street. In 1958, voter registration documents show John Rescum Berry and Mrs. Notie Agnes Berry living at 11118 Cedar Avenue, probably in the newer house. They lived on the property until at least 1964. The property changed hands several times beginning in the 1980s. Current owners George and Betty Walters purchased it in 2000.[4]

Evaluation:
The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible. Criterion 1: 11188 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: 11188 Cedar Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR under Criterion 2.

Criterion 3: The two houses at 11188 Cedar Avenue are common examples of modest dwellings constructed in the 1930s and 1940s and lack architectural distinction. The older house (Building 2) has also been extensively altered. Therefore its original characteristics are difficult to discern and it lacks historic integrity. Neither house is eligible to the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11188 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] U.S. Census Records, Los Angeles, 1940; California Voter Registrations, Bloomington, CA, 1948.

[4] U.S. Census, Los Angeles County, 1930, 1940.

P1. Other Identifier: 11260 Cedar Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ _ ___ **B.M.**

c. Address 11260 Cedar Avenue City Bloomington Zip 92316

d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463322.3 mE/ 3767726.1 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-11

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. The 7.5 acre parcel northwest of the intersection of Cedar and Jurupa Avenues is primarily bare dirt and weeds, with a few mature trees near the buildings (see photo 3). The primary dwelling fronts onto Cedar Avenue, and features a complex compound plan and cross-gabled roof with front shed dormer. Glass has been replaced with plywood on the dormer's three decorative windows, and the dormer is also patched with plywood. The full-width porch is supported by Roman columns atop heavy brick piers. The front door is centered on the porch and has a security screen door. It is accessed via sets of concrete steps at the center and side of the porch. The building is clad in clapboard siding and windows are aluminum and vinyl sliders. There is a brick chimney on the north (side) elevation. Because of the replacement of doors and windows and alteration of original window openings the original features of the house are difficult to interpret. Features like the wide porch, its heavy piers, and the front dormer are elements of the Craftsman style, while clapboard siding and Roman columns more consistent with a turn-of-the-century National Folk house. The combination of these elements along with the irregular plan of the building indicate multiple alterations over the life of the building (continued page 3).

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: East elevation, camera facing northeast, May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1929, 1939, San Bernardino County Block Books

***P7. Owner and Address:**
Phoebe Deckel
11260 Cedar Avenue
Bloomington, CA 92316

***P8. Recorded by:** (Name, affiliation, address)
Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**
May 3, 2016

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: McKinley House/Sayles House
B2. Common Name: 11260 Cedar Avenue
B3. Original Use: dwelling B4. Present Use: dwelling
***B5. Architectural Style:** Craftsman/National Folk/Minimal Traditional
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, 1928
Secondary dwelling, c1939
Sheds, prior to 1945

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** Secondary dwelling, sheds
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The buildings do not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

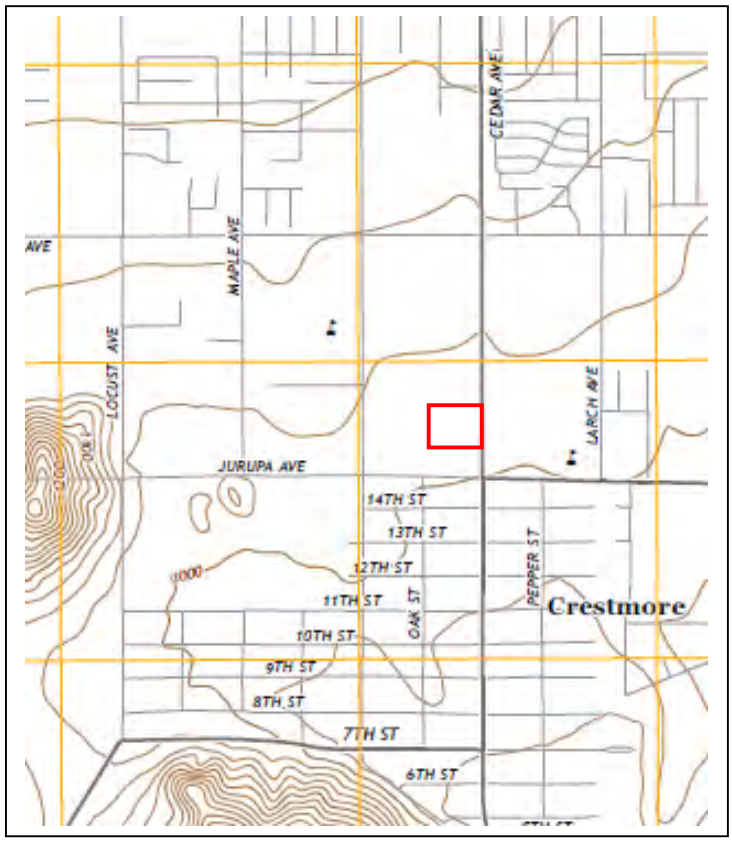
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



***P3a. Description (continued):**

Photograph 2: North elevation of primary dwelling, camera facing southeast, May 3, 2016.

Photograph 3: Property overview, camera facing southwest, May 3, 2016.

The secondary dwelling fronts onto Jurupa Avenue and is rectangular in plan. Its moderate pitch side-gabled roof with decorative vertical siding at the gable ends and modest size are elements of the Minimal Traditional style, which popular for small houses from the 1930s until about 1950. It has a projecting full-width porch under a low-pitch shed roof with simple "ladder" supports. Its centered entryway has a metal security door. Windows are double hung wood sash with four horizontally-oriented lights. Cladding is wide horizontal wood siding (see photo 4).

Photograph 4: Secondary dwelling on Jurupa Avenue showing west and south elevations, May 3, 2016.

Photograph 5: Sheds, camera facing northeast, May 3, 2016.

There are two small front-gabled buildings to the north of the secondary dwelling that appear to have been sheds or garages. They are in poor condition, and openings have been covered with plywood on the larger western shed. Its cladding is clapboard. The smaller eastern shed, which is closer to the secondary dwelling, has a shed-roofed porch with simple square supports and a swinging double vehicle door (see photo 5).

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

11260 Cedar Avenue

The Bloomington Land Company (a real estate company) owned much of the land in the neighborhood in the years after the turn of the twentieth century. By the 1910s, an entity named the Bloomington Improvement Company (probably the same company with a new name) owned the land. Lot 394 was subdivided in 1917, when E.A. Featherstone purchased the roughly nine acres east of the railroad, before the house was constructed. Ruth P. McKinley purchased in 1927. McKinley was a Missouri native, where she was born about 1860. The McKinley family appear to have built the house at 11260 Cedar Avenue about 1929. (The original address was 894 Cedar, current address numbers on Cedar Avenue date from the 1950s). By 1830, 70-year old Ruth was living on the property with adult children Neal and Gertrude as well as Gertrude's husband Dewey. Neal, a farmer, raised chickens on the property. Matriarch Ruth died in 1931, and the family sold the property the following year.[3]

Martha P. and Ritner (Ratner) Sayles bought the house and chicken ranch in 1932. The Pennsylvania natives were both born about 1890. Martha Preston married Ritner Sayles about 1925, and the couple relocated to California. Their son, Ritner Preston Sayles, was born in Riverside in 1927. They had a dairy in Bloomington on a rented property before buying the McKinley place. The family attended Bloomington's First Congregational Church, where Martha played piano. Martha worked in mental health care. Ritner planted a citrus orchard on the north half of the property. By the late 1940s, the whole property was devoted to the orchard. He continued to list his occupation as "dairyman," so may have continued to operate the rented property. In 1936, nine-year-old Ritner Preston Sayles contracted pneumonia and died after five days in the hospital. The second house on the parcel, which fronts onto Jurupa Avenue east of the railroad tracks, was constructed about 1939 after the Sayles family purchased the property. They lived in the house on Jurupa and used the older house as a rental. Originally, it shared the address 894 Cedar Avenue with the McKinley house, although it faced Jurupa Avenue. Martha died in 1940, and Ritner continued living on the property. He was an avid amateur archaeologist, and was a cofounder of the San Bernardino County Museum, and became its director emeritus after he retired from farming. The San Bernardino County Museum was located near the Sayles property in Bloomington for decades before moving to Redlands in 1975. Sayles owned and lived on the property through at least 1958. Sayles died in 1982.[4]

Sayles rented the McKinley house to the Gerald Smith in the 1940s, who lived there with his wife Maxine and young daughter. Maxine Smith was a psychiatrist, and Gerald an educator and superintendent of Bloomington schools. Like Sayles, Smith was also an avocational

---

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern],* State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] San Bernardino County Block Books; U.S. Census Records, Bloomington, California, 1930.

[4] San Bernardino County Block Books, 1934 – 1939, 1940 – 1945, 1946 – 1951; U.S. Census Records, Bloomington, California, 1930, 1940; The Evening Times from Sayre, Pennsylvania, 15 May 1936, p, 9; San Bernardino County Sun, 3 February 1974, p. 143. 6 January 1975, p. 13; California Voter Registrations, Bloomington, CA, 1946.

archaeologist and in 1952, he helped launch the San Bernardino County Museum, which later moved to Redlands. The family was living in the old McKinley house on Cedar Avenue when their son was born in July of 1946 until at least 1949. After 1952, the McKinley house was rented to a succession of short-term residents.[5]

Current owners Ami and Phoebe Deckel acquired the property in the early 1980s. They appear to have resided in one of the houses.

Evaluation:
The California Register of Historical Resources (CRHR) require that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 11260 Cedar Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: Although Ritner Sayles and Gerald Smith both lived at 11260 Cedar Avenue, research has not indicated that their relevant discoveries in regional archaeology or their formation of the San Bernardino County Museum occurred at the subject property. Therefore, the property is not significantly associated with persons important to local or state history and does not appear eligible to the California Register under Criterion 2.

Criterion 3: Criterion 3: The primary dwelling at 11260 Cedar Avenue is an example of a vernacular house with elements from different architectural styles that has also been altered in recent decades. The secondary dwelling is a modest example of a Minimal Traditional house, a popular style for inexpensive houses during the Great Depression, when it was constructed. Both lack architectural significance and are therefore not eligible to the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 11260 Cedar Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historical resource under CEQA.

[5] Scott Gold, "Obituaries: Gerald A. Smith; Educator Helped Establish Museum," LA Times, 3 March 2001.

P1. Other Identifier: 18604 Jurupa Avenue

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Fontana **Date** 2015 **T**___; **R** _ __; ___ ¼ **of Sec** ___; _ ___ **B.M.**

c. Address 18604 Jurupa Avenue City Bloomington Zip 92316

d. UTM: (give more than one for large and/or linear resources) Zone 11 ; 463219.44 mE/ 3767646.56 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Assessor Parcel Number 0257-091-15

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The neighborhood is characterized by a combination of industrial and residential properties, empty lots, and a school. A wide driveway leads to the building, which is set back only about 25 feet from the street. The property is enclosed by a tall metal fence that runs along the front of the property. The surrounding yard is mostly dirt with some bushes and trees. The building has a roughly rectangular plan with a rectangular-plan addition to the northeast. The primary roof is side-gabled and low pitch, and tops the portion of the building that originally housed the fire trucks. The building is constructed of concrete masonry units and gable ends are clad in stucco Its main (south) elevation has two large vehicle doors that have been infilled. A projecting volume at the east is flat-roofed. An entryway at its south elevation is fitted with a partially glazed door with sidelight and transom which is sheltered by the broad eave overhang. Windows are aluminum sliders and covered in security bars. A small addition to the northeast of the building has a hipped roof and vertical-groove plywood cladding.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single-family property

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph 1: South (main) and west elevations of building, camera facing northeast, photograph taken May 3, 2016.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
c1960s, San Bernardino Sun

***P7. Owner and Address:**

Bloomington Recreation District
18604 Jurupa Avenue
Bloomington, California

***P8. Recorded by:** (Name, affiliation, address)

Kara Brunzell
1613 B Street
Napa, California 94559

***P9. Date Recorded:**
May 3, 2016

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") *None*

***Attachments:** NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (list) _____

B1. Historic Name: 18604 Jurupa Avenue
B2. Common Name: 18604 Jurupa Avenue
B3. Original Use: firehouse B4. Present Use: recreation center
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alteration, and date of alterations) original construction, c1960s

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location:** _____
***B8. Related Features:** _____
B9. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building does not meet the criteria for listing on the California Register of Historical Resources (CRHR) (see continuation sheet).

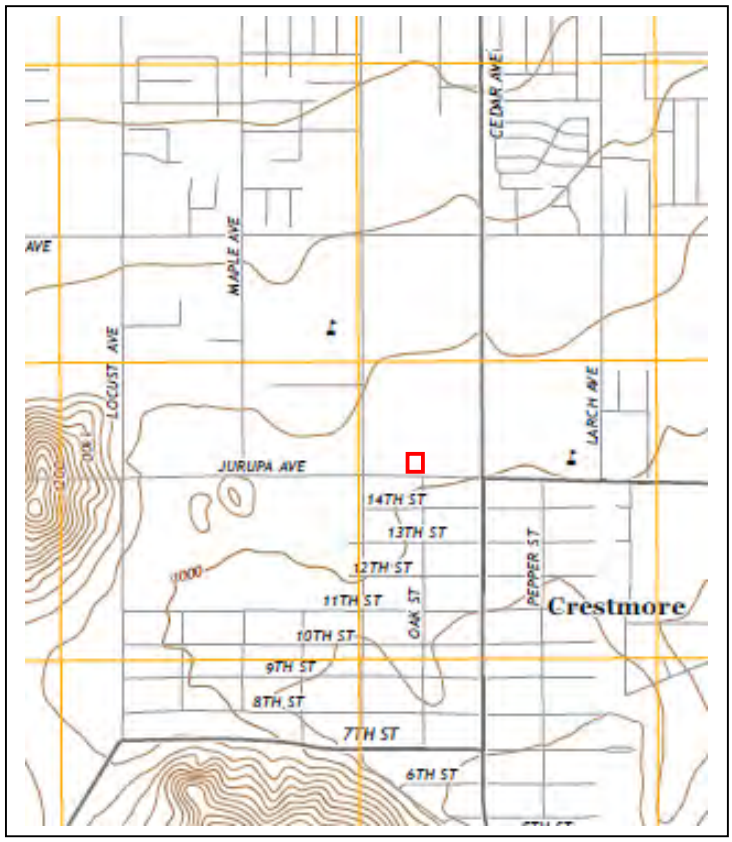
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
(See Footnotes)

B13. Remarks:

***B14. Evaluator:** Kara Brunzell

***Date of Evaluation:** May 3, 2016

(This space reserved for official comments.)



Photograph 2: South and east elevations, camera facing northwest, May 3, 2016.

Photograph 3: East and north elevations, camera facing west, May 3, 2016.

B10. Significance (continued):

Bloomington

The Semi-Tropic Water and Land Company incorporated in 1887 in order to sell real estate and water rights. The company acquired 285,000 acres of land along ten miles of Lytle Creek, giving it riparian rights and allowing it to control and sell the water. The company laid out small towns including Fontana, Rialto, Sansevaine, and Bloomington on its land holdings. In 1891, the company subdivided most of the land surrounding the town sites into 20-acre parcels it called "farm lots." The project area was directly south of the original Bloomington plat, near the southern border of the company's holdings. The Riverside Cement Company built a plant just to the south in Crestmore around the turn of the century. In 1904, a subsidiary of the Union Pacific constructed a railway line from Bloomington to Crestmore that ran through the center of lot 387.[1]

Although people began to purchase the farm lots and move onto them, the towns laid out by the Semi-Tropic Water and Land Company grew very slowly. The area remained primarily agricultural well into the twentieth century. In 1942, transformation of the region from rural to suburban began when Henry Kaiser opened his plant in Fontana in order to provide steel for World War II. The plant quickly became one of the most important steel producers on the West coast. The plant along with construction of the San Bernardino Freeway brought about a population boom as workers moved to the Fontana area. Population growth in the area has continued over the decades, with nearly 200,000 people living in Fontana as of 2009. Bloomington, however, has developed more slowly, and retains some of its rural character in 2016.[2]

18604 Jurupa Avenue

E.A. and Anne Featherstone owned the east half of Lot 394 beginning in 1917. Citizens National Bank acquired the small lot west of the railroad tracks in 1932. An entity called Properties, Inc. bought the property in 1933, and sold to Ely and Laura Johnson in 1941. They sold to William and Amy Miller in 1945. The property remained undeveloped through the 1950s, and during this period was owned and farmed by the successive owners of the west half of Lot 394. In the early 1960s, the building at 18604 Jurupa was constructed. It was built to be Bloomington's second fire station. When the San Bernardino Freeway was constructed a few years later, however, it cut the neighborhood off from the northern part of Bloomington, so it was no longer a practical location for a fire station. By the 1970s, the building housed the Bloomington Contact Station, also called Bloomington Neighborhood Services Center, where low-income residents could get blood pressure checks and take advantage of other health and social services. In 2014, the building opened as a recreation center, offering after-school children's enrichment classes and other activities.[3]

---

[1] William Hamilton Hall, C.E., *Irrigation in California [Southern]*, State office of printing: Sacramento, 1888, 330-331; San Bernardino County Recorder, Map Showing the subdivision of the Lands of the Semi-Tropic Land and Water Company, 9 march 1891.

[2] John Charles Anicic, Jr., *Fontana*, Arcadia Publishing, Charleston, South Carolina, 2005, 7; City of Fontana History, Fontana Chamber of Commerce, http://fontanacacoc.wliinc21.com/live_and_work/history.aspx, accessed 17 June 2016.

[3] San Bernardino County Sun, 10 March 1981, p. 13, 21 January 1922, p. 21, 6 February 1982, p.11.

Evaluation:

The California Register of Historical Resources (CRHR) requires that a significance criterion from 1-4 be met for a resource to be eligible.

Criterion 1: 18604 Jurupa Avenue is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Therefore the building is not eligible to the CRHR under Criterion 1.

Criterion 2: 18604 Jurupa Avenue is not associated with the lives of persons important to local, state, or national history, and therefore is not eligible to the CRHR under Criterion 2.

Criterion 3: 18604 Jurupa Avenue is a utilitarian example of a mid-century fire station. Built to house fire trucks and firefighters, it lacks decorative features or design distinction. It has also been altered over the years it, most notably by the infilling of the fire truck doors, so that it lacks the ability to convey its history as a fire station. It lacks architectural significance and lacks integrity and is therefore not eligible to the CRHR under Criterion 3.

Criterion 4: In rare instances, buildings themselves can serve as sources of important information about historic construction materials or technologies and be significant under Criterion 4. 18604 Jurupa Avenue does not appear to be a principal source of important information in this regard.

It has been assigned a Historic Resource Status Code of 6Z, and therefore does not qualify as a historic resource under CEQA.

APPENDIX B

HISTORICAL SOCIETY COMMUNITY CONSULTATION

Subject:	BCR Consulting Information Request on Old Neighborhood in Bloomington
From:	David Brunzell (david.brunzell@yahoo.com)
To:	History@BloomingtonGarage.com; fontanahistoricalsociety1906@gmail.com;
Date:	Thursday, June 30, 2016 1:53 PM

To the Bloomington Preservation Foundation and Historical Society, and the Fontana Historical Society,

BCR Consulting is completing cultural resource evaluations for some historic-age buildings within the proposed Bloomington Distribution Project. The proposed development includes the construction of a 671,000 square foot distribution building, a detention basin, and landscaping along Cedar Avenue, Linden Avenue, and Jurupa Avenue. It is surrounded by residential properties to the south, and low-density rural residential and industrial properties to the north, east, and west. The project site is located in Section 27 of Township 1 South, Range 5 West, San Bernardino Baseline and Meridian. The project is depicted on the United States Geological Survey (USGS) *Fontana, California* (1980) 7.5-minute topographic quadrangle (see attached location map).

We are writing to request any information you might have connected to the potential for the project site to impact archaeological or historical remains that our efforts have not uncovered. Please contact me with any information, or with questions or comments.

Sincerely,

David Brunzell
Principal Investigator/Archaeologist

BCR Consulting LLC
Certified Small Business (SB)
1420 Guadalajara Place
Claremont, California 91711
909-525-7078

www.bcrconsulting.net

Attachments

- Fig 1.jpg (467.08KB)

Appendix D
Hazardous Materials

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Northwest Corner of Cedar and Jurupa Avenues
Bloomington California

Prepared for:

Mr. Jeremy Mape
Western Realco
500 Newport Center Drive Suite 630
Newport Beach, California 92660

Prepared by:

Hazard Management Consulting, Inc.
211 W. Avenida Cordoba, Suite 200
San Clemente, CA 92672
(949) 361-3902

December 22, 2014

TABLE OF CONTENTS

EXECUTIVE SUMMARY III
1. INTRODUCTION 1

1.1. Objective 1
1.2. Scope Of Services, Methodology And Limitations 2

2. SITE DESCRIPTION 2

2.1. Site Setting 2
2.2. Regional Geology and Hydrogeology 4

3. INTERVIEWS & USER PROVIDED INFORMATION 4

3.1. Title Records 4
3.2. Owner Knowledge 4
3.3. Environmental Liens or Activity and Use Limitations 4

4. SITE USE AND HISTORY 4

4.1. Aerial Photograph Review 4
4.2. Topographic Maps 6
4.3. Sanborn Maps 6
4.4. EDR City Directory Review 6
4.5. Summary 6

5. SITE AND VICINITY RECONNAISSANCE 6

5.1. Site Reconnaissance. 6
5.2. Site Vicinity 9

6. REGULATORY AGENCY DATABASE RESEARCH 9

6.1. Database Records Concerning the Target Property 9
6.2. Database Records Concerning the Site Vicinity 10
6.3. Orphan Sites 10
6.4. Summary of Off Site Issues 10

7. PRIOR INVESTIGATIONS 11
8. OTHER RECORDS 11

8.1. Oil and Gas Wells 11
8.2. State of California 11
8.3. County of San Bernardino 11

9. ASBESTOS AND OTHER MATERIALS 12

9.1. Asbestos 12
9.2. Radon..... 12
9.3. Mold..... 12
9.4. Vapor Intrusion 12

10. SUMMARY OF FINDINGS 12
11. DATA GAPS.....13
12. CONCLUSIONS 13
13. RECOMMENDATIONS 13
14. QUALIFICATIONS 13
15. REFERENCES 15

TABLES

Table 1 Off Site Facilities

FIGURES

Figure 1 Site Location
Figure 2 Site & Vicinity Map

APPENDICES

A - Site Photographs
B - EDR Historical Reports
C- Completed Questionnaires/County Records Search

Executive Summary

Hazard Management Consulting, Inc. (HMC) is pleased to submit this Environmental Site Assessment (ESA) for the property referenced above in the city of Bloomington, California (Site) (Figures 1 & 2). This ESA is intended to evaluate the Site for potential Recognized Environmental Conditions (RECs) that may be present at the Site and was conducted as part of your efforts to purchase the property. The Site contains 14 contiguous parcels that are being assembled from various owners for redevelopment. At the present time, the Sites include residential units on former ranch/orchards, open land and a residential compound where commercial activities including truck maintenance and repair and automotive sales take place.

The Site is bound:

- To the north by a vacant field and a church;
- To the east by Cedar Avenue across which is a vacant lot, a residence and a facility used for truck storage;
- To the south by Jurupa Avenue across which are single family residential homes; and
- To the west by Linden Avenue, beyond which are residential homes.

Key findings of this Phase I ESA are as follows:

- The Site was historically orchards and agricultural which were removed beginning in the 1950s and gone by the 1980s.
- The Site is currently a collection of former orchards with residential units in place. The Site included an active bee keeping operation, active truck maintenance and storage and residences.
- Review of records indicates that 8 USTs were removed from the Site. No record of soil sampling or a closure report was available either from the owners or at the County of San Bernardino. This would be considered an REC in our judgment.
- The property at 11134/38 Cedar was involved in truck repair. Staining of the ground surface and moderate quantities of hazardous materials with poor housekeeping was noted on Site. This would be considered an REC in our judgment.
- County records indicates that there was a fire at the 11188 Cedar Avenue facility where a large quantity of 55 gallon drums were formerly stored. The drums have since been removed, replaced by an AST, which has also been removed. The unknown contents stored in these drums coupled with the fact that the facility experienced a fire would lead this condition to be considered an REC in our judgment.
- There were no facilities either close enough or in the right direction to be considered an REC to the Site in our judgment.

Conclusions

We have performed a Phase I Environmental Site Assessment for the Site located at the northwest corner of Cedar and Jurupa Avenues in Bloomington, California. **Our review has found the following RECs, associated with the Site:**

- **The operation and removal of 8 USTs without closure sampling at 11134/38 Cedar Ave;**
- **The poor housekeeping at 11134 Cedar Ave and attendant stains on the ground surface;**
- **The prior fire at 11188 Cedar Ave with the previous quantity of 55 gallon drums and an AST stored in this area.**

Recommendations

We recommend that a subsurface investigation be conducted in the areas cited above to assess whether there have been releases of hazardous substances to the environment from these RECs.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Northwest Corner of Cedar and Jurupa Avenues
Bloomington California

1. INTRODUCTION

Hazard Management Consulting, Inc. (HMC) is pleased to submit this Environmental Site Assessment (ESA) for the property referenced above in the city of Bloomington, California (Site) (Figures 1 & 2). This ESA is intended to evaluate the Site for potential Recognized Environmental Conditions (RECs) that may be present at the Site and was conducted as part of your efforts to purchase the property. The Site contains 14 contiguous parcels that are being assembled from various owners for redevelopment. At the present time, the Site includes residential units on former ranch/orchards, open land and a residential compound where commercial activities including truck maintenance and repair and automotive sales take place.

1.1. Objective

In accordance with the ASTM E 1527-13 Standard Practice for Environmental Site Assessments, the objective of the ESA is to assess, to the extent feasible under the standard, the likelihood that Recognized Environmental Conditions (RECs), as defined by ASTM, are present at the Site.

A Recognized Environmental Condition "means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property 1) due to release to the environment; 20 under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions. The term *de minimis* condition includes releases that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies" (ASTM Standard Practice E1527-13). Performance of a Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for Recognized Environmental Conditions in connection with a property, within reasonable limits of time and cost.

In addition to RECs, this assessment also inquired into the presence of Historical RECs, Controlled RECs and diminimous conditions as those terms are defined by ASTM.

All Appropriate Inquires (AAI) as defined in the Final Rule (40 CFR, Part 312), must be conducted by persons seeking the landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) prior to acquiring a property or seeking or receiving federal brownfields grants under the authorities of CERCLA. The purpose of AAI, as defined in the AAI Final Rule, is to identify releases and threatened releases of hazardous substances, which cause or threaten to cause the incurrence of response costs. The U.S. Environmental Protection Agency (EPA) has stated that ASTM Standard E-1527-13 is consistent with the Standards and Practices for AAI, and is compliant with the statutory criteria for AAI.

1.2. Scope Of Services, Methodology And Limitations

The findings of this ESA must be viewed in recognition of certain limiting conditions. The scope of work commissioned for this project does not represent an exhaustive study, but rather a reasonable inquiry, consistent with good commercial practice, in general accordance with ASTM Practice E-1527-13.

The scope of work for this ESA included the following activities:

- A site walk to document the current condition of the Site and neighboring facilities.
- Review of a regulatory database report.
- Review of historical references including aerial photographs, city directories, Sanborn Maps and topographic maps.
- Interviews with the User.
- Review of questionnaires completed by the Sellers of the Site.
- On-line research and file review requests concerning the Site and suspect off site sources at the State of California Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) websites.
- Submittal of a file review request to the County of San Bernardino.
- Preparation of this report of findings.

In the course of this assessment, HMC has relied on information provided by outside parties, such as regulatory agencies, previous reports and interview sources. For the purpose of this assessment, such third-party information is assumed to be accurate unless contradictory evidence is noted, and HMC does not express or imply any warranty regarding information provided by third-party sources.

2. SITE DESCRIPTION

2.1. Site Setting

The Site is an assemblage of 14 separate parcels owned by multiple owners in a primarily residential area of Bloomington. Specifically, the Site includes the following parcels:

OWNER	APN	BUILT	LOT AREA	ACRES	ADDRESS	STREET NAME
WALTERS GEORGE W & BETTY E LIV TR 1	0257091190000	1938	74052	1.700	11166	CEDAR
WALTERS GEORGE W & BETTY E LIV TR 1	0257091230000	1947	76830	1.764	11188	CEDAR
WALTERS GEORGE W & BETTY E LV TR 11	0257091320000	1925	65340	1.500	11109	LINDEN
WALTERS GEORGE W WALTERS BETTY E	0257091200000	1956	7200	0.165	11174	CEDAR
WALTERS GEORGE W WALTERS BETTY E	0257091330000	1915	255261	5.860	11141	LINDEN
JAYNES ROGER & MARY REV LIV TR 1 / 27	0257091290000	0	206474	4.740	11219	LINDEN
JAYNES ROGER & MARY REV LIV TR 1 / 27	0257091140000	0	12075	0.277	18606	JURUPA
JAYNES ROGER & MARY REV LIV TR 1 / 27	0257091280000	0	105415	2.420	18574	JURUPA
JAYNES ROGER D JAYNES MARY ROSE	0257091300000	1964	78408	1.800	11191	LINDEN
DECKEL AMI & PHOEBE FEMILY TR 12 / 24	0257091110000	1928	376794	8.650	11260	CEDAR
TELLO HERCULANO	0257091070000	1943	38350	0.880	11150	CEDAR
ESTUDILLO JUAN	0257091250000	1961	11200	0.257	11138	CEDAR
ARAUJO TOMAS ARAUJO KAREN M	0257091260000	1979	184694	4.240	11134	CEDAR
BLOOMINGTON RECREATION/PARK DISTRICT	0257091150000	0	0	0.000		

As shown on Figure 2.

The Site is bound:

- To the north by a vacant field and a church;
- To the east by Cedar Avenue across which is a vacant lot, a residence and a facility used

for truck storage;

- To the south by Jurupa Avenue across which are single family residential homes; and,
- To the west by Linden Avenue, beyond which are residential homes.

2.2. Regional Geology and Hydrogeology

The Site is located within the northwestern portion of the Riverside North groundwater basin, which is recharged by streams and creeks that carry surface water from nearby highlands to the Santa Ana River and its tributaries. Groundwater in the area occurs within unconsolidated alluvial sediments and within fractured batholithic units. The depth to groundwater has been found at a depth of approximately 170 feet below ground surface at a landfill in the Site vicinity (GeoLogics, 2013).

Historical water level data suggests that groundwater in the alluvial aquifer flows to the southeast under an average gradient between 0.01 and 0.003 foot/foot (GLA, 1996). Groundwater beneath the Site vicinity occurs primarily within fractured granitic bedrock and overlying alluvium.

3. INTERVIEWS & USER PROVIDED INFORMATION

The User of this report is Western Realco. We submitted a questionnaire to Mr. Jeremy Mape of Western Realco who indicated that his firm has no specific or unique knowledge of the Site. Mr. Mape indicated that he is unaware of any environmental actions, litigation or restrictions and indicated that they are paying full market price for the Site.

3.1. Title Records

As of the date of this report, we have not received a Title Report for review.

3.2. Owner Knowledge

We received completed questionnaires completed by the various owners who were not aware of any environmental investigations, remediation or subsurface features. The Sites appear to be residential in nature or former orchards. At one of the parcels, Ms. Walters indicates that there is a UST in the orchard used to collect rainwater.

3.3. Environmental Liens or Activity and Use Limitations

We are not aware of any activity or use limitations being filed on Title for the Site.

4. SITE USE AND HISTORY

Past usage of the subject site was assessed through a review of historical aerial photographs, topographic maps and an EDR search of city directories and prior reports. Review of the Sanborn Map collection indicates that Sanborn Maps were not produced for the Site.

4.1. Aerial Photograph Review

Aerial photographs covering the Site were obtained from Environmental Data Resources, Inc. (EDR). Photographs were available for the following years 1938, through 2012. Copies of the

aerial photographs are included in Appendix B. A summary of the observations noted from the aerial photographs is as follows:

1938 In the photograph from 1938, the Site and vicinity were noted to be in agricultural usage that appeared to be primarily orchards in nature. There were approximately 6 residences located on what is the Site. Cedar, Linden and Jurupa Avenues are all in place as is the dirt road that separates the Cedar and Linden Parcels today.

1948 The only change noted in the photograph from 1948 was that additional residential buildings were apparently constructed on parcels fronting Cedar Avenue.

1953 In the photograph from 1953, the Site was substantially similar as to what was described above though portions of the orchards had been removed and replaced with an open field as well as a clearing at the 11134 Cedar Ave property.

1966 The photograph from 1966 shows that most of the orchard activity had been removed from the Site with the exception of the southeast quadrant fronting on Jurupa and Cedar Avenues. The orchards seemed to be replaced with open fields (Except the 11134 Cedar property described above). The current power substation located along the southwest portion of the Site was not yet built but the area that is occupied by the substation was notably a different color suggesting grading may have taken place. A school had now been constructed to the northwest of the Site.

1977 The only change noted from the prior photograph was that the substation appeared to be under construction. Development of what appeared to be residential units was noted to the west of the Site

1985 In the photograph from 1985, the orchards that were present along the southeast quadrant of the Site had been removed. A second residential structure was noted along Linden near the center of the parcel. Also, the Jaynes Property on Linden was noted to have had buildings added in the rear of the yard where the bee operations are currently conducted. No other changes were noted.

1990-94 No changes were noted on the Site or site vicinity.

2005 Changes noted on the 2005 photograph include addition of material to the Walters property and the paving of the property at 11134 Cedar. At the Walters properties both on Linden and Cedar, what appeared to be surface storage was noted with numerous small items. No discernible items could be observed.

2009 The photograph from 2009 shows the addition of several metal buildings along the northern portion of 11134 Cedar where truck repair is currently occurring as well as the addition of numerous trucks being stored on that parcel.

2010-12 No changes noted.

4.2. Topographic Maps

Historical topographic maps were also reviewed as part of this effort and aided in interpreting the overall site history though no specific observations regarding the Site were made.

4.3. Sanborn Maps

Sanborn maps are maps that were created for the insurance industry to document site activities in metropolitan areas of the country and were used for underwriting purposes. They often times contain detailed information about a site. While they were prepared for insurance underwriting and were not environmental maps per se, they often times contain information that is useful in evaluating the historical use of a Site. Sanborn Maps were not reportedly prepared for the Site.

4.4. EDR City Directory Review

EDR performed a search of the City Directory records for the Site address at approximately five-year intervals. The listings for the addresses associated with the Site were primarily residential in nature. There were listings for trucking operations and an entity named Jim's Pipeline Service which is described further in the review of County of San Bernardino records. No names were reported that generated a concern over Site usage.

4.5. Summary

The Site was historically agricultural in usage with orchards having been planted on Site and in the Site vicinity. The orchards were removed beginning in the 1950s and were gone by the mid 1980s. The Site contains numerous residences that date back to when the orchards were present though the property at 11134/38 Cedar appears to have had trucking and contractor yard uses as well.

5. SITE AND VICINITY RECONNAISSANCE

5.1. Site Reconnaissance.

Mr. Mark Cousineau of HMC conducted a Site and Site Vicinity reconnaissance of the property on October 29 and December 10, 2014. The reconnaissance was conducted in order to identify visible evidence of RECs at the Site and to assess possible conditions off Site that may impact the Site. We were escorted during our property tour of the Jaynes and Walters locations and were unaccompanied for the balance of the Site.

The following describes the observations made during our Site inspection:

11109/41 Linden - Walters
This property was a residence and former orchard with extensive amounts of storage taking place along the rear of the Site. Two residences were noted along with a garage/barn like structure, several temporary classroom trailers and a metal building frame being stored on Site.

In addition, there were dozens of former vehicles, trailers, boats, golf carts and miscellaneous pieces of equipment being stored on Site.

Along the northern portion of the parcel were remnants of the former orchard as well as numerous soil piles. We inspected the piles and did not see any evidence of hazardous materials, waste or debris in the soil. There were sporadic 5-gallon cans of waste oil and a few 55-gallon drums of oil and cleaners throughout the yard area. Nothing beyond diminimous stains were noted on Site. Mrs. Walters indicated that there is an underground storage tank being used to collect rainwater in the orchard area. Mrs. Walters could not identify the exact location.

11180-11188 Cedar- Walters

At this assemblage of parcels, there were 5 single-family residential structures present with residences living in the structures and extensive storage in the rear yards. Storage included boats, cars and miscellaneous pieces of equipment. Sporadic 5-gallon cans of oil and paint were noted. Nothing beyond diminimous stains were noted on Site.

11191/ 11219 Linden/ 18574/18606 Jurupa- Jaynes

The Jaynes own several contiguous parcels along the southwest quadrant of the property. The northern most property was occupied by their residence. Behind the residence were several metal buildings being used to store supplies for their bee keeping business. Several trucks were parked on Site and we were informed by Mr. Jaynes that they are serviced by an off site contractor who comes on Site to perform the necessary service and removes all chemicals with him. In addition, there is a metal frame and roof covering a concrete pad that is being used to store hay for animals maintained on Site.

To the south of their residence is a large open field that is being used to tend goats. This parcel straddles the electrical substation that is located at the northeast corner of Linden and Jurupa Aves. Along the southeast portion of this parcel is a single building and parking area that is used as a day care.

Only minor amounts of chemicals were noted along the northern parcel and no stains or evidence of spills were noted.

11260 Cedar- Deckel

This property forms the southeast quadrant of the Site and is bound by Jurupa along the south and Cedar on the east. This parcel contains two single-family residences and a large open field that formerly contained an orchard. No evidence of chemical usage was present and no indications of stains or chemicals spills was noted.

11150 Cedar Ave- Tello

This property included a single family residence along Cedar Avenue and a rear storage building and rear yard. This property was being used for residential purposes. No chemical usage or storage was noted on Site.

11138 Cedar Ave- Estudillo
This parcel appeared to have three separate uses taking place. Along Cedar Avenue, the front of the Site was being used for automobile storage and sales. In the middle of the parcel was a single family home. Behind the home was a truck and automobile storage and repair operation. Minor staining and chemical usage was taking place in the rear portion though no significant stains or spills were observed.

11134 Cedar Ave- Araujo
The property at 11134 Cedar Ave included a residential use in the northeast corner of the parcel. Adjacent to that was an area being used to store and sell used automobiles. Behind the residence and car sales area were 4 metal buildings that ran along the northern property boundary and several metal sheds along the western boundary. This portion of the property was being rented to various entities and/or individuals for diesel truck repair, maintenance and storage. The maintenance areas were full of trucks and parts. Moderate chemical staining was noted in several locations in the maintenance area as were 55 gallon drums of new and used oil, parts cleaners and miscellaneous automotive chemicals such as grease, antifreeze and paint. There were some small ~ 200-400 gallon, above-ground storage tanks (ASTs) being used to store automotive chemicals. Housekeeping practices on Site were generally poor with numerous stains noted primarily along the northern boundary. The operators spoke minimal English and we were unaccompanied during our inspection.

No address
There is a former County road that is unpaved that bifurcates the Parcels and runs north/south. No evidence of impact or chemical spills was noted.

Description and Use of Site:	The site is an assemblage of parcels that include residences, a bee keeping operation, automotive sales and repair and storage.
Underground and Aboveground Storage Tanks:	No current underground storage tanks (USTs) were reported or observed at the Site other than a UST installed to collect rainwater. There were two small ASTs being used for storage of waste oil in the area of the truck repair.
Hazardous Materials, Hazardous Wastes or Petroleum Products:	Chemical usage was generally limited to the 11134/38 parcels where automotive repair operations were taking place. Chemical usage included new and used motor oil, parts cleaners, antifreeze and similar automotive chemicals.
Drains, Drain lines and Sumps:	No drainage features were noted on Site.
Pits, Ponds, Lagoons	No ponds, pits or lagoons were noted.
Industrial Wastewater:	Industrial wastewater was not generated as part of current operations.
Stains:	Moderate staining was noted in the 11134 Parcel in the area of the

	automotive repair.
Wells:	No wells were observed at the Site.
Transformers:	No transformers were noted on Site.
Other Features:	None

The areas of staining and poor housekeeping would be considered RECs in our judgment.

5.2. Site Vicinity

The Site is located in an area that includes a mix of uses including residential, commercial/industrial and undeveloped parcels. The Site is bound:

- To the north by a vacant field and a church;
- To the east by Cedar Avenue across which is a vacant lot, a residence and a facility used for truck storage;
- To the south by Jurupa Avenue across which are single family residential homes; and
- To the west by Linden Avenue, beyond which are residential homes.

The Site vicinity reconnaissance did not reveal any locations of concern from a visual perspective.

6. REGULATORY AGENCY DATABASE RESEARCH

Regulatory agency database information was obtained from a standard radius Site Assessment (ASTM) report by Environmental Data Resources, Inc. The center of the search was in the approximate center of the Site. Search distances for specific databases were one-quarter to one mile as specified in the ASTM 1527-13 standard. The database search includes over 70 federal, state, local, and proprietary records.

A complete copy of this report is included in Appendix B.

6.1. Database Records Concerning the Target Property

The target property (Site) was listed in the following databases searched as part of the review:

- Sweeps UST
- H-UST
- SB co. Permit

for the properties located at 11134 and 11138 Cedar Avenues. In addition, there is a listing for 11118 Cedar for Jim's Pipeline Service Inc. for H-UST and Sweeps UST suggesting that USTs were located on Site. Review of County records indicates that 8 USTs were removed from the Site under their jurisdiction though no soil samples were reported as being collected and no closure

report was submitted for the removal of the USTs. This would be considered an REC in our judgment.

6.2. Database Records Concerning the Site Vicinity

In review of the many entries on the database, we reviewed the following factors that affect the ability of a facility to affect the Site:

- Distance from the Site,
- Location from the Site with regard to the direction of groundwater flow,
- Nature of the release and whether the release has affected soil, groundwater or both,
- Status of the investigation (e.g. open or closed)

Only those facilities judged using these factors are discussed below. We reviewed the database report for off site potential sources within the relevant search distance. The following presents a summary of our findings:

Location	Address	Dist.	Direction	Lists	REC	Rationale
Verizon Wireless-Larch	10974 Cedar Ave	806’	NNE	San Bern. Co Permit	NO	No indications of a release in records.
Cedar & Santa Ana Station	10898 Cedar Ave	1385’	NNE	LUST H-UST, Sweeps UST, San Bern. Co Permit	NO	The case was closed by the lead agency.
Bloomington aka S&E Pipe	11311 Cedar Ave	124’	SE	H-UST, Sweeps UST	NO	No indications of a release in records. Facility would be down gradient to the Site.
SCE Bloomington Substation	Jurupa/Linden	Adj	SW	AST, San Bern. Co Permit	NO*	No evidence of a release was noted.

6.3. Orphan Sites

Orphan Sites are those properties that are included on various agency lists, but for which the records do not have sufficient address information for the database program to map the site. None of the addresses listed were close enough to be of concern.

6.4. Summary of Off Site Issues

There has been very little development of a type that would use or release chemicals in the Site vicinity and no such facilities were found affecting the Site as part of our review. There were no off site RECs affecting the Site in our judgment.

7. PRIOR INVESTIGATIONS

There were no prior reports available for the Site.

8. OTHER RECORDS

8.1. Oil and Gas Wells

The State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources online mapping website was reviewed for the location of active, plugged, or abandoned oil wells in the vicinity of the Site. The site is not located within the boundaries of an oil field and no records were obtained to suggest that oil or gas drilling had occurred on Site. There were no oil wells noted in the Site vicinity.

8.2. State of California

The State of California Geotracker and EnviroStor websites were also reviewed for information on potential on or off site facilities that are being remediated under either RWQCB or DTSC oversight. No reports of additional releases were noted that were not include in the EDR review.

8.3. County of San Bernardino

As part of our review, we requested a "Certified Record Search Finding" from the County of San Bernardino Fire Department (SBCFD). The SBCFD is the local agency in charge of hazardous materials and waste management and is a Certified Unified Program Agency (CUPA) for the region. The County indicated that they had files for:

Jakis Transport Inc. 11134 Cedar Ave
Jakis Transport is a trucking firm that performs diesel truck repair at the 11134 Cedar Ave Parcel. As part of their operations, they use and store chemicals in above ground tanks and 55 gallon drums. Violations noted by the County included not having an environmental contingency plan on file and certain drums as not being labeled. Other than paperwork, no corrective action was required.

Jims Pipeline Service 11138 Cedar Ave
This listing is for a UST permit.

James Pound 11134/38 Cedar Ave
This listing is for a UST permit as well as to list the facility as a hazardous materials handler.

Cedar, north of Jurupa
A 5 gallon bucket of waste oil was abandoned on the dirt road that bifurcates the parcels. No cleanup was necessary.

George & Betty Walters 11188 Cedar Ave
Evidence of an abandoned AST was obtained from this location. The inspector noted that this was the same location as a previous fire incident where an extensive number of 55-gallon drums were noted stored on Site. The inspector considered the storage a code enforcement matter.

Unknown 11118 Cedar Ave
Abandoned pumps and tanks were noted.

In response to the above UST listings, permits for various USTs were obtained for the 11134/38 parcels. Initially, a permit to remove 5 USTs was pulled though this was expanded to 8 USTs during the project. The 8 USTs were reportedly removed from the Site and no odors were noted. It appears that soil samples were required though there was no closure report or results of sampling present in the file.

From the review of the County files, the removal of USTs with no closure sampling available and the previous reference to a large quantity of 55 gallon drums that were stored at 11188 Cedar that subsequently experienced a fire would both be considered RECs in our judgment.

9. ASBESTOS AND OTHER MATERIALS

9.1. Asbestos

The buildings on Site were built before 1980 when asbestos was still prevalent in building materials. There is a moderate to high likelihood that asbestos is present in the buildings materials on Site.

9.2. Radon

The Site is listed as being located in Zone 2 with regards to radon indicating that radon maybe present at concentrations less than 4 pico curies / liter.

9.3. Mold

No mold issues were noted or observed during the Site walk.

9.4. Vapor Intrusion

There were no off site facilities using or storing volatile organic compounds or any found on site that would be considered to pose a vapor intrusion risk to the Site.

10. SUMMARY OF FINDINGS

Key findings of this Phase I ESA are as follows:

- The Site was historically orchards and agricultural in use which were removed beginning in the 1950s and gone by the 1980s.
- The Site is currently a collection of former orchards with residential units in place. The Site included an active bee keeping operation, active truck maintenance and storage and residences.
- Review of records indicates that 8 USTs were removed from the Site. No record of soil sampling or a closure report was available either from the owners or at the County of San Bernardino. This would be considered an REC in our judgment.

- The property at 11134/38 Cedar was involved in truck repair. Staining of the ground surface and moderate quantities of hazardous materials with poor housekeeping was noted on Site. This would be considered an REC in our judgment.
- County records indicate that there was a fire at the 11188 Cedar Avenue facility where a large quantity of 55 gallon drums were formerly stored. The drums have since been removed, replaced by an AST, which has also been removed. The unknown contents stored in these drums coupled with the fact that the facility experienced a fire would lead this condition to be considered an REC in our judgment.
- There were no facilities either close enough or in the right direction to be considered an REC to the Site in our judgment.

11. DATA GAPS

We did not encounter any datagaps in the preparation of this report.

12. CONCLUSIONS

We have performed a Phase I Environmental Site Assessment for the Site located at the northwest corner of Cedar and Jurupa Avenues in Bloomington, California. **Our review has found the following RECs, associated with the Site:**

- **The operation and removal of 8 USTs without closure sampling at 11134/38 Cedar Ave;**
- **The poor housekeeping at 11134 Cedar Ave and attendant stains on the ground surface;**
- **The prior fire at 11188 Cedar Ave with the previous quantity of 55-gallon drums and AST stored in this area.**

13. RECOMMENDATIONS

We recommend that a subsurface investigation be conducted in the areas cited above to assess whether there have been releases of hazardous substances to the environment from these RECs.

14. QUALIFICATIONS

Mark S. Cousineau, REA II

Mr. Mark S. Cousineau, principal with HMC, has a diverse professional background in environmental management, which includes working as a generator, regulator, consultant, and corporate advisor in hazardous waste and other environmental issues.

Mr. Cousineau's technical background is focused in the area of overseeing large-scale environmental investigations and regulatory compliance management related to site assessments, subsurface investigations, facility surveys, and site remediation. To projects such as these, Mr. Cousineau brings expertise in evaluating complex sites and developing solutions to

solve the technical, operational, regulatory, financial and timing issues. In addition, Mr. Cousineau routinely assists clients in developing environmental business plans for single assets and multi-site real estate portfolios and has designed and implemented several tenant audit programs involving the proactive management of environmental risk caused by on-site commercial and industrial tenant activities.

Mr. Cousineau has provided litigation support and has served, as a court-appointed expert on environmental issues, is a Registered Environmental Assessor in the State of California, holds a M.S. in Environmental Sciences from California State University Fullerton and a B.S. in Chemistry from University California San Diego.

As signatory to this report, I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of this part. I have the specific qualifications based on education, training, and experience to assess the property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

Mark Cousineau, REA II
Principal

15. REFERENCES

GeoLogics, 2013, Engineering Feasibility Study for Corrective Action, Crestmore Disposal Site, County of San Bernardino California, May 2013.

TABLES

TABLE 1.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	1	0	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		0	0	4	NR	NR	4

TABLE 1.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	1	NR	NR	1
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US HIST CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		4	0	NR	NR	NR	4
SWEEPS UST	0.250		6	0	NR	NR	NR	6
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
LIENS	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0

TABLE 1.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
DOT OPS	0.001		0	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		2	2	NR	NR	NR	4
HAZNET	0.001		0	NR	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0

TABLE 1.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	1	NR	NR	NR	1
EDR US Hist Cleaners	0.250		0	1	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	0.001		0	NR	NR	NR	NR	0
RGA LF	0.001		0	NR	NR	NR	NR	0

NOTES:

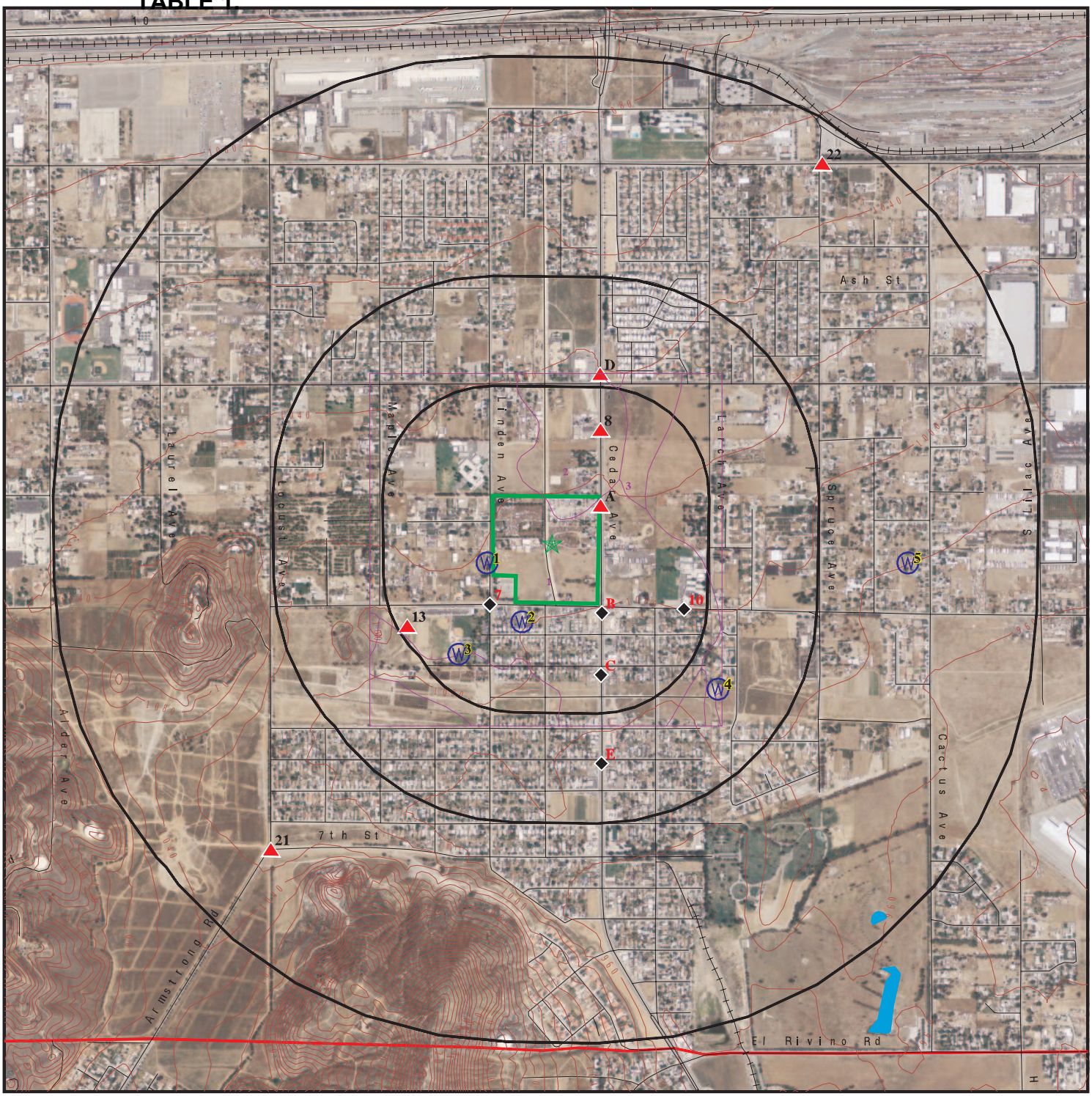
TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

TABLE 1

OVERVIEW MAP - 4111514.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

County Boundary

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

Areas of Concern

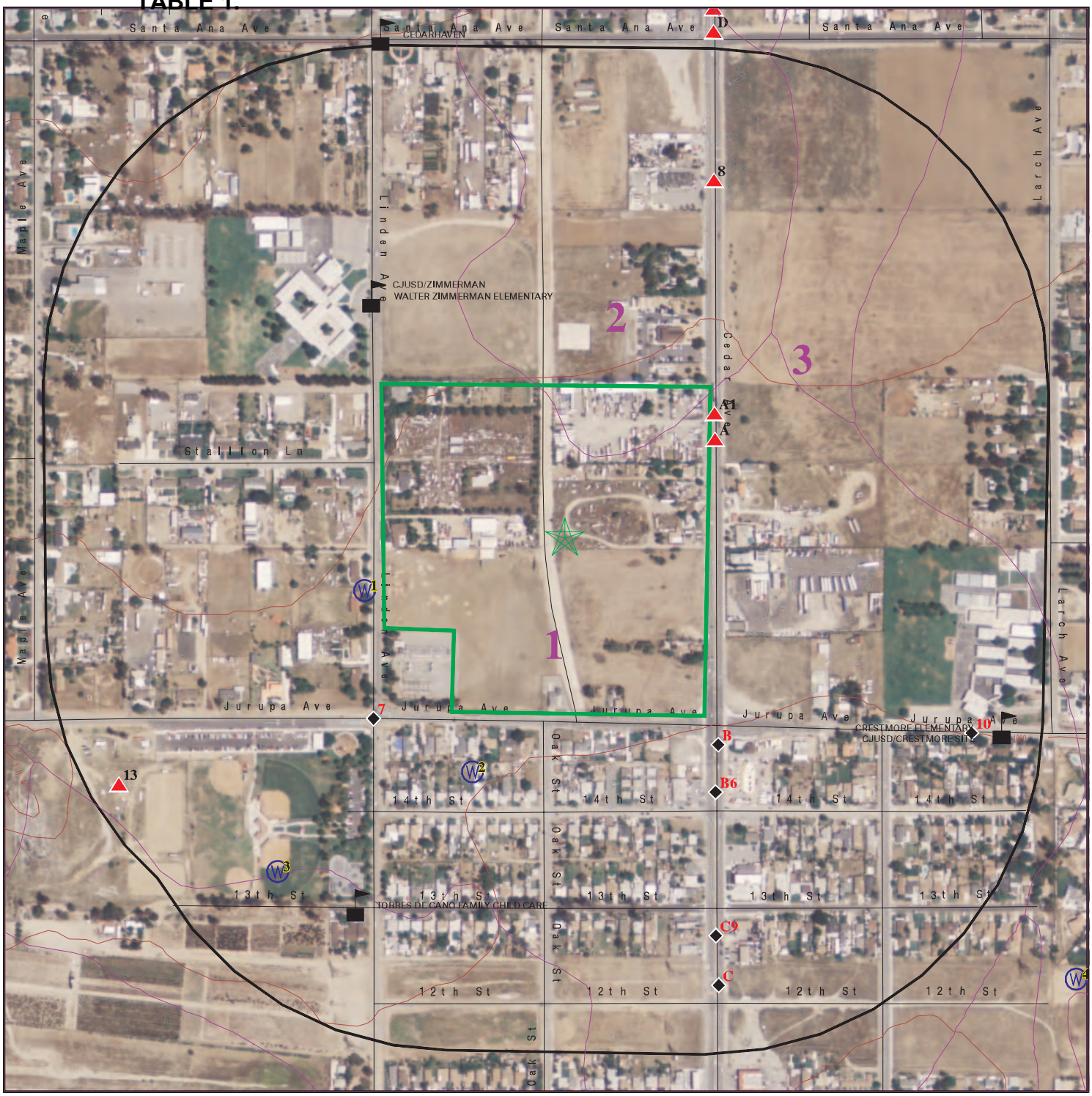
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Cedar Avenue	CLIENT:	Hazard Management Consulting
ADDRESS:	Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT:	Mark Cousineau
		INQUIRY #:	4111514.2s
LAT/LONG:	34.0506 / 117.3983	DATE:	October 21, 2014 7:20 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

TABLE 1.

DETAIL MAP - 4111514.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Cedar Avenue	CLIENT: Hazard Management Consulting
ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT: Mark Cousineau
LAT/LONG: 34.0506 / 117.3983	INQUIRY #: 4111514.2s
	DATE: October 21, 2014 7:21 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

FIGURES

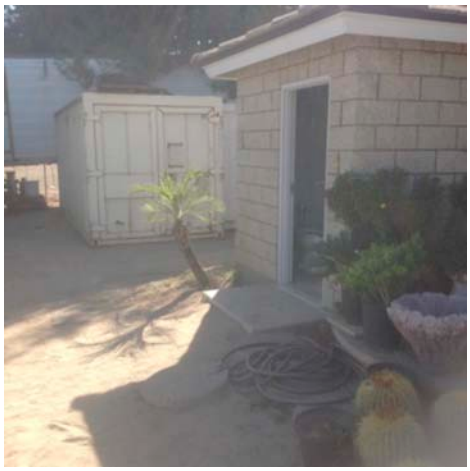
HMC

Figure 1: Site Location

HMC

Figure 2: Site & Site Vicinity

APPENDIX A


Rear Yard Bathroom Bldg

IMG_3328

Garage Storing Supplies

Open Field

Goats Grazing

Warehouse

Hives

Above Ground Water Tank

Rear Storage Garage

IMG_3348

Rear Yard

Drum Storage at Jaynes- Honey !

Misc Equipment

Looking Across Empty Field in SE Quadrant

Hay Storage

Vehicle Parking

Orchard Remnants in Rear Yard

Jaynes-Rear of Yard

Jaynes- Front of Yard

Looking Across Linden

Looking North from Jurupa

Looking Across Jurupa

Day Care Facility on Jurupa

Side Yard of Day Care Facility

Adjacent and Off Site Substation

Rear Yard of Day Care

Open Field-Deckel

Residence at Deckel

Residence at Deckel

County Road

Former Orchard

Residence at Deckel

Former Orchard

Extension of County Road

Storage at Walters Property on Cedar

Residence at Deckel

Auto Sales-11134/38

Residence at 11134 Cedar

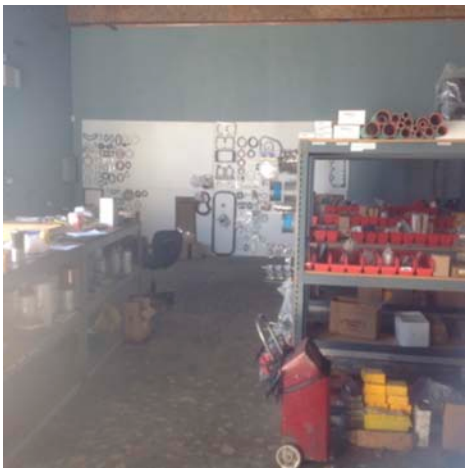
Looking at 11138 Cedar

Repair Activities

Truck Maintenance Area

Parts Washer

Parts Washer


Shop Area

Used Oil Storage

Chemical Storage

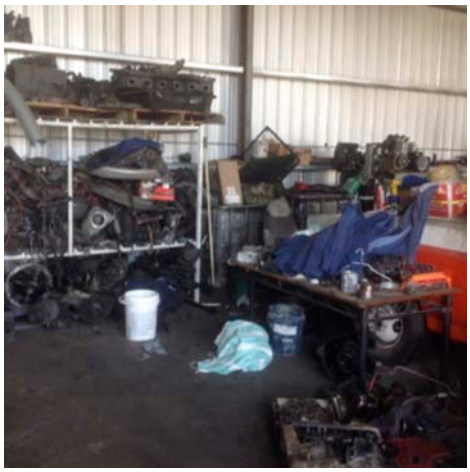
Staining on Concrete

Chemical Storage

Truck Maintenance

Chemical Storage

Oil Leakage from Containers


Parts Storage

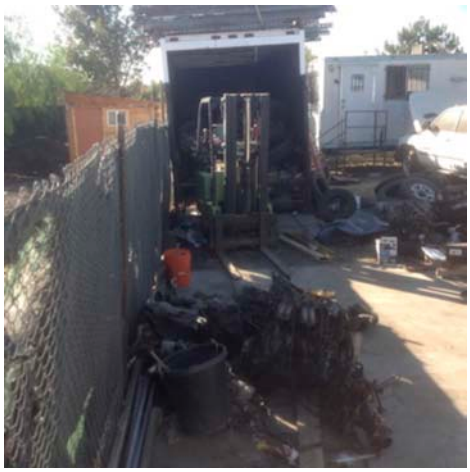
Work Area for Truck Maintenance

AST and Drum Storage

Side Yard Storage

Truck/Trailer Parking

AST and Chem Storage


Maintenance Area

Maintenance Area

Vacant Tenant Space

Vacant Tenant Space

Yard Area at 11134 Cedar

Auto Sales at 11138 Cedar

Residences Fronting Cedar

Storage at Walters Cedar Ave Parcel

Storage at Walters Cedar Ave Parcel

Equipment Storage

Equipment Storage

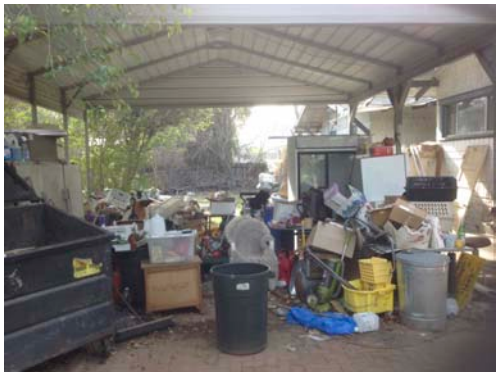
Equipment Storage

Equipment Storage

Walters Residence-Linden

Driveway Entrance to 11109 Linden

Junk Storage on Porch



Junk Storage in Rear Yard

Rear Storage Structure

Former Orchard Area

Misc Storage

Oil/Transmission Fluid Storage

Equipment and Vehicle Storage

Equipment Storage

Equipment Storage

Second Residence

Misc Storage

Misc Storage

Dirt Piles

APPENDIX B

Cedar Avenue
Cedar Avenue/ Jurupa Avenue
Bloomington, CA 92316

Inquiry Number: 4111514.4
October 22, 2014

EDR Historical Topographic Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

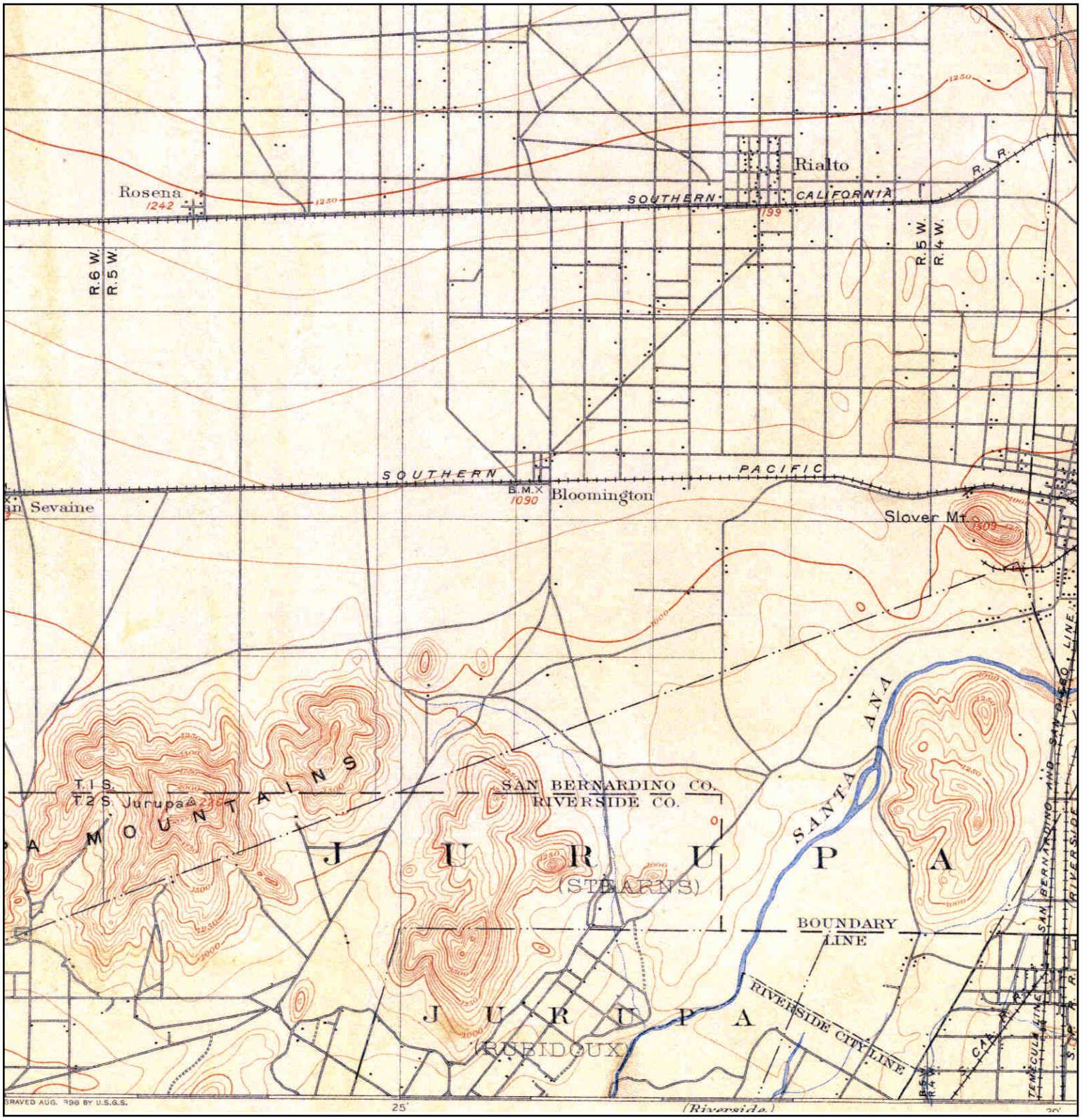
Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2014 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Historical Topographic Map

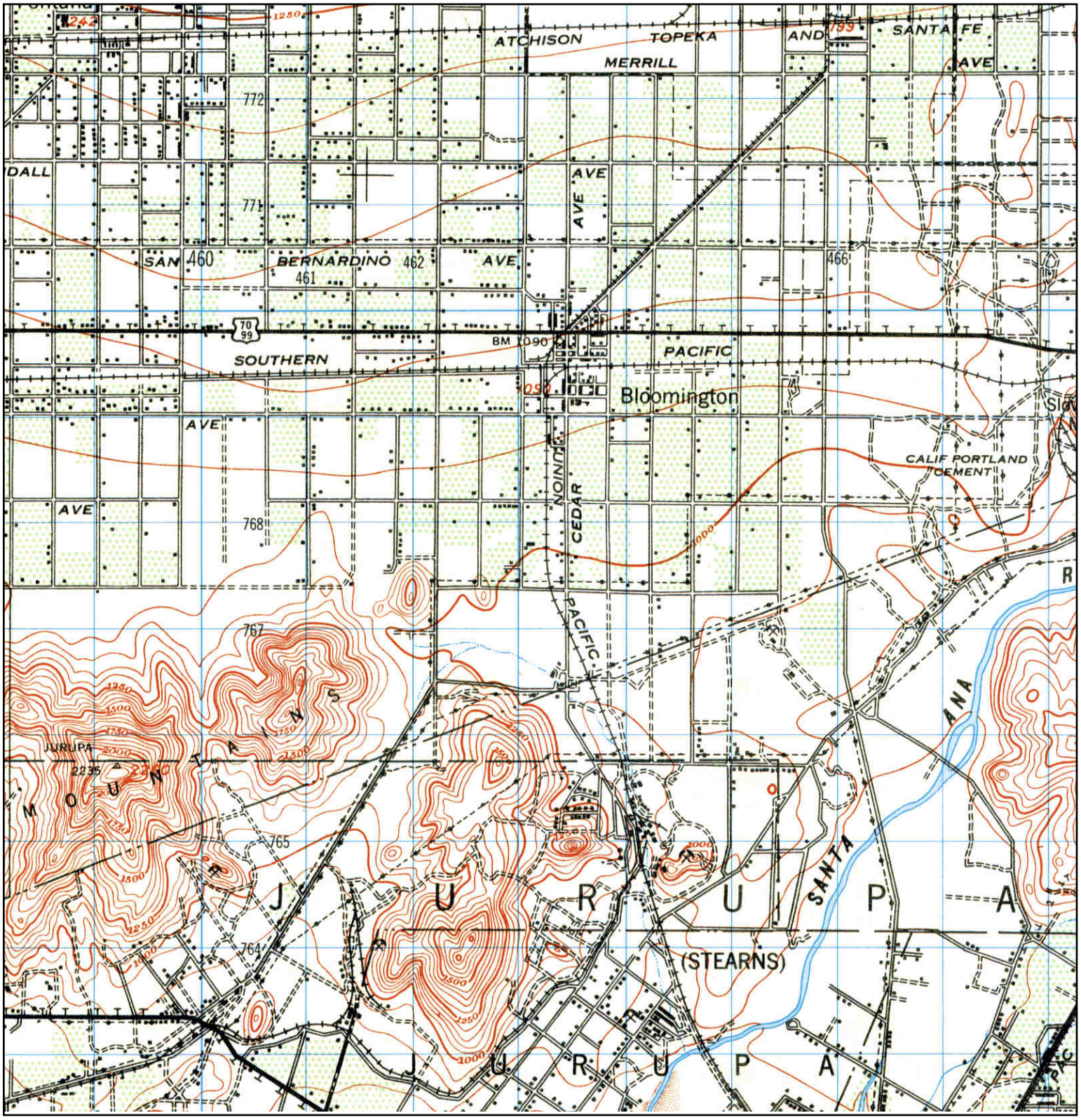


N	TARGET QUAD NAME: SAN BERNARDINO MAP YEAR: 1901 SERIES: 15 SCALE: 1:62500	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map

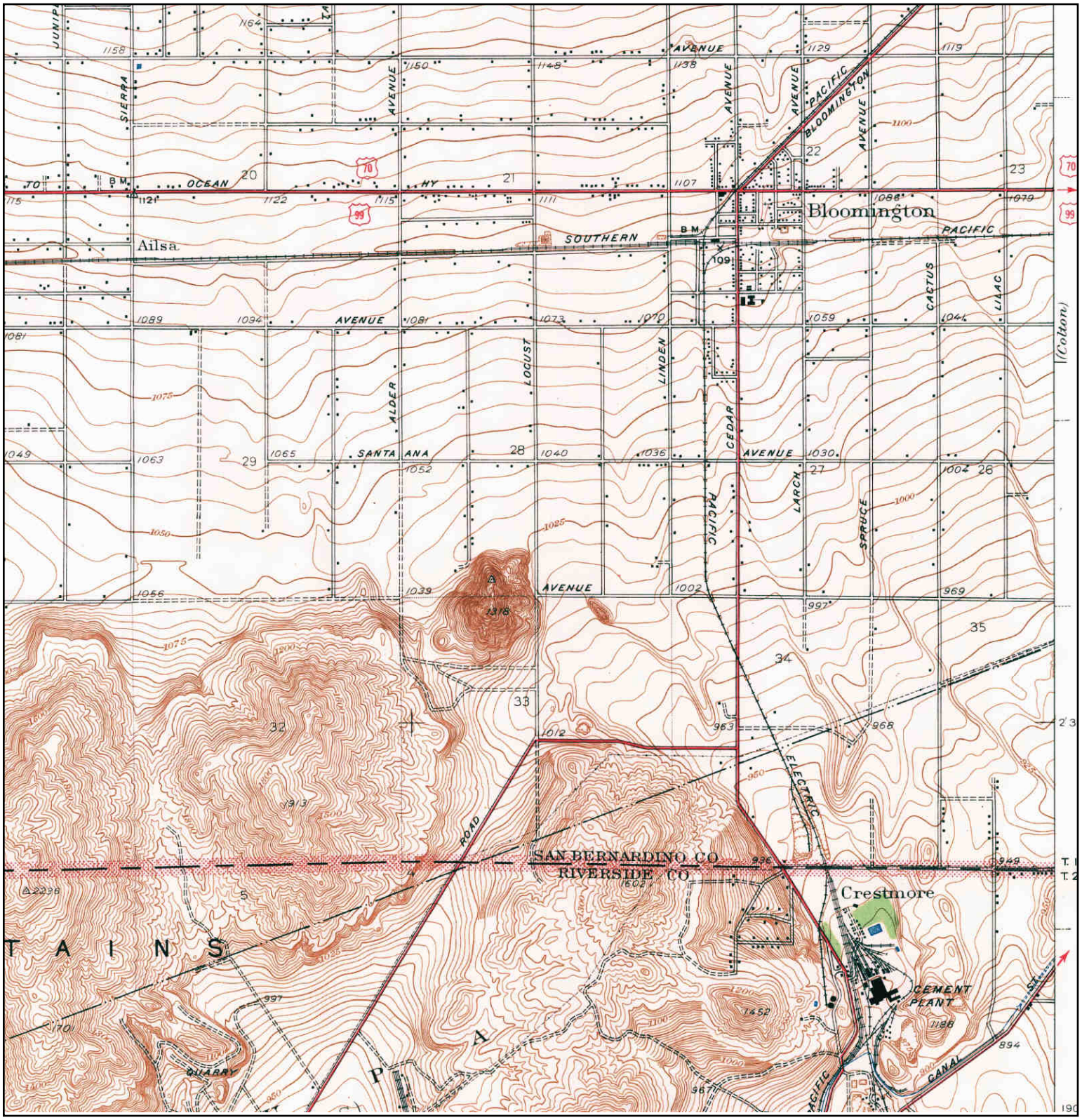
N ↑	TARGET QUAD NAME: SOUTHERN CA SHEET 1 MAP YEAR: 1901 SERIES: 60 SCALE: 1:250000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



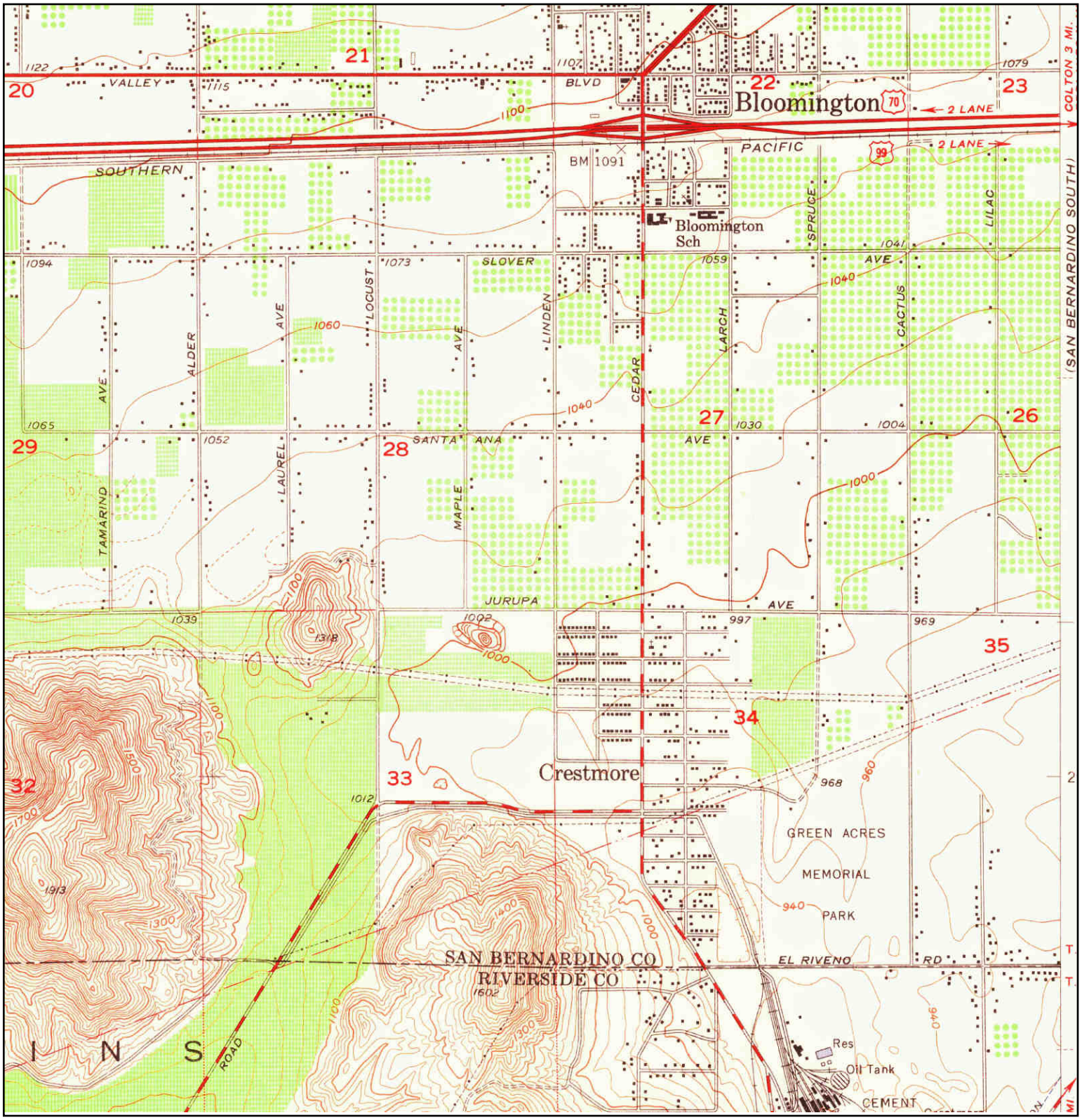
N	TARGET QUAD NAME: SAN BERNARDINO MAP YEAR: 1942 SERIES: 15 SCALE: 1:50000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



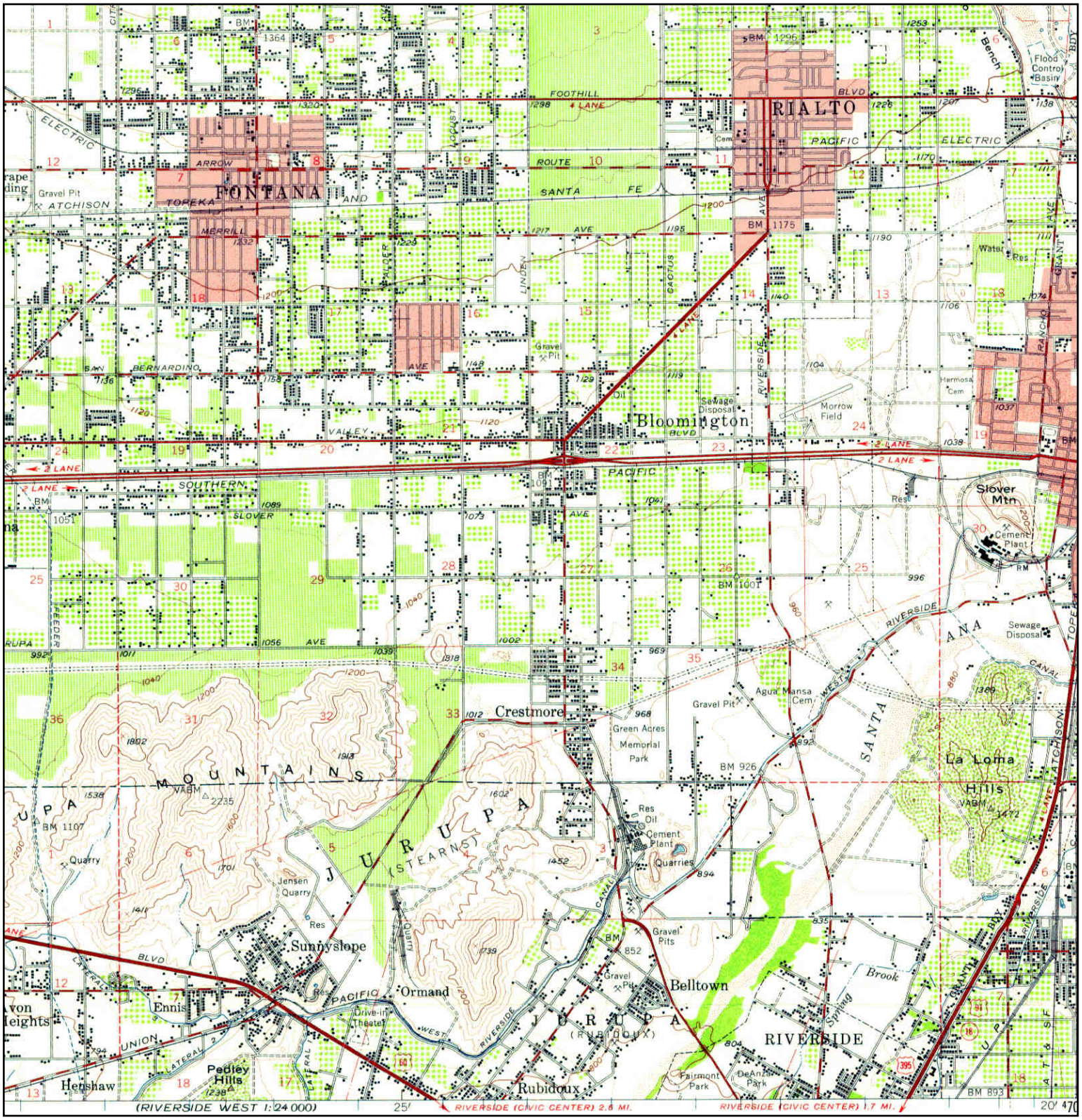
N	TARGET QUAD NAME: FONTANA MAP YEAR: 1943 SERIES: 7.5 SCALE: 1:31680	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



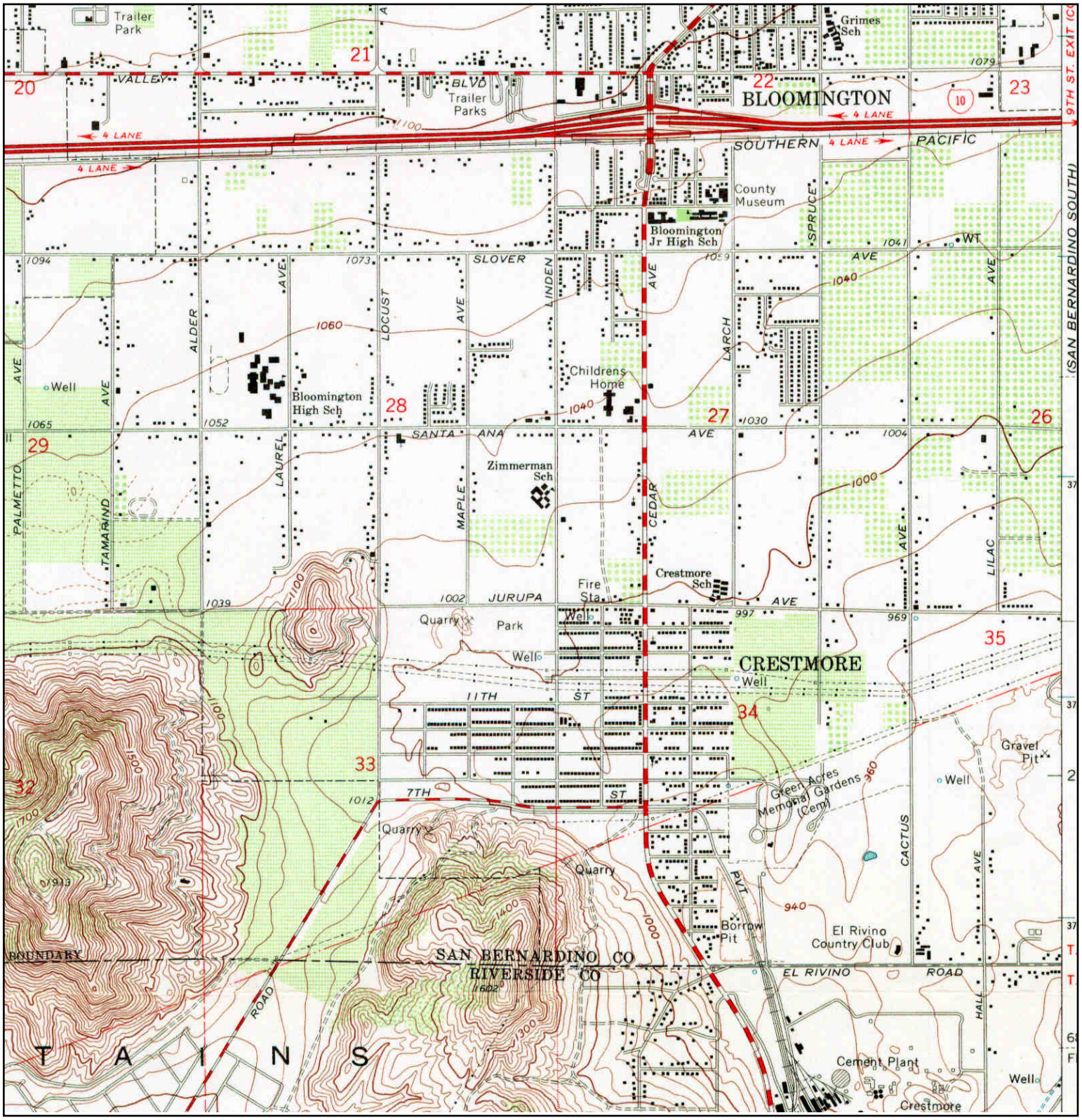
N	TARGET QUAD NAME: FONTANA MAP YEAR: 1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



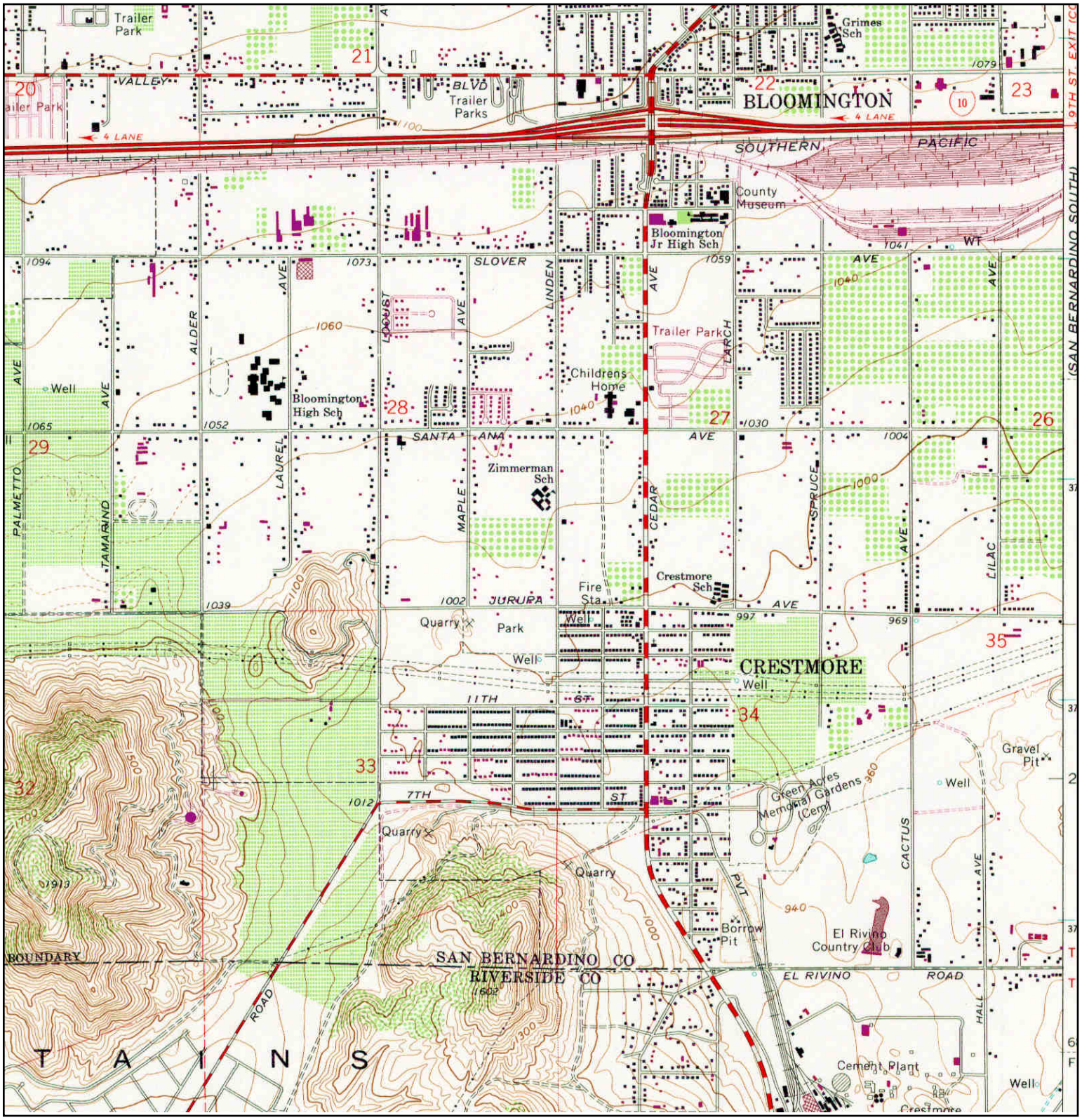
N	TARGET QUAD NAME: SAN BERNARDINO MAP YEAR: 1954 SERIES: 15 SCALE: 1:62500	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



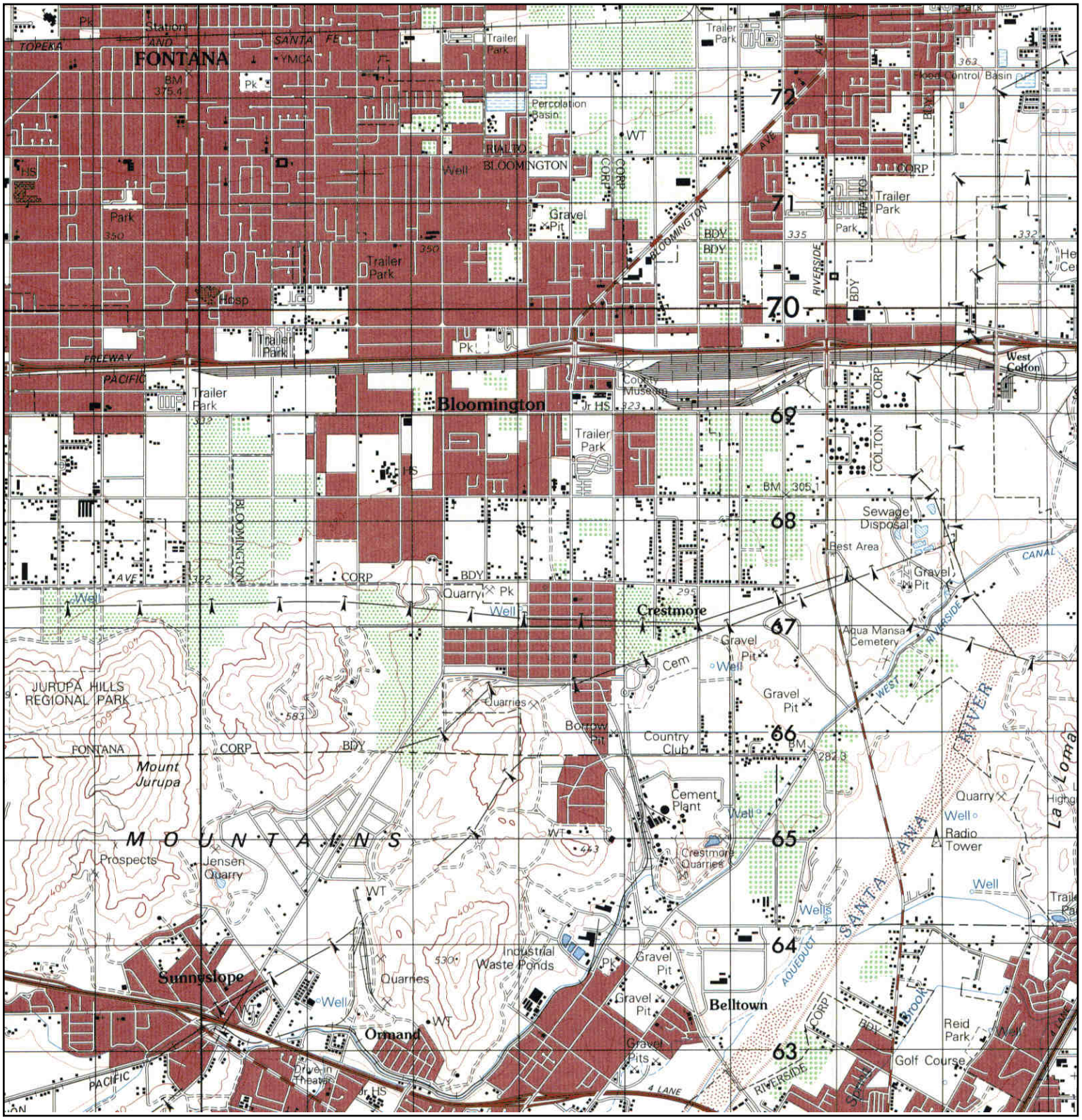
N	TARGET QUAD NAME: FONTANA MAP YEAR: 1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



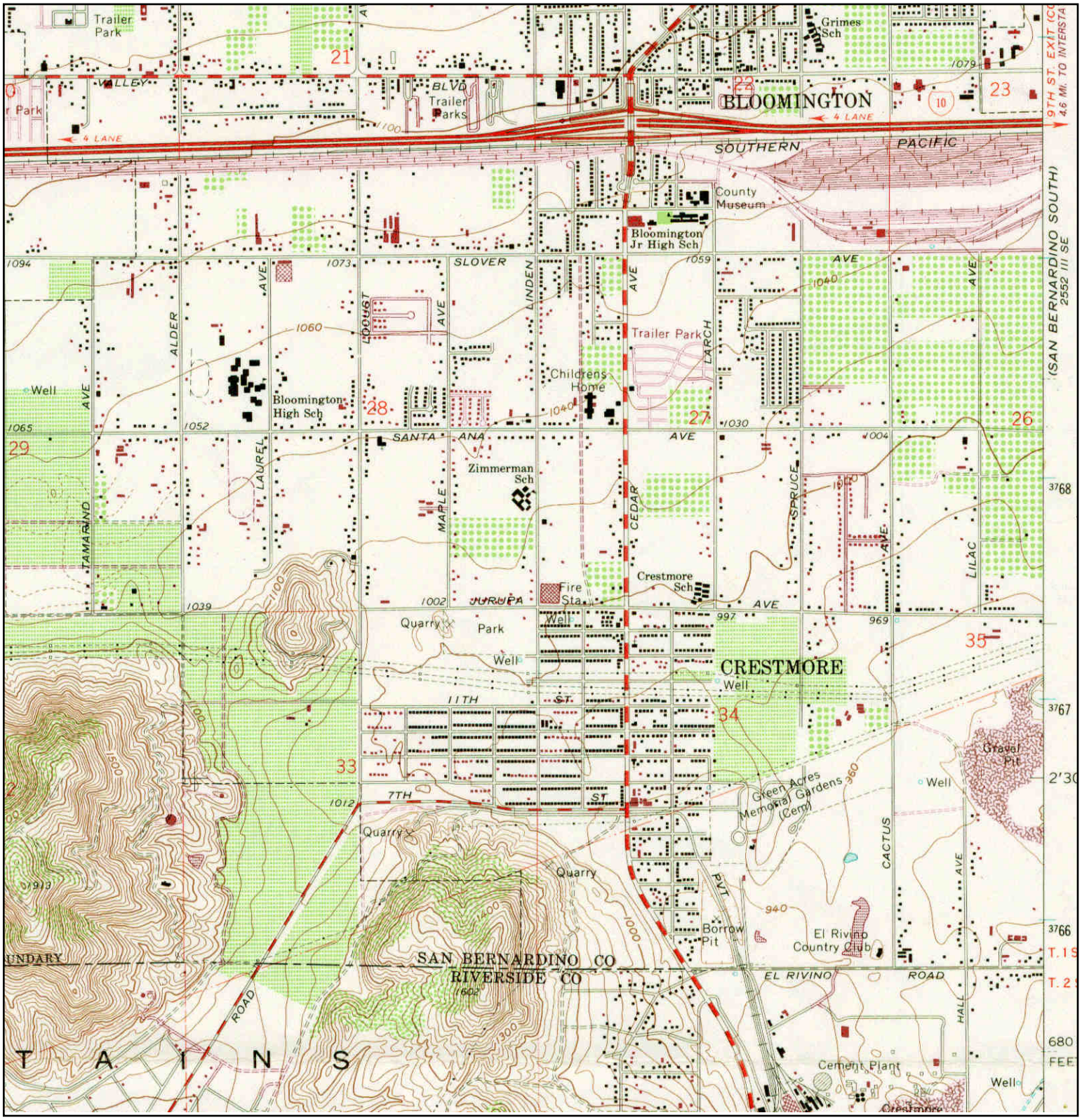
N	TARGET QUAD NAME: FONTANA MAP YEAR: 1973 PHOTOREVISED FROM :1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



N	TARGET QUAD NAME: SAN BERNARDINO MAP YEAR: 1975 SERIES: 15 SCALE: 1:50000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Historical Topographic Map



N	TARGET QUAD NAME: FONTANA MAP YEAR: 1980 PHOTOREVISED FROM :1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Cedar Avenue ADDRESS: Cedar Avenue/ Jurupa Avenue Bloomington, CA 92316 LAT/LONG: 34.0506 / -117.3983	CLIENT: Hazard Management Consulting CONTACT: Mark Cousineau INQUIRY#: 4111514.4 RESEARCH DATE: 10/22/2014

Cedar Avenue
Cedar Avenue/ Jurupa Avenue
Bloomington, CA 92316

Inquiry Number: 4111514.3
October 21, 2014

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/21/14

Site Name:	**Client Name:**
Cedar Avenue	Hazard Management
Cedar Avenue/ Jurupa Avenue	211 W. Avenida Cordoba
Bloomington, CA 92316	San Clemente, CA 92672
EDR Inquiry # 4111514.3	Contact: Mark Cousineau

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Hazard Management Consulting were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: Cedar Avenue
Address: Cedar Avenue/ Jurupa Avenue
City, State, Zip: Bloomington, CA 92316
Cross Street:
P.O. # NA
Project: NA
Certification # 155A-4E0E-94C7

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results
Certification # 155A-4E0E-94C7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Hazard Management Consulting (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2014 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Cedar Avenue
Cedar Avenue/ Jurupa Avenue
Bloomington, CA 92316

Inquiry Number: 4111514.2s
October 21, 2014

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	47
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-10
Physical Setting Source Map Findings	A-12
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2014 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

CEDAR AVENUE/ JURUPA AVENUE
BLOOMINGTON, CA 92316

COORDINATES

Latitude (North):	34.0506000 - 34˚ 3' 2.16''
Longitude (West):	117.3983000 - 117˚ 23' 53.88''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	463238.8
UTM Y (Meters):	3767643.2
Elevation:	1012 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	34117-A4 FONTANA, CA
Most Recent Revision:	1980

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120428, 20120519
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List

EXECUTIVE SUMMARY

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
LUCIS ..... Land Use Control Information System

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State and tribal leaking storage tank lists

SLIC ..... Statewide SLIC Cases
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ..... Active UST Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land
FEMA UST ..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing

EXECUTIVE SUMMARY

VCP ..... Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
WMUDS/SWAT ..... Waste Management Unit Database

Local Lists of Hazardous waste / Contaminated Sites

US CDL ..... Clandestine Drug Labs
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
Toxic Pits ..... Toxic Pits Cleanup Act Sites
CDL ..... Clandestine Drug Labs
US HIST CDL ..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ..... Facility Inventory Database

Local Land Records

LIENS 2 ..... CERCLA Lien Information
LIENS ..... Environmental Liens Listing
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

DOT OPS ..... Incident and Accident Data
DOD ..... Department of Defense Sites
FUDS ..... Formerly Used Defense Sites
CONSENT ..... Superfund (CERCLA) Consent Decrees
ROD ..... Records Of Decision
UMTRA ..... Uranium Mill Tailings Sites
US MINES ..... Mines Master Index File
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act

EXECUTIVE SUMMARY

FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
UIC	UIC Listing
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
2020 COR ACTION	2020 Corrective Action Program List
LEAD SMELTERS	Lead Smelter Sites
WDS	Waste Discharge System
PRP	Potentially Responsible Parties
HWT	Registered Hazardous Waste Transporter Database
COAL ASH DOE	Steam-Electric Plant Operation Data
MWMP	Medical Waste Management Program Listing
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
EPA WATCH LIST	EPA WATCH LIST
PROC	Certified Processors Database
Financial Assurance	Financial Assurance Information Listing
PCB TRANSFORMER	PCB Transformer Registration Database
US FIN ASSUR	Financial Assurance Information
US AIRS	Aerometric Information Retrieval System Facility Subsystem
HWP	EnviroStor Permitted Facilities Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST	Recovered Government Archive Leaking Underground Storage Tank
RGA LF	Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/05/2014 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HIGH SCHOOL - CEDAR AVENUE Status: No Further Action	***SANTA ANA AVENUE/CEDAR***	***NNE 1/4 - 1/2 (0.256 mi.)***	***D14***	***18***
VALLEY TRAILS ELEMENTARY SCHOO Status: Inactive - Withdrawn	***ARMSTRONG ROAD/LOCUST S***	***SW 1/2 - 1 (0.791 mi.)***	***21***	***34***
UNION PACIFIC RAILROAD CO Status: No Further Action	***19100 SLOVER AVE***	***NE 1/2 - 1 (0.913 mi.)***	***22***	***36***

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 08/18/2014 has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CRESTMORE DISPOSAL SITE (KESSL	SW CORNER OF JURUPA & L	WSW 1/8 - 1/4 (0.227 mi.)	13	18

EXECUTIVE SUMMARY

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 07/30/2014 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CEDAR AND SANTA ANA STATION	10898 CEDAR AVE	NNE 1/4 - 1/2 (0.262 mi.)	D15	22
CEDAR AND SANTA ANA STATION	***10898 CEDAR AVE***	***NNE 1/4 - 1/2 (0.262 mi.)***	***D16***	***23***
Status: Completed - Case Closed				

Lower Elevation	Address	Direction / Distance	Map ID	Page
GAS N GO	***11510 CEDAR AVE***	***SSE 1/4 - 1/2 (0.363 mi.)***	***E19***	***27***
Status: Completed - Case Closed				
ARCO AM/PM	11510 CEDAR AVENUE	SSE 1/4 - 1/2 (0.363 mi.)	E20	32

State and tribal registered storage tank lists

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 08/01/2009 has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCE-BLOOMINGTON SUBSTATN	***JURUPA & LINDEN***	***SW 0 - 1/8 (0.058 mi.)***	***7***	***14***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 06/16/2014 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
REPLANET LLC	10884 CEDAR AVE	NNE 1/4 - 1/2 (0.280 mi.)	D18	27

EXECUTIVE SUMMARY

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JIM'S PIPELINE SER. INC.	***11118 CEDAR***	***NE 0 - 1/8 (0.004 mi.)***	***A1***	***8***
JAMES P. POUND	***11138 CEDAR***	***ENE 0 - 1/8 (0.004 mi.)***	***A3***	***10***

Lower Elevation	Address	Direction / Distance	Map ID	Page
BLOOMINGTON	***11311 CEDAR AVE***	***SE 0 - 1/8 (0.023 mi.)***	***B4***	***11***
ONE STOP JUNIOR MARKET	***11340 CEDAR AVE***	***SSE 0 - 1/8 (0.057 mi.)***	***B6***	***13***

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 6 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JIM'S PIPELINE SER. INC.	***11118 CEDAR***	***NE 0 - 1/8 (0.004 mi.)***	***A1***	***8***
POUND, JAMES	***11134 CEDAR***	***ENE 0 - 1/8 (0.004 mi.)***	***A2***	***9***
JAMES P. POUND	***11138 CEDAR***	***ENE 0 - 1/8 (0.004 mi.)***	***A3***	***10***

Lower Elevation	Address	Direction / Distance	Map ID	Page
BLOOMINGTON	***11311 CEDAR AVE***	***SE 0 - 1/8 (0.023 mi.)***	***B4***	***11***
S & E PIPE	11311 S CEDAR AVE	SE 0 - 1/8 (0.023 mi.)	B5	12
ONE STOP JUNIOR MARKET	***11340 CEDAR AVE***	***SSE 0 - 1/8 (0.057 mi.)***	***B6***	***13***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/10/2014 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GOLDEN WEST OIL CO INC	***18879 JURUPA AVE***	***ESE 1/8 - 1/4 (0.198 mi.)***	***10***	***15***

EXECUTIVE SUMMARY

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CEDAR AND SANTA ANA STATI	10898	NNE 1/4 - 1/2 (0.262 mi.)	D17	26

San Bern. Co. Permit: San Bernardino County Fire Department Hazardous Materials Division.

A review of the San Bern. Co. Permit list, as provided by EDR, and dated 08/06/2014 has revealed that there are 4 San Bern. Co. Permit sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
POUND, JAMES	***11134 CEDAR***	***ENE 0 - 1/8 (0.004 mi.)***	***A2***	***9***
VERIZON WIRELESS - LARCH	10974 CEDAR AVE	NNE 1/8 - 1/4 (0.153 mi.)	8	14

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCE-BLOOMINGTON SUBSTATN	***JURUPA & LINDEN***	***SW 0 - 1/8 (0.058 mi.)***	***7***	***14***
PRIORTY AUTOMOTIVE	11441 CEDAR AVE	SSE 1/8 - 1/4 (0.199 mi.)	C11	16

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there is 1 EDR US Hist Auto Stat site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	11441 CEDAR AVE	SSE 1/8 - 1/4 (0.199 mi.)	C12	17

EXECUTIVE SUMMARY

EDR US Hist Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there is 1 EDR US Hist Cleaners site within approximately 0.25 miles of the target property.

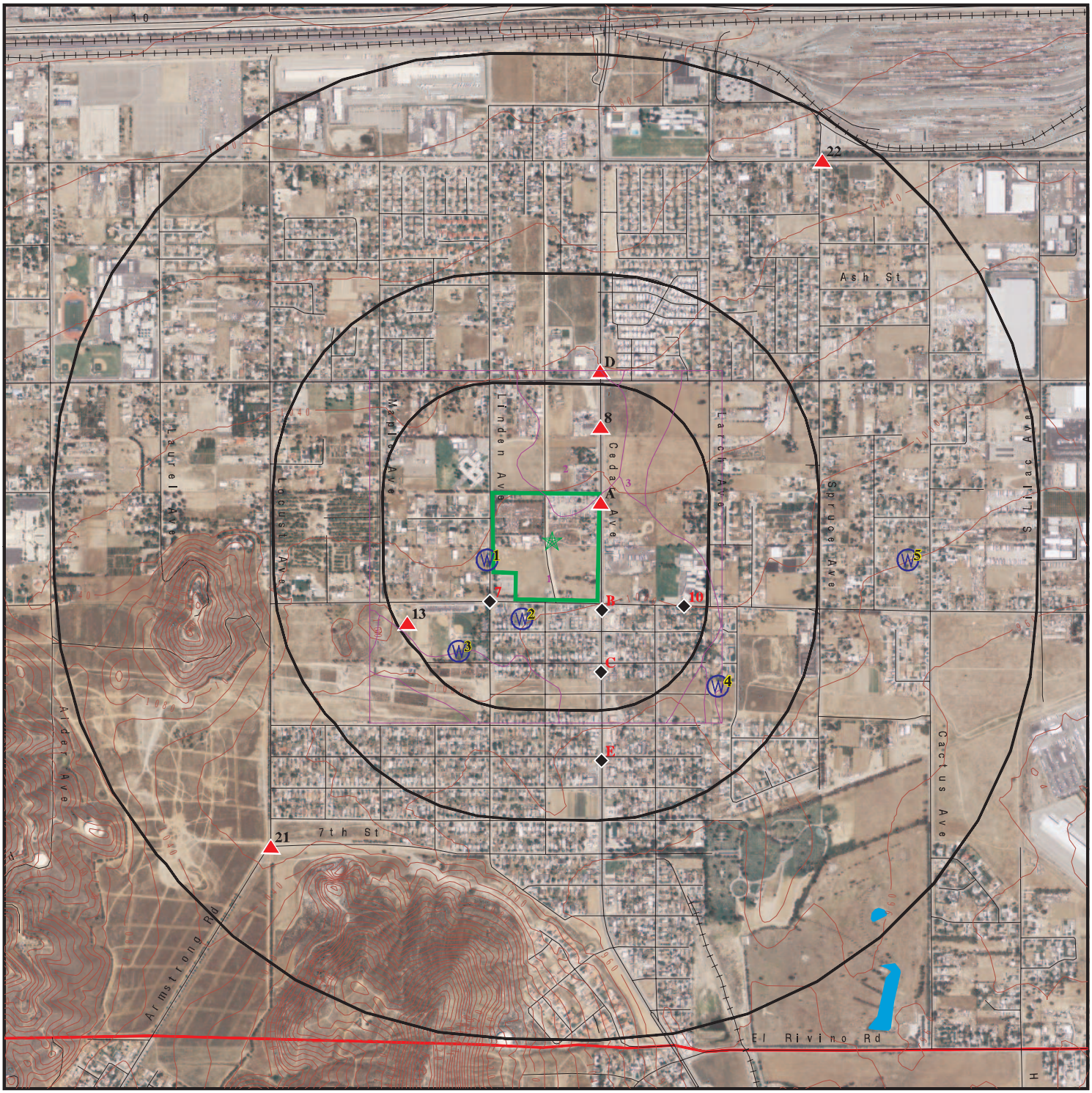
Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	11416 CEDAR AVE	SSE 1/8 - 1/4 (0.162 mi.)	C9	15

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
FEDERER 12KV	NPDES
SOUTH SIDE OF SLOVER AVENUE EAST O	NPDES
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
	CDL
CIMA ROAD MINE WASTE SITE	CERCLIS
CALTRANS MAGANA-OTREGA STATION	SWF/LF
LANDFILLCRESTMORE-CLOSED	WMUDS/SWAT, WDS
FEDERAL AVIATION	HAZNET
SKANSKA	HAZNET
ROADWAY EXPRESS	HAZNET
16742 14TH ST	US CDL
CRESTMORE DISPOSAL SITE (KESSLER)	RGA LF

OVERVIEW MAP - 4111514.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

County Boundary

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

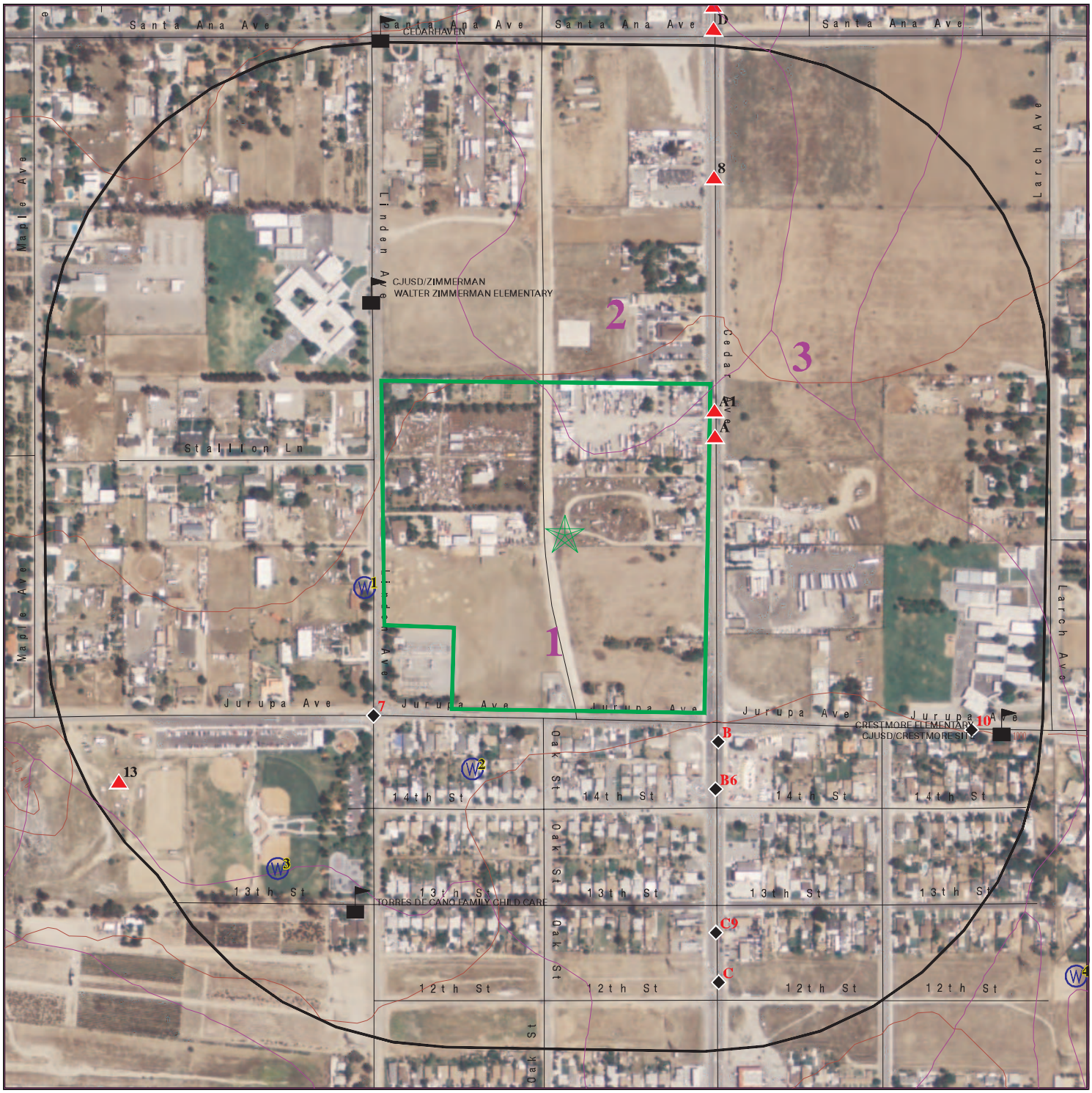
Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Cedar Avenue	CLIENT:	Hazard Management Consulting
ADDRESS:	Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT:	Mark Cousineau
		INQUIRY #:	4111514.2s
LAT/LONG:	34.0506 / 117.3983	DATE:	October 21, 2014 7:20 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

DETAIL MAP - 4111514.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Cedar Avenue	CLIENT:	Hazard Management Consulting
ADDRESS:	Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT:	Mark Cousineau
		INQUIRY #:	4111514.2s
LAT/LONG:	34.0506 / 117.3983	DATE:	October 21, 2014 7:21 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	1	0	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		0	0	4	NR	NR	4

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	1	NR	NR	1
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US HIST CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		4	0	NR	NR	NR	4
SWEEPS UST	0.250		6	0	NR	NR	NR	6
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
LIENS	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
DOT OPS	0.001		0	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		2	2	NR	NR	NR	4
HAZNET	0.001		0	NR	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	1	NR	NR	NR	1
EDR US Hist Cleaners	0.250		0	1	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	0.001		0	NR	NR	NR	NR	0
RGA LF	0.001		0	NR	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 NE < 1/8 0.004 mi. 19 ft. | **JIM'S PIPELINE SER. INC.**
11118 CEDAR
BLOOMINGTON, CA 92316

HIST UST **U001574578**
SWEEPS UST **N/A**

Site 1 of 3 in cluster A

Relative: Higher

Actual: 1017 ft.

HIST UST:

Region:	STATE
Facility ID:	00000057951
Facility Type:	Other
Other Type:	CONSTRUCTION
Total Tanks:	0002
Contact Name:	ROGER POUND
Telephone:	7148200769
Owner Name:	JIM'S PIPELINE SERVICE INC.
Owner Address:	5826 SYCAMORE
Owner City,St,Zip:	RIALTO, CA 92376
Tank Num:	001
Container Num:	1
Year Installed:	1979
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	1/4 inches
Leak Detection:	Visual, Stock Inventor
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	None

SWEEPS UST:

Status:	Active
Comp Number:	57951
Number:	9
Board Of Equalization:	44-021263
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	1
SWRCB Tank Id:	36-000-057951-000001
Tank Status:	A
Capacity:	2000
Active Date:	08-25-88
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	2
Status:	Active
Comp Number:	57951
Number:	9
Board Of Equalization:	44-021263
Referral Date:	03-19-92

JIM'S PIPELINE SER. INC. (Continued) **U001574578**

Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	2
SWRCB Tank Id:	36-000-057951-000002
Tank Status:	A
Capacity:	1
Active Date:	08-25-88
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

A2
ENE
< 1/8
0.004 mi.
21 ft.

POUND, JAMES **SWEEPS UST** **S106930847**
11134 CEDAR **San Bern. Co. Permit** **N/A**
BLOOMINGTON, CA 92316

Site 2 of 3 in cluster A

Relative:
Higher

Actual:
1016 ft.

SWEEPS UST:

Status:	Active
Comp Number:	10520
Number:	2
Board Of Equalization:	44-020274
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	09-19-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	36-000-010520-000001
Tank Status:	A
Capacity:	1
Active Date:	09-19-88
Tank Use:	UNKNOWN
STG:	P
Content:	UNKNOWN
Number Of Tanks:	1

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0012985
Owner:	OSCAR, ISCHIU
Permit Number:	PT0022770
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	01/31/2015

Region:	SAN BERNARDINO
Facility ID:	FA0012985
Owner:	OSCAR, ISCHIU
Permit Number:	PT0022771
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	01/31/2015

A3 ENE < 1/8 0.004 mi. 22 ft. | **JAMES P. POUND**
11138 CEDAR
BLOOMINGTON, CA 92316

Site 3 of 3 in cluster A

HIST UST **U001574577**
SWEEPS UST **N/A**

Relative: Higher

Actual: 1016 ft.

HIST UST:

Region:	STATE
Facility ID:	00000050070
Facility Type:	Other
Other Type:	Not reported
Total Tanks:	0003
Contact Name:	Not reported
Telephone:	7148200769
Owner Name:	JAMES P. POUND
Owner Address:	5826 SYCAMORE
Owner City,St,Zip:	RIALTO, CA 92376
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00015000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None
Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00015000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	None

SWEEPS UST:

Status:	Active
Comp Number:	50070
Number:	9
Board Of Equalization:	44-021144
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	1
SWRCB Tank Id:	36-000-050070-000001
Tank Status:	A
Capacity:	10000
Active Date:	08-25-88
Tank Use:	M.V. FUEL

JAMES P. POUND (Continued) **U001574577**

STG:	P
Content:	LEADED
Number Of Tanks:	3

Status:	Active
Comp Number:	50070
Number:	9
Board Of Equalization:	44-021144
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	2
SWRCB Tank Id:	36-000-050070-000002
Tank Status:	A
Capacity:	15000
Active Date:	08-25-88
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	50070
Number:	9
Board Of Equalization:	44-021144
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	3
SWRCB Tank Id:	36-000-050070-000003
Tank Status:	A
Capacity:	15000
Active Date:	08-25-88
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

B4 **BLOOMINGTON** **HIST UST** **U001574563**
SE **11311 CEDAR AVE** **SWEEPS UST** **N/A**
< 1/8 **BLOOMINGTON, CA 92316**
0.023 mi.
124 ft. **Site 1 of 3 in cluster B**

Relative:
Lower

Actual:
999 ft.

HIST UST:

Region:	STATE
Facility ID:	00000001140
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0001
Contact Name:	FRANK RUVOLO
Telephone:	714TR72625
Owner Name:	S E PIPE LINE CONSTRUCTION CO.
Owner Address:	11832 S. BLOOMFIELD AV.
Owner City,St,Zip:	SANTA FE SPRINGS, CA 90670

Tank Num:	001
Container Num:	1

BLOOMINGTON (Continued) **U001574563**

Year Installed: 1959
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: 3/8 inches
Leak Detection: Pressure Test

SWEEPS UST:
Status: Active
Comp Number: 1140
Number: 9
Board Of Equalization: 44-019789
Referral Date: 07-28-92
Action Date: 07-28-92
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 36-000-001140-000001
Tank Status: A
Capacity: 10000
Active Date: 08-23-88
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: 1

B5 **S & E PIPE** **SWEEPS UST** **S106931680**
SE **11311 S CEDAR AVE** **N/A**
< 1/8 **BLOOMINGTON, CA 92316**
0.023 mi.
124 ft. **Site 2 of 3 in cluster B**

Relative:
Lower

Actual:
999 ft.

SWEEPS UST:
Status: Not reported
Comp Number: 7815
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-007815-000001
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: 1

B6 SSE < 1/8 0.057 mi. 301 ft. | **ONE STOP JUNIOR MARKET**
11340 CEDAR AVE
BLOOMINGTON, CA 92316 | **HIST UST** | **U001574586**
SWEEPS UST | **N/A**

Site 3 of 3 in cluster B

Relative: Lower

Actual: 996 ft.

HIST UST:

Region:	STATE
Facility ID:	00000049373
Facility Type:	Gas Station
Other Type:	MINI-MARKET
Total Tanks:	0002
Contact Name:	AL LEWIS
Telephone:	7148776020
Owner Name:	ONE STOP JUNIOR MARKET
Owner Address:	11340 CEDAR AVE.
Owner City,St,Zip:	BLOOMINGTON, CA 91745
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Pressure Test
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Pressure Test

SWEEPS UST:

Status:	Active
Comp Number:	49373
Number:	9
Board Of Equalization:	44-021124
Referral Date:	03-19-92
Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	1
SWRCB Tank Id:	36-000-049373-000001
Tank Status:	A
Capacity:	7500
Active Date:	08-23-88
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	2
Status:	Active
Comp Number:	49373
Number:	9
Board Of Equalization:	44-021124
Referral Date:	03-19-92

ONE STOP JUNIOR MARKET (Continued) **U001574586**

Action Date:	03-19-92
Created Date:	02-29-88
Owner Tank Id:	2
SWRCB Tank Id:	36-000-049373-000002
Tank Status:	A
Capacity:	7500
Active Date:	08-23-88
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	Not reported

7
SW
< 1/8
0.058 mi.
306 ft.

SCE-BLOOMINGTON SUBSTATN **AST** **S105047525**
JURUPA & LINDEN **San Bern. Co. Permit** **N/A**
BLOOMINGTON, CA 92316

Relative:
Lower

Actual:
1007 ft.

AST:

Owner:	SOUTHERN CALIFORNIA EDISON CO.
Total Gallons:	15,912
Certified Unified Program Agencies:	San Bernardino

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0000219
Owner:	SOUTHERN CALIFORNIA EDISON
Permit Number:	PT0000345
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status:	ACTIVE
Expiration Date:	02/28/2015

Region:	SAN BERNARDINO
Facility ID:	FA0000219
Owner:	SOUTHERN CALIFORNIA EDISON
Permit Number:	PT0016153
Permit Category:	APSA CONDITIONALLY EXEMPT
Facility Status:	ACTIVE
Expiration Date:	02/28/2015

8
NNE
1/8-1/4
0.153 mi.
806 ft.

VERIZON WIRELESS - LARCH **San Bern. Co. Permit** **S106229945**
10974 CEDAR AVE **N/A**
BLOOMINGTON, CA 92316

Relative:
Higher

Actual:
1026 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0008067
Owner:	VERIZON WIRELESS
Permit Number:	PT0014167
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status:	ACTIVE
Expiration Date:	02/28/2015

C9
SSE
1/8-1/4
0.162 mi.
857 ft.

11416 CEDAR AVE
BLOOMINGTON, CA 92316

Site 1 of 3 in cluster C

EDR US Hist Cleaners **1014977939**
N/A

Relative:
Lower

Actual:
989 ft.

EDR Historical Cleaners:

Name:	ECONO WASH LAUNDROMAT
Year:	2001
Address:	11416 CEDAR AVE

10
ESE
1/8-1/4
0.198 mi.
1044 ft.

GOLDEN WEST OIL CO INC
18879 JURUPA AVE
BLOOMINGTON, CA

RCRA NonGen / NLR **1000186979**
FINDS **CAT080014046**

Relative:
Lower

Actual:
1000 ft.

RCRA NonGen / NLR:

Date form received by agency:	12/11/1980
Facility name:	GOLDEN WEST OIL CO INC
Facility address:	18879 JURUPA AVE BLOOMINGTON, CA 92316
EPA ID:	CAT080014046
Mailing address:	PO BOX 315 BLOOMINGTON, CA 92316
Contact:	ENVIRONMENTAL MANAGER
Contact address:	18879 JURUPA AVE BLOOMINGTON, CA 92316
Contact country:	US
Contact telephone:	(714) 877-3383
Contact email:	Not reported
EPA Region:	09
Land type:	Other land type
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	GOLDEN WEST OIL CO INC
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No

GOLDEN WEST OIL CO INC (Continued) **1000186979**

Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 05/19/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110002946475

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

C11 **PRIORTY AUTOMOTIVE** **San Bern. Co. Permit** **S107863393**
SSE **11441 CEDAR AVE** **N/A**
1/8-1/4 **BLOOMINGTON, CA 92316**
0.199 mi.
1052 ft. **Site 2 of 3 in cluster C**

Relative:
Lower

Actual:
987 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0010302
Owner: GUTIERREZ, BARTOLO
Permit Number: PT0017504
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 04/30/2008

PRIORTY AUTOMOTIVE (Continued) **S107863393**

Region: SAN BERNARDINO
Facility ID: FA0010302
Owner: GUTIERREZ, BARTOLO
Permit Number: PT0017505
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: ACTIVE
Expiration Date: 04/30/2008

Region: SAN BERNARDINO
Facility ID: FA0007425
Owner: ALFRED FLORES JR.
Permit Number: PT0016515
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 11/30/2006

Region: SAN BERNARDINO
Facility ID: FA0007425
Owner: ALFRED FLORES JR.
Permit Number: PT0009874
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 11/30/2006

C12 **EDR US Hist Auto Stat** **1015166887**
SSE **11441 CEDAR AVE** **N/A**
1/8-1/4 **BLOOMINGTON, CA 92316**
0.199 mi.
1052 ft. **Site 3 of 3 in cluster C**

Relative:
Lower

Actual:
987 ft.

EDR Historical Auto Stations:

Name: PRIORY AUTOMOTIVE
Year: 2007
Address: 11441 CEDAR AVE

Name: PRIORITY AUTOMOTIVE
Year: 2010
Address: 11441 CEDAR AVE

Name: PRIORITY AUTOMOTIVE
Year: 2011
Address: 11441 CEDAR AVE

Name: PRIORITY AUTOMOTIVE
Year: 2012
Address: 11441 CEDAR AVE

13 WSW 1/8-1/4 0.227 mi. 1201 ft. | **CRESTMORE DISPOSAL SITE (KESSLER)**
SW CORNER OF JURUPA & LINDEN AVE
BLOOMINGTON, CA | **SWF/LF** | **S105003808**
N/A

Relative: Higher

Actual: 1013 ft.

SWF/LF (SWIS):

Region:	STATE
Facility ID:	36-CR-0016
Lat/Long:	34.0479300 / -117.40403
Owner Name:	County of San Bernardino S.W. Mgt Div
Owner Telephone:	8007228004
Owner Address:	Not reported
Owner Address2:	222 West Hospitality Lane, 2nd Floor
Owner City,St,Zip:	San Bernardino, CA 92415
Operational Status:	Closed
Operator:	Not reported
Operator Phone:	Not reported
Operator Address:	Not reported
Operator Address2:	Not reported
Operator City,St,Zip:	Not reported
Permit Date:	Not reported
Permit Status:	Not reported
Permitted Acreage:	0
Activity:	Solid Waste Disposal Site
Regulation Status:	Pre-regulations
Landuse Name:	Residential,Park,Agricultural
GIS Source:	GPS
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Annual
Accepted Waste:	Not reported
Closure Date:	12/31/1966
Closure Type:	Estimated
Disposal Acreage:	0
SWIS Num:	36-CR-0016
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	0
Actual Throughput with Units:	Not reported
Permitted Capacity with Units:	0
Remaining Capacity:	0
Remaining Capacity with Units:	Not reported

D14 NNE 1/4-1/2 0.256 mi. 1353 ft. | **HIGH SCHOOL - CEDAR AVENUE**
SANTA ANA AVENUE/CEDAR AVENUE
BLOOMINGTON, CA 92316 | **SCH**
ENVIROSTOR | **S107736446**
N/A

Site 1 of 5 in cluster D

Relative: Higher

Actual: 1037 ft.

SCH:

Facility ID:	36010018
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC

HIGH SCHOOL - CEDAR AVENUE (Continued) **S107736446**

Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Yolanda Garza
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404228
Assembly:	47
Senate:	32
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	05/30/2002
Restricted Use:	NO
Funding:	School District
Latitude:	34.05416
Longitude:	-117.3963
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Vanadium and compounds, Vanadium and compounds, Barium and compounds, Zinc, DDE, Cobalt, Copper and compounds, DDT
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	COLTON JOINT UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	COLTON JOINT US-PROPOSED HIGH SCHOOL
Alias Type:	Alternate Name
Alias Name:	HIGH SCHOOL-CEDAR AVENUE
Alias Type:	Alternate Name
Alias Name:	404228
Alias Type:	Project Code (Site Code)
Alias Name:	36010018
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	10/24/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	05/24/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Public Participation
Completed Date:	05/23/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/06/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

HIGH SCHOOL - CEDAR AVENUE (Continued) **S107736446**

Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/30/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 10/15/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 04/24/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 36010018
Status: No Further Action
Status Date: 05/30/2002
Site Code: 404228
Site Type: School Investigation
Site Type Detailed: School
Acres: 40
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Yolanda Garza
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 47
Senate: 32
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 34.05416
Longitude: -117.3963
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Vanadium and compounds Barium and compounds Zinc DDE Cobalt Copper and compounds DDT
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL
Alias Name: COLTON JOINT UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: COLTON JOINT US-PROPOSED HIGH SCHOOL

HIGH SCHOOL - CEDAR AVENUE (Continued) **S107736446**

Alias Type: Alternate Name
Alias Name: HIGH SCHOOL-CEDAR AVENUE
Alias Type: Alternate Name
Alias Name: 404228
Alias Type: Project Code (Site Code)
Alias Name: 36010018
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 10/24/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 05/24/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Public Participation
Completed Date: 05/23/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/06/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/30/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 10/15/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 04/24/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

HIGH SCHOOL - CEDAR AVENUE (Continued) **S107736446**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

D15 **CEDAR AND SANTA ANA STATION** **LUST** **S102044149**
NNE **10898 CEDAR AVE** **N/A**
1/4-1/2 **BLOOMINGTON, CA 92316**
0.262 mi.
1385 ft. **Site 2 of 5 in cluster D**

Relative:
Higher

Actual:
1037 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083603131T
Local Case Num:	98009
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	SANTA ANA
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global ID:	T0607100468
How Stopped Date:	Not reported
Enter Date:	3/31/1998
Date Confirmation of Leak Began:	1/15/1998
Date Preliminary Assessment Began:	Not reported
Discover Date:	1/15/1998
Enforcement Date:	Not reported
Close Date:	4/30/1998
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	3/31/1998
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.0558787
Longitude:	-117.3964647
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
MTBE Class:	*
Staff:	TME
Staff Initials:	CR2

CEDAR AND SANTA ANA STATION (Continued) **S102044149**

Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

D16 NNE 1/4-1/2 0.262 mi. 1385 ft. **CEDAR AND SANTA ANA STATION** **LUST** **1000334758**
10898 CEDAR AVE **HIST UST** **N/A**
BLOOMINGTON, CA 92316 **SWEEPS UST**
San Bern. Co. Permit

Site 3 of 5 in cluster D

Relative: Higher

Actual: 1037 ft.

LUST:

Region:	STATE
Global Id:	T0607100468
Latitude:	34.0559336
Longitude:	-117.3964135
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	04/30/1998
Lead Agency:	SAN BERNARDINO COUNTY
Case Worker:	CR2
Local Agency:	SAN BERNARDINO COUNTY
RB Case Number:	083603131T
LOC Case Number:	98009
File Location:	Local Agency
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0607100468
Contact Type:	Local Agency Caseworker
Contact Name:	CATHERINE RICHARDS
Organization Name:	SAN BERNARDINO COUNTY
Address:	620 SOUTH E STREET
City:	SAN BERNARDINO
Email:	crichards@sbcfire.org
Phone Number:	9093868419

Global Id:	T0607100468
Contact Type:	Regional Board Caseworker
Contact Name:	TOM E. MBEKE-EKANEM
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	tmbeke-ekanem@waterboards.ca.gov
Phone Number:	9513202007

Status History:

Global Id:	T0607100468
Status:	Completed - Case Closed
Status Date:	04/30/1998

CEDAR AND SANTA ANA STATION (Continued) **1000334758**

Global Id: T0607100468
Status: Open - Case Begin Date
Status Date: 01/15/1998

Global Id: T0607100468
Status: Open - Site Assessment
Status Date: 01/15/1998

Regulatory Activities:
Global Id: T0607100468
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0607100468
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0607100468
Action Type: ENFORCEMENT
Date: 03/31/1998
Action: Closure/No Further Action Letter

HIST UST:
Region: STATE
Facility ID: 00000005867
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0004
Contact Name: VALERIE FREDERICKS
Telephone: 7148771450
Owner Name: RICHARD ALDEN
Owner Address: 2307 RIVERSIDE AVE
Owner City,St,Zip: BLOOM., CA 92316

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00007500
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: 1/2 inches
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00007500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: 1/2 inches
Leak Detection: Stock Inventor

Tank Num: 003

CEDAR AND SANTA ANA STATION (Continued) **1000334758**

Container Num: 3
Year Installed: Not reported
Tank Capacity: 00007500
Tank Used for: Not reported
Type of Fuel: UNLEADED
Tank Construction: 1/2 inches
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: 12 gauge
Leak Detection: Stock Inventor

SWEEPS UST:
Status: Active
Comp Number: 8620
Number: 1
Board Of Equalization: 44-019911
Referral Date: 07-28-92
Action Date: 07-28-92
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 36-000-008620-000001
Tank Status: A
Capacity: 7500
Active Date: 08-25-88
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 4

Status: Active
Comp Number: 8620
Number: 1
Board Of Equalization: 44-019911
Referral Date: 07-28-92
Action Date: 07-28-92
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 36-000-008620-000002
Tank Status: A
Capacity: 7500
Active Date: 08-25-88
Tank Use: M.V. FUEL
STG: P
Content: PRM UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 8620
Number: 1
Board Of Equalization: 44-019911
Referral Date: 07-28-92

CEDAR AND SANTA ANA STATION (Continued) **1000334758**

Action Date:	07-28-92
Created Date:	02-29-88
Owner Tank Id:	3
SWRCB Tank Id:	36-000-008620-000003
Tank Status:	A
Capacity:	7500
Active Date:	08-25-88
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	8620
Number:	1
Board Of Equalization:	44-019911
Referral Date:	07-28-92
Action Date:	07-28-92
Created Date:	02-29-88
Owner Tank Id:	4
SWRCB Tank Id:	36-000-008620-000004
Tank Status:	A
Capacity:	500
Active Date:	08-25-88
Tank Use:	OIL
STG:	W
Content:	WASTE OIL
Number Of Tanks:	Not reported

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001818
Owner:	JAMES SYLVIA
Permit Number:	PT0000977
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	08/31/2001

D17 **CEDAR AND SANTA ANA STATI** **HIST CORTESE** **S103989458**
NNE **10898** **N/A**
1/4-1/2 **BLOOMINGTON, CA 92316**
0.262 mi.
1385 ft. **Site 4 of 5 in cluster D**

Relative:
Higher

Actual:
1037 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	36
Reg By:	LTNKA
Reg Id:	083603131T

D18 NNE 1/4-1/2 0.280 mi. 1476 ft. | **REPLANET LLC** | **SWRCY** | **S107138188**
10884 CEDAR AVE | **N/A**
BLOOMINGTON, CA 92316

Site 5 of 5 in cluster D

Relative: Higher

Actual: 1039 ft.

SWRCY:

Reg Id:	161229
Cert Id:	RC161229.001
Mailing Address:	9910 E 6th St
Mailing City:	Rancho Cucamonga
Mailing State:	CA
Mailing Zip Code:	91730
Website:	http://www.replanetusa.com
Phone Number:	(951) 520-1700
Grand Father:	N
Rural:	N
Operation Begin Date:	06/01/2012
Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Agency:	N/A
Monday Hours Of Operation:	CLOSED
Tuesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Wednesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Thursday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Friday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Saturday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Sunday Hours Of Operation:	CLOSED
Cert Status:	Operational
Organization ID:	151891
Organization Name:	rePLANET LLC
Agency Reg ID:	N/A
Operation End Date:	Not reported

E19 SSE 1/4-1/2 0.363 mi. 1919 ft. | **GAS N GO** | **LUST** | **U001574600**
11510 CEDAR AVE | **HIST UST** | **N/A**
BLOOMINGTON, CA 92316 | **SWEEPS UST**
San Bern. Co. Permit

Site 1 of 2 in cluster E

Relative: Lower

Actual: 975 ft.

LUST:

Region:	STATE
Global Id:	T0607170078
Latitude:	34.044651
Longitude:	-117.396565
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/26/2012
Lead Agency:	SANTA ANA RWQCB (REGION 8)
Case Worker:	VJB
Local Agency:	Not reported
RB Case Number:	083603937T
LOC Case Number:	Not reported
File Location:	Local Agency
Potential Media Affect:	Soil, Soil Vapor
Potential Contaminants of Concern:	Gasoline
Site History:	SBCFD transfer - soil only case defined..limted in extent/magnitude. Site closure pending ESI.

GAS N GO (Continued) **U001574600**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0607170078
Contact Type:	Regional Board Caseworker
Contact Name:	VALERIE JAHN-BULL
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	vjahn-bull@waterboards.ca.gov
Phone Number:	9517824903

Status History:

Global Id:	T0607170078
Status:	Open - Site Assessment
Status Date:	04/05/2002
Global Id:	T0607170078
Status:	Open - Site Assessment
Status Date:	05/15/2002
Global Id:	T0607170078
Status:	Open - Case Begin Date
Status Date:	04/05/2002
Global Id:	T0607170078
Status:	Open - Verification Monitoring
Status Date:	05/15/2002
Global Id:	T0607170078
Status:	Open - Verification Monitoring
Status Date:	06/30/2010
Global Id:	T0607170078
Status:	Completed - Case Closed
Status Date:	06/26/2012

Regulatory Activities:

Global Id:	T0607170078
Action Type:	ENFORCEMENT
Date:	06/26/2012
Action:	Closure/No Further Action Letter
Global Id:	T0607170078
Action Type:	ENFORCEMENT
Date:	07/07/2010
Action:	File review
Global Id:	T0607170078
Action Type:	ENFORCEMENT
Date:	07/16/2010
Action:	File review
Global Id:	T0607170078
Action Type:	ENFORCEMENT
Date:	03/01/2011

GAS N GO (Continued) **U001574600**

Action: Technical Correspondence / Assistance / Other

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 09/30/2011
Action: File review

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 11/07/2011
Action: File review

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 03/21/2012
Action: File review

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 04/26/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 10/21/2008
Action: Warning Letter

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 07/01/2010
Action: File review

Global Id: T0607170078
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 05/31/2011
Action: Site Visit / Inspection / Sampling

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 06/30/2010
Action: Verbal Enforcement

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 05/10/2012
Action: Notification - Public Notice of Case Closure

Global Id: T0607170078
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

GAS N GO (Continued) **U001574600**

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 03/02/2010
Action: Referral to Regional Board

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 03/22/2012
Action: File review

Global Id: T0607170078
Action Type: ENFORCEMENT
Date: 04/18/2012
Action: File review

Global Id: T0607170078
Action Type: RESPONSE
Date: 01/29/2003
Action: Other Report / Document

Global Id: T0607170078
Action Type: Other
Date: 01/01/1950
Action: Leak Stopped

HIST UST:
Region: STATE
Facility ID: 00000039248
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0004
Contact Name: Not reported
Telephone: 7148773401
Owner Name: MOBIL OIL CORPORATION
Owner Address: 612 S. FLOWER STREET
Owner City,St,Zip: LOS ANGELES, CA 90017

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003

GAS N GO (Continued) **U001574600**

Container Num: 3
Year Installed: Not reported
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000280
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: Stock Inventor

SWEEPS UST:
Status: Active
Comp Number: 10519
Number: 1
Board Of Equalization: 44-020273
Referral Date: 03-19-92
Action Date: 03-19-92
Created Date: 09-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-010519-000001
Tank Status: A
Capacity: 1
Active Date: 09-13-88
Tank Use: UNKNOWN
STG: P
Content: UNKNOWN
Number Of Tanks: 3

Status: Active
Comp Number: 10519
Number: 1
Board Of Equalization: 44-020273
Referral Date: 03-19-92
Action Date: 03-19-92
Created Date: 09-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-010519-000002
Tank Status: A
Capacity: 1
Active Date: 09-13-88
Tank Use: UNKNOWN
STG: P
Content: UNKNOWN
Number Of Tanks: Not reported

Status: Active
Comp Number: 10519
Number: 1
Board Of Equalization: 44-020273
Referral Date: 03-19-92

GAS N GO (Continued) **U001574600**

Action Date:	03-19-92
Created Date:	09-13-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	36-000-010519-000003
Tank Status:	A
Capacity:	1
Active Date:	09-13-88
Tank Use:	UNKNOWN
STG:	P
Content:	UNKNOWN
Number Of Tanks:	Not reported

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001037
Owner:	BRAR, AMANPREET K
Permit Number:	PT0016934
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	ACTIVE
Expiration Date:	08/31/2015

Region:	SAN BERNARDINO
Facility ID:	FA0001037
Owner:	BRAR, AMANPREET K
Permit Number:	PT0016935
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	ACTIVE
Expiration Date:	08/31/2015

Region:	SAN BERNARDINO
Facility ID:	FA0001037
Owner:	BRAR, AMANPREET K
Permit Number:	PT0016932
Permit Category:	HAZMAT HANDLER - UST ONLY
Facility Status:	ACTIVE
Expiration Date:	08/31/2015

Region:	SAN BERNARDINO
Facility ID:	FA0001037
Owner:	BRAR, AMANPREET K
Permit Number:	PT0026639
Permit Category:	WASTE INCIDENTAL UST OPERATION ONLY
Facility Status:	ACTIVE
Expiration Date:	08/31/2015

E20 **ARCO AM/PM** **LUST** **S105692195**
SSE **11510 CEDAR AVENUE** **N/A**
1/4-1/2 **BLOOMINGTON, CA 92316**
0.363 mi.
1919 ft. **Site 2 of 2 in cluster E**

Relative:
Lower

Actual:
975 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Leak being confirmed
Case Number:	083603937T

ARCO AM/PM (Continued) **S105692195**

Local Case Num:	2002019
Case Type:	Undefined
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	11TH STREET
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Close Tank
Leak Cause:	UNK
Leak Source:	Tank
Global ID:	T0607170078
How Stopped Date:	4/5/2002
Enter Date:	Not reported
Date Confirmation of Leak Began:	5/15/2002
Date Preliminary Assessment Began:	Not reported
Discover Date:	4/5/2002
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	0
Longitude:	0
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
MTBE Class:	*
Staff:	VJJ
Staff Initials:	LH6
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	Not reported
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: Not reported

21 SW 1/2-1 0.791 mi. 4174 ft. | **VALLEY TRAILS ELEMENTARY SCHOOL**
ARMSTRONG ROAD/LOCUST AVENUE
FONTANA, CA 92337 | **SCH**
ENVIROSTOR | **S108649761**
N/A

Relative: Higher

Actual: 1015 ft.

SCH:

Facility ID:	60000648
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	12
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Shahir Haddad
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404749
Assembly:	47
Senate:	32
Special Program Status:	Not reported
Status:	Inactive - Withdrawn
Status Date:	03/25/2009
Restricted Use:	NO
Funding:	School District
Latitude:	34.04022
Longitude:	-117.4116
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Under Investigation
Confirmed COC:	31001-NO
Potential Description:	SOIL
Alias Name:	404749
Alias Type:	Project Code (Site Code)
Alias Name:	60000648
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	08/02/2007
Comments:	Site visit to observe current site conditions and scoping meeting were completed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	06/29/2007
Comments:	Signed agreement sent (FedEx) to District.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	03/25/2009
Comments:	DTSC prepared project close out Cost Recovery Unit Memorandum.

VALLEY TRAILS ELEMENTARY SCHOOL (Continued) **S108649761**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 02/27/2008
Comments: The District informed the DTSC that the environmental investigation (PEA) for the site will not continue for at least one year.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60000648
Status: Inactive - Withdrawn
Status Date: 03/25/2009
Site Code: 404749
Site Type: School Investigation
Site Type Detailed: School
Acres: 12
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 47
Senate: 32
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 34.04022
Longitude: -117.4116
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Under Investigation
Confirmed COC: 31001-NO
Potential Description: SOIL
Alias Name: 404749
Alias Type: Project Code (Site Code)
Alias Name: 60000648
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 08/02/2007
Comments: Site visit to observe current site conditions and scoping meeting were completed.

VALLEY TRAILS ELEMENTARY SCHOOL (Continued) **S108649761**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	06/29/2007
Comments:	Signed agreement sent (FedEx) to District.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	03/25/2009
Comments:	DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inactive Status Letter
Completed Date:	02/27/2008
Comments:	The District informed the DTSC that the environmental investigation (PEA) for the site will not continue for at least one year.

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

22
NE
1/2-1
0.913 mi.
4818 ft.

UNION PACIFIC RAILROAD CO **CHMIRS** **S105640256**
19100 SLOVER AVE **San Bern. Co. Permit** **N/A**
BLOOMINGTON, CA 92316 **ENVIROSTOR**

Relative:
Higher

Actual:
1051 ft.

CHMIRS:

OES Incident Number:	14-0114
OES notification:	01/07/2014
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Rail Road
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1605
Year:	2014
Agency:	UPRR
Incident Date:	1/7/2014
Admin Agency:	San Bernardino County Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Crude Oil
Quantity Released:	5-Feb
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Caller states: Tank Car ID: VMSX28211 was releasing crude oil at the rail yard. Cause of the release is unknown. No derailment.
OES Incident Number:	14-0153
OES notification:	01/09/2014
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Rail Road
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1407
Year:	2014
Agency:	UPRR
Incident Date:	1/9/2014
Admin Agency:	San Bernardino County Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Crude Oil
Quantity Released:	2
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Number of Fatalities:	Not reported
Description:	RP states that an oil tank leaked due to unknown reasons resulting in the release of 2 gallons of crude oil onto the side of the tank and ground. The release is contained and cleanup is underway. No waterways have been impacted. Caller states this incident is not associated with any train activity. Tank #: TNKO8801 and incident occurred at the Colton Railyard.
OES Incident Number:	008506
OES notification:	Not reported
OES Date:	6/1/1995
OES Time:	04:49:17 AM
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1995
Agency:	southern pacific
Incident Date:	6/1/95 0320
Admin Agency:	Not reported
Amount:	Not reported
Contained:	NO
Site Type:	R/R
E Date:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Substance:	train car derailment no release
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	train car derailment, no leakage. one set of wheels off track, upright.
OES Incident Number:	'10-7689
OES notification:	12/20/2010
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Storm Drain
Spill Site:	Rail Road
Cleanup By:	Contractor
Containment:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	2212
Year:	2010
Agency:	UPRR
Incident Date:	12/20/2010
Admin Agency:	San Bernardino County Health Department
Amount:	Not reported
Contained:	Yes
Site Type:	Storm Drain
E Date:	Not reported
Substance:	Rain Water
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Caller states that at a rail yard the oil water separator is overflowing with water and rain water. No petroleum product in the water. Caller states that vacuum crews are onscene trying to capture the release.
OES Incident Number:	11-6945
OES notification:	11/22/2011
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Rail Road
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Oz.
Other:	Not reported
Date/Time:	1130
Year:	2011
Agency:	UPRR
Incident Date:	11/22/2011
Admin Agency:	San Bernardino County Health Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Dicyclopentadidne
Quantity Released:	6
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	RP states that six ounces of the product was found on top of a tank car. No waterways were impacted.
OES Incident Number:	’12-0446
OES notification:	01/23/2012
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Rail Road
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	116
Year:	2012
Agency:	UPRR
Incident Date:	1/23/2012
Admin Agency:	San Bernardino County Health Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Oil - Crude
Quantity Released:	Unknown
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	RP states that a release of crude oil from the top of a tank car due to unknown circumstances. HazMat manager is enroute to scene. Flow of crude oil has been contained. Tank car ID: CTCX734728.
OES Incident Number:	'12-0447
OES notification:	01/23/2012
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Rail Road
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	N/A
Other:	Not reported
Date/Time:	2340
Year:	2012
Agency:	UPRR
Incident Date:	1/22/2012
Admin Agency:	San Bernardino County Health Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Derailment
Quantity Released:	1

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	RP states that the manager of rail yard reported that a flat car: Car ID TTYX353194 derailed upright with one wheel on the ground. Personnel on scene will re-rail car.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006899
Owner:	UNION PACIFIC RAILROAD
Permit Number:	PT0020793
Permit Category:	APSA 100,001-1,000,000 GAL FAC CAPACITY
Facility Status:	ACTIVE
Expiration Date:	09/30/2014

Region:	SAN BERNARDINO
Facility ID:	FA0006899
Owner:	UNION PACIFIC RAILROAD
Permit Number:	PT0001676
Permit Category:	LARGE QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2014

Region:	SAN BERNARDINO
Facility ID:	FA0006899
Owner:	UNION PACIFIC RAILROAD
Permit Number:	PT0001675
Permit Category:	HAZARDOUS MATERIALS 11-30 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2014

ENVIROSTOR:

Facility ID:	36370027
Status:	No Further Action
Status Date:	04/14/1995
Site Code:	540014
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	0.01
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED

UNION PACIFIC RAILROAD CO (Continued) **S105640256**

Program Manager: Not reported
Supervisor: * Greg Holmes
Division Branch: Cleanup Cypress
Assembly: 47
Senate: 32
Special Program: EPA - PASI
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: EPA Grant
Latitude: 34.06305
Longitude: -117.3933
APN: NONE SPECIFIED
Past Use: RAIL ROAD MAINTENANCE SHOP
Potential COC: TPH-diesel TPH-gas TPH-MOTOR OIL
Confirmed COC: 30024-NO 30025-NO 3002502-NO
Potential Description: SOIL
Alias Name: CAD000627950
Alias Type: EPA Identification Number
Alias Name: 110018981592
Alias Type: EPA (FRS #)
Alias Name: 540014
Alias Type: Project Code (Site Code)
Alias Name: 36370027
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 04/01/1985
Comments: T/C W/ W.KEENEY,SO PACIFIC,714-877-4371, 6/28/84-1)SOURCE ACT: CLEAN DIRT,OIL,& GREASE FROM LOCOMOTIVES. 2)YR OF OPER: 1972-PRESENT SUBMIT TO EPA PRELIM ASSESS DONE CERCLA 104

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/12/1983
Comments: FACILITY IDENTIFIED ID FROM ERRIS

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 04/18/1983
Comments: FACILITY IDENTIFIED ID FROM EPA GEN.LIST

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 20 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLOOMINGTON	1009619621	16742 14TH ST	16742 14TH ST		US CDL
BLOOMINGTON	S107539764		ON CEDAR AVENUE (100 YARDS EAS	92316	CDL
BLOOMINGTON	S114726934	CRESTMORE DISPOSAL SITE (KESSLER)	SW CORNER OF JURUPA & LINDEN A		RGA LF
BLOOMINGTON	S103442711	LANDFILLCRESTMORE-CLOSED	JURUPA ST	0	WMUDS/SWAT, WDS
BLOOMINGTON	S107539217		LINDEN AVE, SO OF SANTA ANA AV		CDL
BLOOMINGTON	S111290839	CALTRANS MAGANA-OTREGA STATION	451 SLOVER AVE.		SWF/LF
BURBANK	S112942192	FEDERAL AVIATION	39500 NATIONAL TRAILS HWY BLD	92337	HAZNET
FONTANA	S112959224	SKANSKA	E HIGHWAY 60 MI MARKER 33.80	92316	HAZNET
FONTANA	S112241765	FEDERER 12KV	JURUPA AVENUE	92337	NPDES
FONTANA	S111216381	SOUTH SIDE OF SLOVER AVENUE EAST O	SOUTH SIDE OF SLOVER AVENUE EA	92337	NPDES
SAN BERNARDINO COUNT	S107538721		HIGHWAY 138 E OF HIGHWAY 2		CDL
SAN BERNARDINO COUNT	S107538848		HWY 18, 3 MILES NO OF WATERMAN		CDL
SAN BERNARDINO COUNT	S107538165		CORNER OF HWY 247 & 18 AND 76		CDL
SAN BERNARDINO COUNT	S107539873		ON HIGHWAY 395, 2 MILES NORTH		CDL
SAN BERNARDINO COUNT	S107539885		ON HWY 138, 1 1/2 MI W OF HWY		CDL
SAN BERNARDINO COUNT	S107532438		3 1/2 MI E OF BEAR VALLEY & HW		CDL
SAN BERNARDINO COUNT	1016139697	CIMA ROAD MINE WASTE SITE	1 MIL W OF INTE. 15 OFF CIMA R		CERCLIS
SAN BERNARDINO COUNT	S107540506		ROAD INO9, 3/2 MI E OF HWY 330		CDL
SAN BERNARDINO COUNT	S107540087		ON STATE HIGHWAY 173, ~2 MILES		CDL
WILMINGTON	S112892116	ROADWAY EXPRESS	18332/18344 SLOVER & 10408 LIN	92316	HAZNET

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 10/07/2014
Number of Days to Update: 13	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/29/2014
Date Data Arrived at EDR: 10/09/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 11

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/18/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 46

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/18/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 25

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/04/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 17

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/20/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 73

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/14/2014
Date Data Arrived at EDR: 05/15/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 61

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/20/2014
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 05/22/2014
Date Data Arrived at EDR: 08/22/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 27

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 20

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/19/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/04/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 17

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 25

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 08/20/2014
Date Data Arrived at EDR: 08/22/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 27

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/14/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 7

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/20/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 05/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 45

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/22/2014
Date Data Arrived at EDR: 09/23/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/23/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 24

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 02/20/2014
Date Made Active in Reports: 03/27/2014
Number of Days to Update: 35

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 09/09/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 41

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 09/02/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 09/09/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 41

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/19/2014
Date Data Arrived at EDR: 08/20/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 28

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 79

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/26/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 49

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 22

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 25

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 01/30/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 132

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/04/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/29/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/26/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 05/06/2014
Date Data Arrived at EDR: 05/16/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/07/2014
Date Data Arrived at EDR: 10/08/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/08/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/16/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 05/23/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/29/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 01/15/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/18/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/18/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 27

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/28/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 08/21/2014
Number of Days to Update: 49

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/11/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 49

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 41

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/26/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/20/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/19/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/26/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Quarterly

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/04/2014
Date Data Arrived at EDR: 09/04/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/14/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 07/31/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 52

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/10/2014
Number of Days to Update: 23

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 09/30/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 06/04/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/14/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 13

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Quarterly

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/17/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/23/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 26

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 49

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 09/08/2014
Date Data Arrived at EDR: 09/09/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 15

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 20

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/02/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/30/2014
Number of Days to Update: 27

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/11/2014
Date Data Arrived at EDR: 08/14/2014
Date Made Active in Reports: 10/09/2014
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/05/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 07/31/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 52

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/30/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/25/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/29/2014
Number of Days to Update: 34

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 08/05/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/19/2014
Number of Days to Update: 35

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/10/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 14

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 07/28/2014
Date Data Arrived at EDR: 07/30/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 47

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/21/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/29/2014
Number of Days to Update: 34

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 07/23/2014
Date Data Arrived at EDR: 07/25/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 28

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/20/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 06/06/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 41

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/14/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/21/2014
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/19/2014
Number of Days to Update: 29

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/17/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/25/2014
Number of Days to Update: 28

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/17/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 07/23/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/20/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 07/28/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 23

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/13/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 32

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 06/27/2014
Number of Days to Update: 16

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 07/02/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 42

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/20/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/20/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 35

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 09/02/2014
Date Data Arrived at EDR: 09/05/2014
Date Made Active in Reports: 09/24/2014
Number of Days to Update: 19

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 09/02/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 28

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/28/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/16/2014
Date Data Arrived at EDR: 09/18/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 7

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 09/16/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 52

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 45

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/20/2014
Number of Days to Update: 8

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 29

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/08/2014
Date Data Arrived at EDR: 07/11/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/08/2014
Date Data Arrived at EDR: 07/11/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/06/2014
Date Data Arrived at EDR: 04/08/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 21

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/05/2014
Date Data Arrived at EDR: 07/17/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 11

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/06/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/06/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 54

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/27/2014
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/20/2014
Date Data Arrived at EDR: 06/23/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 18

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/22/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/01/2014
Number of Days to Update: 36

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/20/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/07/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 52

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/16/2014
Date Data Arrived at EDR: 06/19/2014
Date Made Active in Reports: 07/10/2014
Number of Days to Update: 21

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 08/22/2014
Date Data Arrived at EDR: 08/26/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/22/2014
Next Scheduled EDR Contact: 09/15/2014
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/02/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/14/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 46

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 09/09/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/25/2014
Number of Days to Update: 14

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 06/20/2014
Number of Days to Update: 8

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2014
Date Data Arrived at EDR: 06/26/2014
Date Made Active in Reports: 07/25/2014
Number of Days to Update: 29

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2014
Date Data Arrived at EDR: 06/26/2014
Date Made Active in Reports: 07/25/2014
Number of Days to Update: 29

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 06/26/2014
Date Data Arrived at EDR: 08/20/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 47

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 25

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/09/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 36

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 08/13/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 49

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/08/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/28/2014
Date Data Arrived at EDR: 08/18/2014
Date Made Active in Reports: 09/26/2014
Number of Days to Update: 39

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/13/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 06/26/2014
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 09/15/2014
Number of Days to Update: 46

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/27/2014
Date Data Arrived at EDR: 06/17/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 24

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/17/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 08/18/2014
Number of Days to Update: 42

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/22/2014
Next Scheduled EDR Contact: 01/05/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/05/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 10/06/2014
Number of Days to Update: 60

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/31/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/19/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 10/17/2014
Number of Days to Update: 71

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/20/2014
Next Scheduled EDR Contact: 02/02/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/26/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 48

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

© 2010 Tele Atlas North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CEDAR AVENUE
CEDAR AVENUE/ JURUPA AVENUE
BLOOMINGTON, CA 92316

TARGET PROPERTY COORDINATES

Latitude (North):	34.0506 - 34˚ 3' 2.16''
Longitude (West):	117.3983 - 117˚ 23' 53.88''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	463238.8
UTM Y (Meters):	3767643.2
Elevation:	1012 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	34117-A4 FONTANA, CA
Most Recent Revision:	1980

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

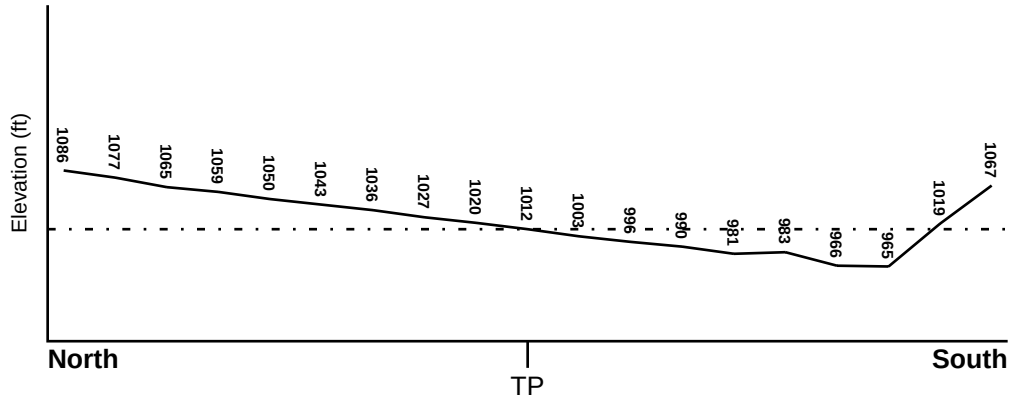
TOPOGRAPHIC INFORMATION

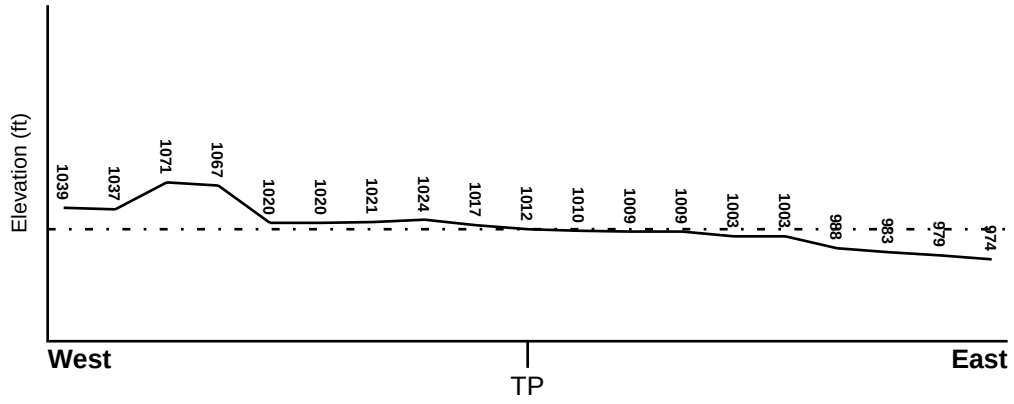
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1012 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN BERNARDINO, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06071C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
FONTANA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

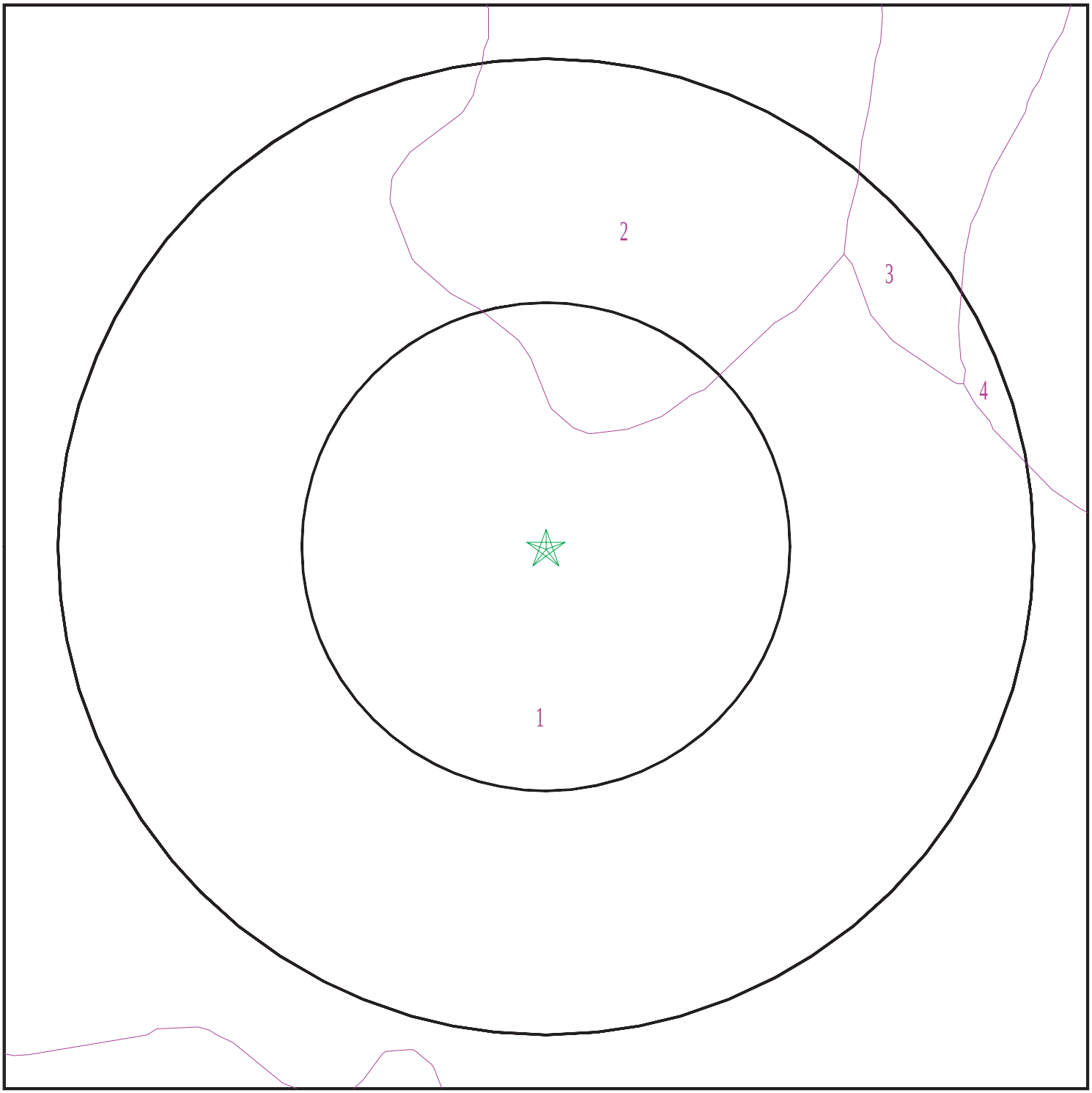
Era:	Paleozoic
System:	Pennsylvanian
Series:	Upper Paleozoic
Code:	uPze *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Eugeosynclinal Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4111514.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Cedar Avenue	CLIENT:	Hazard Management Consulting
ADDRESS:	Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT:	Mark Cousineau
		INQUIRY #:	4111514.2s
LAT/LONG:	34.0506 / 117.3983	DATE:	October 21, 2014 7:21 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: TUJUNGA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1
2	18 inches	59 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

Soil Map ID: 2

Soil Component Name: TUJUNGA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1
2	35 inches	59 inches	gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1

Soil Map ID: 3

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1
2	11 inches	59 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6

Soil Map ID: 4

Soil Component Name: DELHI

Soil Surface Texture: fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6
2	18 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	USGS40000140097	1/8 - 1/4 Mile SSW
4	USGS40000140063	1/2 - 1 Mile SE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

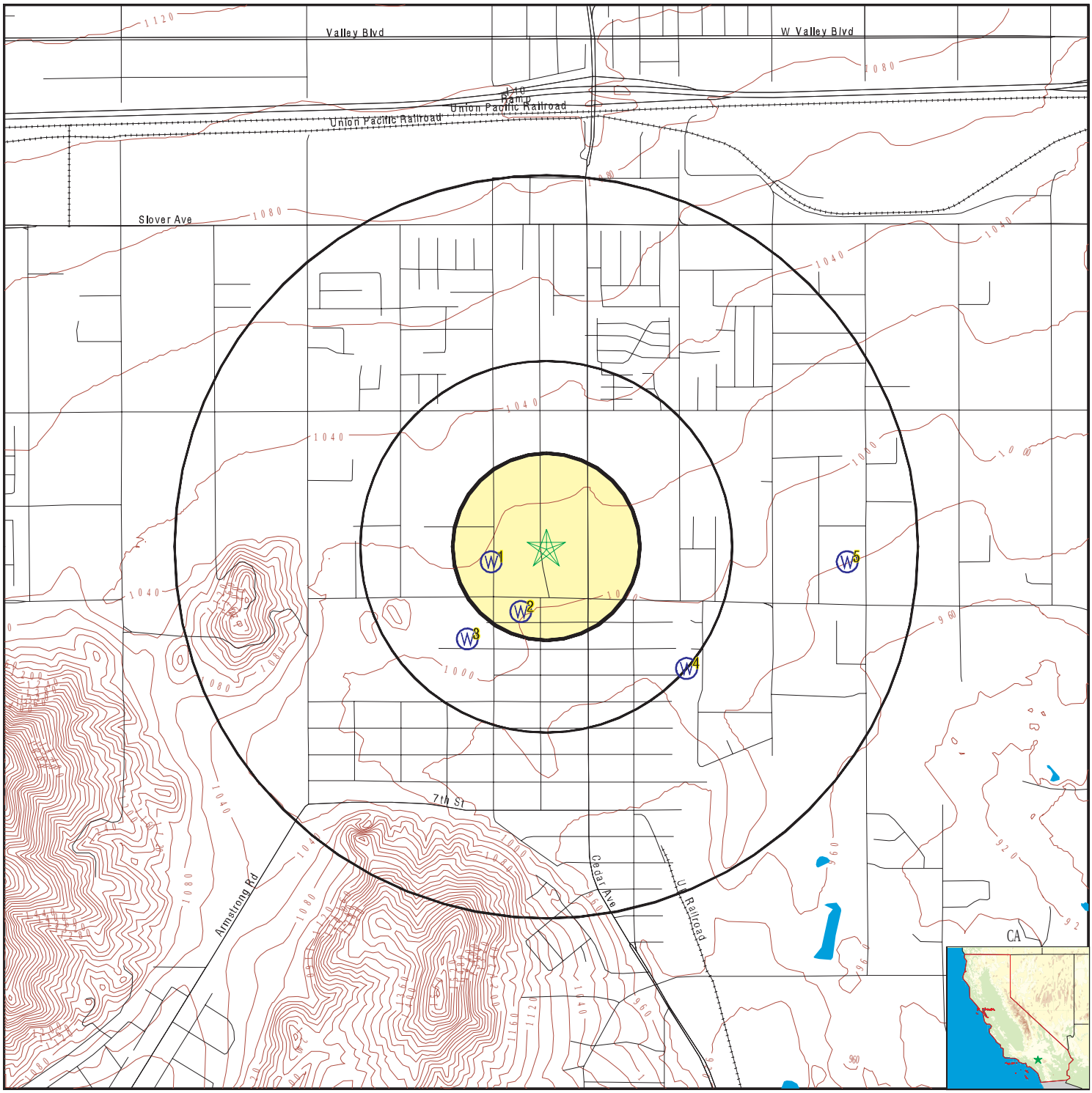
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	1010	1/8 - 1/4 Mile WSW
3	CADW50000004049	1/4 - 1/2 Mile SW
5	1009	1/2 - 1 Mile East

PHYSICAL SETTING SOURCE MAP - 4111514.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME:	Cedar Avenue	CLIENT:	Hazard Management Consulting
ADDRESS:	Cedar Avenue/ Jurupa Avenue Bloomington CA 92316	CONTACT:	Mark Cousineau
		INQUIRY #:	4111514.2s
LAT/LONG:	34.0506 / 117.3983	DATE:	October 21, 2014 7:21 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **WSW** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**1010**

Water System Information:

Prime Station Code:	01S/05W-34D01 S	User ID:	TAN
FRDS Number:	3610004019	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340300.0 1172400.0	Precision:	Undefined
Source Name:	WELL 25		
System Number:	3610004		
System Name:	WEST SAN BERNARDINO CWD		
Organization That Operates System:			
	PO BOX 920		
	RIALTO, CA 92376-0920		
Pop Served:	41454	Connections:	15052
Area Served:	RIALTO-BLOOMINGTON		

---

2 **SSW** **1/8 - 1/4 Mile** **Lower**	**FED USGS**	**USGS40000140097**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340253117235501		
Monloc name:	001S005W34D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0480685
Longitude:	-117.3994908	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

---

3 **SW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**CADW50000004049**

Latitude :	34.047		
Longitude :	117.402		
Site code:	340470N1174020W001	Casgem sta:	01S05W33A002S
Local well:	Santa Fe Gas 2A	Casgem s 1:	Observation
County id:	36		
Basin cd:	8-2.03	Basin desc:	Riverside-Arlington
Org unit n:	Southern Region Office	Site id:	CADW50000004049

4
SE **FED USGS** **USGS40000140063**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340245117232701		
Monloc name:	001S005W34B002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0458464
Longitude:	-117.3917128	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	987
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	240
Welldepth units:	ft	Wellholedepth:	240
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 116

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1986-12-01	156.0		1986-11-01	159.0	
1986-10-01	152.0		1986-09-01	156.0	
1986-08-01	155.0		1986-07-01	156.0	
1986-06-26	184.26		1986-06-01	156.0	
1986-05-01	156.0		1986-04-01	156.0	
1986-03-12	181.60				
Note: Other conditions existed that would affect the measured water level.					
1986-03-01	158.0		1986-02-01	157.0	
1986-01-02	157.0		1985-12-02	156.0	
1985-11-01	156.0		1985-10-01	158.0	
1985-09-03	160.0		1985-08-01	159.7	
1985-07-01	160.0		1985-06-03	159.1	
1985-05-23	156.0		1985-05-01	158.5	
1985-04-01	158.7		1985-03-01	159.0	
1985-02-01	159.2		1985-01-02	160.0	
1984-12-03	160.2		1984-11-01	161.0	
1984-10-01	160.0		1984-09-04	160.2	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1984-08-01	160.0		1984-07-02	157.9	
1984-06-01	160.7		1984-05-01	157.9	
1984-04-02	158.0		1984-03-01	159.9	
1984-02-01	160.2		1983-12-01	158.3	
1983-11-01	158.9		1983-09-01	159.2	
1983-08-01	159.7		1983-07-01	159.7	
1983-06-01	161.5		1983-05-02	162.5	
1983-04-01	163.0		1983-03-01	163.0	
1983-02-01	167.9		1983-01-03	164.0	
1982-12-01	164.0		1982-11-01	164.0	
1982-10-01	163.2		1982-09-01	165.2	
1982-08-02	164.5		1982-07-01	164.7	
1982-06-01	164.1		1982-05-03	164.7	
1982-04-01	164.8		1982-03-01	165.3	
1982-02-01	166.5		1982-01-02	163.0	
1981-12-01	163.0		1981-11-02	163.0	
1981-10-01	163.0		1981-09-04	163.0	
1981-08-04	163.0		1981-07-02	163.0	
1981-06-02	163.0		1981-05-02	164.0	
1981-04-02	164.0		1981-03-03	164.0	
1981-02-04	164.0		1981-01-02	164.0	
1980-12-03	164.0		1980-11-03	163.0	
1980-10-03	161.0		1980-09-02	161.0	
1980-08-02	161.0		1980-07-02	161.0	
1980-06-02	160.0		1980-05-02	161.0	
1980-04-02	161.0		1980-03-03	162.0	
1980-02-04	163.0		1980-01-02	164.0	
1979-12-03	164.0		1979-11-02	163.0	
1979-10-03	165.0		1979-09-01	167.0	
1979-07-01	168.0		1979-06-01	167.0	
1979-05-01	168.0		1979-04-01	170.0	
1979-03-01	171.0		1979-02-01	170.0	
1979-01-01	164.0		1978-12-01	163.0	
1978-11-01	164.0		1978-10-01	165.0	
1978-09-01	163.0		1978-08-01	164.0	
1978-07-01	164.0		1978-05-01	168.0	
1978-04-01	170.0		1978-03-01	173.0	
1950-12-04					
Note: The site was being pumped.					
1949-12-15	113.1		1947-03-25	133.8	
1946-03-25	135.1		1945-12-31	135.8	
1945-03-19	135.9		1944-11-28	137.5	
1944-04-04	137.1		1944-01-07	139.2	
1943-05-04	139.7		1943-01-14	138.7	

5
East **CA WELLS** **1009**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/05W-34B02 S	User ID:	TAN
FRDS Number:	3610004020	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340300.0 1172300.0	Precision:	Undefined
Source Name:	WELL 26		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System Number: 3610004
System Name: WEST SAN BERNARDINO CWD
Organization That Operates System:
PO BOX 920
RIALTO, CA 92376-0920
Pop Served: 41454 Connections: 15052
Area Served: RIALTO-BLOOMINGTON

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92316	2	0

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN BERNARDINO COUNTY, CA

Number of sites tested: 18

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.678 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

© 2010 Tele Atlas North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

Cedar Avenue

Cedar Avenue Jurupa Avenue
Bloomington, CA 92316

Inquiry Number: 4111514.5
October 23, 2014

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2014 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1985	☑	☑	Haines Criss-Cross Directory
1980	☑	☑	Haines Criss-Cross Directory
1975	☑	☑	Haines Criss-Cross Directory

RECORD SOURCES

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

FINDINGS

TARGET PROPERTY STREET

Cedar Avenue Jurupa Avenue
Bloomington, CA 92316

Year	***CD Image***	***Source***
CEDAR AVE		
2013	pg A1	Cole Information Services
2008	pg A4	Cole Information Services
2003	pg A8	Cole Information Services
1999	pg A13	Cole Information Services
1995	pg A18	Cole Information Services
1992	pg A21	Cole Information Services
1985	pg A24	Haines Criss-Cross Directory
1980	pg A27	Haines Criss-Cross Directory
1975	pg A30	Haines Criss-Cross Directory
1975	pg A31	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*
JURUPA AVE		
2013	pg. A2	Cole Information Services
2008	pg. A6	Cole Information Services
2003	pg. A10	Cole Information Services
1999	pg. A15	Cole Information Services
1995	pg. A19	Cole Information Services
1992	pg. A22	Cole Information Services
1985	pg. A25	Haines Criss-Cross Directory
1980	pg. A28	Haines Criss-Cross Directory
1975	pg. A32	Haines Criss-Cross Directory
LINDEN AVE		
2013	pg. A3	Cole Information Services
2008	pg. A7	Cole Information Services
2003	pg. A12	Cole Information Services
1999	pg. A17	Cole Information Services
1995	pg. A20	Cole Information Services
1992	pg. A23	Cole Information Services
1985	pg. A26	Haines Criss-Cross Directory
1980	pg. A29	Haines Criss-Cross Directory
1975	pg. A33	Haines Criss-Cross Directory

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 2013

10880	VAQUERO GUERO EL
10884	SAVALOT
10890	FOREVER BEAUTY SALON
10892	EL NOA NOA
10896	C & H LIQUOR STORE
10930	YOUN MYUNG
10982	LA FERIA DE SAN MARCOS
11008	GINA DUONG
11034	JOSE DIAZ
11058	MAX RANGINGISAN
11066	GEORGE WATERS
11100	UPLAND INDONESIAN SDA CHURCH
11134	ANNA HERNANDEZ
	ARMANDO HILDALGO
11138	OCCUPANT UNKNOWN
11150	MARIA ORTIZ
11151	SCOTT FOSTER
11161	OCCUPANT UNKNOWN
11166	RAUL ENRIQUEZ
11169	GOLDEN COAST TRUCKING
11171	OCCUPANT UNKNOWN
11174	OCCUPANT UNKNOWN
11180	MELVIN ELSEA
11188	OCCUPANT UNKNOWN
11205	ILIE DRAGOMIR
	R V TRANSPORT SHOP
11260	PATRICIA JANSEN
11278	VICTOR MARADIAGA
11311	LITTLE TRUCK SALES THE
11332	SUZETT
11336	PERFECT T THE
11340	ONE STOP JR MARKET & LIQUOR
11370	ROBERT RAWLS
11378	SHAWN STUNKARD
11386	OCCUPANT UNKNOWN
11391	FAMILY DISCOUNT
	FAST SERVICE
11394	MIGUEL MARTINEZ
11406	OCCUPANT UNKNOWN
11411	FERNANDEZ TIRE SHOP
11416	KARENS PARTY SUPPLIES STORE WATER &
11428	LEONARDO VILLA
11436	INLAND MARKET
11441	PRIORITY AUTOMOTIVE
11511	CARNICERIA VASQUEZ
11515	CHRISS INCOME TAX & BOOKKEEPING SER
	HAIR USA
	M & M BURGERS
	PACIFIC HERITAGE INSURANCE

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 2013

17522	ALEXIA KING
17540	J WILLIAM
17590	OCCUPANT UNKNOWN
17594	JOHANNA ROY
17616	RUBEN GONZALEZ
17656	RONALD DEJARNETTE
18358	JORGE MENDOZA
18382	JESUS GARCIA
18414	JOHNNIE LONG
18438	SAL ROMERO
18507	MIKEL ARVIZU
18517	ANDREW DELGADO
18527	GUILLERMO GAMBOA
18537	VERONICA GONZALES
18547	DENISE LIZARRAGA
18557	SALVADOR RAMIREZ
18567	JOEL LEON
18579	OSCAR MORENO
18615	CHRISTINE WHITE
18625	STEPHANIE ARROYO
18637	KENNETH GOFF
18640	GREGORY CONNER
18655	PABLO CRUZ
18665	BERTHA OJEDA
18754	GEORGIA EAST
18765	LEO CLAYTON
18772	MARK BILOKI
18789	NOE ALAVEZ
18790	ALAN RIFE
	JAMES JOHNSON
18813	GLEN MALCOLM
18825	ALEXIS RAMIREZ
18839	RAMON FARIAS
18849	MARIA SALGADO
18869	JOSEFINA VELENZUELA
18870	COLTON JOINT UNIFIED SCHOOL DISTRICT
18879	MICHAEL RUBIO
18930	OCCUPANT UNKNOWN
18965	OCCUPANT UNKNOWN
18975	FACUNDO FERNANDEZ
19130	ELOISA RIOS
19144	RAMON VARGAS
19210	CESAR RIVAS

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 2013

10731	JEANA TORCHIA
10739	BLAS MEDINA
10746	DANIEL LAS
10749	FELIX CORREA
10756	OCCUPANT UNKNOWN
10759	ANGELINA REYES
10769	OCCUPANT UNKNOWN
10770	HOPKINS TREE & TRACTOR SERVICE PETER HOPKINS
10777	CAROL POPYACK
10793	LISA FERENDO
10803	ADOLFO SAENZ
10808	WILLIAM JONES
10813	EULALIO VARELA
10833	ISAIAS BUSTOS
10859	RAYMOND ELLITHORPE
10877	ALFRED STELLE
10881	BONNIE JACKSON
10987	MIGUEL CHAVEZ
11050	COLTON JOINT UNIFIED SCHOOL DISTRICT
11109	OCCUPANT UNKNOWN
11189	OCCUPANT UNKNOWN
11191	ROGER JAYNES
11206	OCCUPANT UNKNOWN
11244	OCCUPANT UNKNOWN
11266	JOHN MCNEIL
11290	HOWARD BAKER
11797	FRANK LOZA
11801	CARLOS RODRIGUEZ
11811	ABEL JIMENEZ
11819	JORGE SANCHEZ
11841	GILBERT ROSALES
11855	PHUONG HO
11861	REYES PEREZ
11871	ANTHONY LYTLE
11875	DARIO TOVAR

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 2008

10880	EL VAQUERO GUERO
	SAMANTHAS SCND HND & THRFT ST
10884	MORAN FOODS INC
	SAVE A LOT
10890	SUZETT
10892	EL NOA NOA
10896	C & H LIQUOR INC
10898	SMOG CENTER
10930	YOUN MYUNG
10962	J & E TIRE SHOP
10974	EVAN CASTANEDA
11008	GINA DUONG
11034	OCCUPANT UNKNOWN
	PRECISION ORNAMENTAL IRON
	PRECISION WELDING & FABRICATING
11046	J LEWIS
11058	MAX RANGINGISAN
11066	GEORGE WATERS
11100	UPLAND INDONESIAN SDA CHURCH
11108	MARIA GASTELUM
11118	OCCUPANT UNKNOWN
11134	ARMANDO HILDALGO
	TOMAS ARAUJO
11138	EZEQUIEL GONZALEZ
11150	RAUL ENRIQUEZ
11151	SCOTT FOSTER
11161	RONALD FOSTER
11166	MARIO MARTINEZ
11171	GUILLERMO LOPEZ
11174	JAVIER REYES
11180	OCCUPANT UNKNOWN
11188	OCCUPANT UNKNOWN
11205	AURORA DRAGOMIR
	ESSENTIAL STITCHES BY JERRIE
	WESTERN HOME TRANSPORT
11278	A1 PRECISION ROOFING
	MARIA ESPINOZA
	SOLIS TIRE SHOP
11311	LITTLE TRUCK SALES THE
11332	LA CONCHITA
11336	PERFECT T
11340	ONE STOP MARKET & LIQUOR
11370	ROBERT RAWLS
11378	APRIL SHECKLER
	SHAWN STUNKARD
11385	PALABRA DE FE
11386	L DELEON
11394	ENRIQUE SOLIS
11406	RIGOBERTO ROMERO
11411	QUALITY TIRE

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 2008 (Cont'd)

11416	WATER SUPREME
11428	LAURA RAMOS
11436	INLAND MARKET
11515	HAIR USA

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 2008

17522	ALEXIA KING
	SUNSHINE GARDENS NURSERY
17540	J WILLIAM
17590	MARY GONZALES
17594	GARY HAUFF
17616	ALICIA GONZALEZ
	RUBENS TRUCK TIRES
	Y & J TRANSPORT
17656	RONALD DEJARNETTE
18136	ACTS FOR CHILDREN
18358	JORGE MENDOZA
18382	JUANA GARCIA
18414	JOHNNIE LONG
	LONGS WEB SERVICE
18438	SAL ROMERO
18507	MIKEL ARVIZU
18517	MARGARET DELGADO
18527	GUILLERMO GAMBOA
18537	VERONICA GONZALES
18547	GARYLEE MENDOZA
18557	SALVADOR RAMIREZ
18567	JOEL LEON
18579	OSCAR MORENO
18615	JAIME BARRAZA
18625	OCCUPANT UNKNOWN
18637	GOFF TRUCKING
	KENNETH GOFF
18655	MARIA CRUZ
18665	MARIA CEBREROS
18754	GEORGIA EAST
18765	FLORINDA SALAZAR
18772	MARK BILOKI
18777	JUAN MARDUENO
18789	NOE ALAVEZ
18790	ANNIA RIFE
	JAMES JOHNSON
18813	MARIA HERRERA
18825	OCCUPANT UNKNOWN
18839	RAMON FARIAS
18849	CAMERINA GOMEZ
18869	FERNANDO GUILLEN
18870	COLTON JOINT UNIFIED SCHOOL DST
	CRESTMORE ELEMENTARY SCHOOL
18879	OCCUPANT UNKNOWN
18930	URIEL GONZALEZ
18965	MOHAN ROY
18975	FACUNDO FERNANDEZ
19130	DAVID JOHNSON
19144	RAMON VARGAS
19210	JOHN DELVALLE

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 2008

10731	JORGE VELASQUEZ
10739	FRANCISCO GALVEZ
10746	DANIEL LAS
10749	OCCUPANT UNKNOWN
10756	VICTOR PEREZ
10759	ANGELINA REYES
10769	SARA AVELAR
10770	HOPKINS ENTERPRISES
	PETER HOPKINS
10777	CAROL POPYACK
10793	LISA FERENDO
10803	SCOTT GUTIERREZ
10808	MARJORIE JONES
10813	EULALIO VARELA
10833	OCCUPANT UNKNOWN
10859	RAYMOND ELLITHORPE
10877	ALFRED STELLE
10881	BONNIE JACKSON
10987	ARIZBETH JIMENEZ
11050	COLTON JOINT UNIFIED SCHOOL DISTRICT
	ZIMMERMAN ELEMENTARY SCHOOL
11109	OCCUPANT UNKNOWN
11191	JAYNES BEE PRODUCTS
	ROGER JAYNES
11206	JUAN CARRERA
11244	OCCUPANT UNKNOWN
11266	JOHN MCNEIL
11290	HOWARD BAKER
11797	ANTONIA CAMPOS
11801	SERAFIN RODRIGUEZ
11811	JASON WHITMAN
11819	JORGE SANCHEZ
11841	GILBERT ROSALES
11855	ANIBAL VIVEROS
11861	REYES PEREZ
11871	ARMANDO ADRIANO
11875	DARIO TOVAR

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 2003

10880	PIYI 99 CENTS UP
10884	OCCUPANT UNKNOWN
	SAV A LOT LIMITED
10892	EL NOA NOA BAR
	OCCUPANT UNKNOWN
10896	C & H LIQUORS
	OCCUPANT UNKNOWN
10898	JAIMES SMOG SHOP
	MURAD FAKHOURI
	SMOG CTR TEST ONLY
10974	OCCUPANT UNKNOWN
11034	LORENZO DIAZ
	PRECISION WELDING & FBRCTN
11046	OCCUPANT UNKNOWN
11058	MAX RANGINGISAN
11100	MAX RANGINGISAN
11108	MARIA GASTELUM
11118	OCCUPANT UNKNOWN
11138	RAFAEL CARRILLO
11148	OCCUPANT UNKNOWN
11150	FELIPE HERRERA
11151	SCOTT FOSTER
11161	OCCUPANT UNKNOWN
11166	JORGE ELIZONDO
11169	GOLDEN COAST TRUCKING
11174	ROJELIO GUERRARO
11180	PAMELA ELSEA
11188	OCCUPANT UNKNOWN
11205	ESSENTIAL STITCHES BY JERRIE
	OCCUPANT UNKNOWN
	RV TRANSPORT SHOP
11260	OCCUPANT UNKNOWN
11278	A1 PRECISION ROOFING
	ADALBERTO CANALES
11311	BUSTAMANTE INSURANCE
11332	OCCUPANT UNKNOWN
11336	OCCUPANT UNKNOWN
	PERFECT T
11337	LA CONCHITA BAKERY
11340	AJAIB JHAJ
	ONE STOP JR MARKET & LIQUOR
11370	OCCUPANT UNKNOWN
11378	BOBETTE WARE
	PEGGY RUFFNER
11385	DE PALABRA
	PALABRA DE FE
11386	OCCUPANT UNKNOWN
11411	MEXICALI TIRE SHOP
	OCCUPANT UNKNOWN
	U HAUL CO

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 2003 (Cont'd)

11416	JAMIE HERNANDEZ
11428	PAUL WILLIAMS
11436	INLAND MARKET
11441	OCCUPANT UNKNOWN
	SMOG & TUNE
11510	OCCUPANT UNKNOWN
11511	MUSICA LATINA BLOOMINGTON
	OLIVIAS JEWELRY
	R STEREOS
	VASQUEZ CARNICERIA
	VASQUEZ MEAT MARKET
11515	CHRIS INCOME TAX & BKPNG SRVC
	CHRISS PROFESSIONAL SERVICS
	FREDERICO MONTOYA
	LINDA CASTILLO
	MGM BURGERS

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 2003

17522	JACK WINTERS
17540	J WILLIAM
17590	MARY GONZALES
	OCCUPANT UNKNOWN
17594	GARY HAUFF
17616	ANY ALLOY
	DANIELLE MELTON
17656	RONALD DEJARNETTE
18136	ACTS FOR CHILDREN
18212	CHRISTMAS TREE LANE
	DALE FARNWORTH
18358	JAMES RIDDLE
	SIERRA RAIL SERVICE
18382	JOSEFINA SANCHEZ
18414	JOHNNIE LONG
18438	JERRY REYNOLDS
18507	MIKEL ARVIZU
18517	MARGARET DELGADO
18527	OCCUPANT UNKNOWN
18547	GARYLEE MENDOZA
18557	SHERMAN SHELD
18567	JOEL LEON
18579	HARRY MCDONALD
18604	LIBRERIA DEL PUEBLO COOL ZONE
	LIBRERIA DEL PUEBLO TBC PRGRM
	OCCUPANT UNKNOWN
18615	CHAD WEAVER
18625	OCCUPANT UNKNOWN
18637	KENNETH GOFF
18655	IDUVINA JACUINDE
18665	REMIJIO LOPEZ
18754	GEORGIA EAST
	J & B CONCRETE PUMPING SERVICE
18765	LEO CLAYTON
18772	MARK BILOKI
18777	OCCUPANT UNKNOWN
18789	ANGEL ALAVEZ
18790	OCCUPANT UNKNOWN
18813	IVAN ORNELAS
18825	ALICIA LOPEZ
18839	RAMON FARIAS
18869	JOSEFINA VELENZUELA
18870	COLTON JNT UNIFIED SCHOOL DIST
	COLTON JOINT UNIFD SCHOOL DST
	CRESTMORE ELEMENTARY SCHOOL
18879	CRYSTAL LYNCH
18930	OCCUPANT UNKNOWN
18965	MOHAN ROY
18975	FACUNDO FERNANDEZ
19130	DAVID JOHNSON

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 2003 (Cont'd)

19144 RAMON VARGAS
19210 RONALD GARCIA

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 2003

10731	ROBERTO CARDENAS
10739	FRANCISCO GALVEZ
10746	W LASDANIEL
10749	ISABEL FELIX
10756	BILL GUSTASON
10759	ALBERTO SANTOS
10769	JOSE ALDAMA
10770	HOPKINS ENTERPRISES
	PETER HOPKINS
10777	CAROL POPYACK
10793	CHARLES ZUPKOFFKA
10803	MILDRED WILLAMS
10813	VICTOR WILLIAMS
10859	RAYMOND ELLITHORPE
10877	OCCUPANT UNKNOWN
10881	BONNIE JACKSON
10987	ALEJANDRO ESQUIVEL
11050	COLTON JNT UNIFIED SCHOOL DIST
	OCCUPANT UNKNOWN
11109	GEORGE WALTERS
11191	JAYNES BEE PRODUCTS
	ROGER JAYNES
11206	JUAN CARRERA
11244	HARRY BERGER
11266	CHU ZOU
	USBEE INC
11290	HOWARD BAKER
11797	RUBY BAEZ
11801	ROBERT HOLLENBACH
11811	CARLOS BANDA
11819	ROGELIO DAZA
11841	GILBERT ROSALES
11855	OMAR ALVAREZ
11861	REYES PEREZ
11871	THERESA GUTIERREZ
11875	DARIO TOVAR

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 1999

10880	COUNTRY VIDEO
10884	SAV A LOT LIMITED
10896	C & H LIQUORS
10898	CEDAR AND SANTA ANA STATION AND AUTO REPAIR
10930	YOUN MYUNG
10974	EVAN CASTANEDA
	KARRAS TELEVISION SHOP
10982	FIESTA BAKERY
11008	GINA DUONG
	OCCUPANT UNKNOWN
11034	PRECISION WELDING & FABRICATION
11058	NIELSON ASSA
	OCCUPANT UNKNOWN
11066	GEORGE WATERS
11134	ARMANDO HILDALGO
11138	EZEQUIEL GONZALEZ
	RICARDO MAGALLANEZ
11150	HERCULANO OLVERA
11151	SCOTT FOSTER
11166	RAUL ENRIQUEZ
11169	GOLDEN COAST TRUCKING FAX
11171	GUILLERMO LOPEZ
11174	MIKE MARSHMAN
11180	MELVIN ELSEA
11205	AURORA DRAGOMIR
11278	VICTOR MARADIAGA
11311	BLOOMINGTON RECYCLER
	BUSTAMANTE INSURANCE
	R C TOWING TRANSPORT & RECOVERY
	TIGER AUTO SALES THE
11332	LACONCHITA
11336	OCCUPANT UNKNOWN
	PERFECT T THE
11340	ONE STOP JR MARKET & LIQUOR
11370	APRIL SHECKLER
	ROBERT RAWLS
11378	SHAWN STUNKARD
11385	BLOOMINGTON LIFE CENTER FIRST ASSEMBLY OF GOD
11386	L DELEON
11394	ENRIQUE SOLIS
11406	RIGOBERTO ROMERO
11416	JOYS THRIFT GIFT & ANTIQUES
	SUZETT
11428	LEONARDA OROZCO
11436	INLAND MARKET
11441	4 AS SMOG & TUNE
	OCCUPANT UNKNOWN
11510	ARCO AM PM
11515	CHRIS INCOME TAX & BOOKKEEPING SERVICE
	HAIR U S A

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 1999 (Cont'd)

11515 MGM BURGERS
OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 1999

17522	ALEXIA KING
17540	J WILLIAM
17590	MARY GONZALES
17594	GARY HAUFF
	JAS MAURER
17616	ALICIA GONZALEZ
17656	RONALD DEJARNETTE
18136	ACTION SCHOOL
	ACTS
18358	SIERRA RAIL SERVICE
	VICTOR MENDOZA
18400	KESSLER LINDA A PARK
18414	JOHNNIE LONG
18438	SAL ROMERO
18507	OCCUPANT UNKNOWN
18517	MARGARET DELGADO
18519	OCCUPANT UNKNOWN
18527	GUILLERMO GAMBOA
18537	VERONICA GONZALES
18547	GARY MENDOZA
18557	SALVADOR RAMIREZ
18567	JOEL LEON
	MIRNA MARTINEZ
18579	OCCUPANT UNKNOWN
	OSCAR MORENO
18615	NOEMI IBARRA
18637	KENNETH GOFF
18655	MARIA CRUZ
18665	MARIA CEBREROS
18754	GEORGIA EAST
	J & B CONCRETE PUMPING SERVICE
18765	LEO CLAYTON
18772	MARK BILOKI
18777	JUAN MARDUENO
18789	NOE ALAVEZ
18790	ANNIA RIFE
	JAMES JOHNSON
	OCCUPANT UNKNOWN
18839	RAMON FARIAS
18849	CAMERINA GOMEZ
18869	FERNANDO GUILLEN
18870	COLTON JNT UNIFIED SCHOOL DISTRICT INDIVIDUAL SCHOOLS
18879	MICHAEL RUBIO
	OCCUPANT UNKNOWN
18930	URIEL GONZALEZ
18950	OCCUPANT UNKNOWN
18965	MOHAN ROY
18975	FACUNDO FERNANDEZ
19130	CHRIS JOHNSON
19144	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 1999 (Cont'd)

19144 RAMON VARGAS
19210 KATHERINE RIVAS

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 1999

10731	JORGE VELASQUEZ
10739	ARNOLDO MAGANA
	FRANCISCO GALVEZ
10746	DANIEL LAS
10749	EURIEL FELIX
10756	JESUS BORBOA
10759	ANGELINA REYES
10769	OCCUPANT UNKNOWN
	SARA AVELAR
10770	HOPKINS ENTERPRISES
	PETER HOPKINS
10777	CAROL POPYACK
10793	CHARLES ZUPKOFSKA
10803	ADOLFO SAENZ
	OCCUPANT UNKNOWN
10808	MARJORIE JONES
	OCCUPANT UNKNOWN
10813	EULALIO VARELA
10859	RAYMOND ELLITHORPE
10877	ALFRED STELLE
10881	BONNIE JACKSON
10923	OCCUPANT UNKNOWN
10987	ALBERTO IBARRA
11050	COLTON JNT UNIFIED SCHOOL DISTRICT INDIVIDUAL SCHOOLS
11109	OCCUPANT UNKNOWN
11141	OCCUPANT UNKNOWN
11189	OCCUPANT UNKNOWN
11191	ROGER JAYNES
11206	JUAN CARRERA
11244	HARRY BERGER
11266	JOHN MCNEIL
11290	HOWARD BAKER
11797	ANTONIA CAMPOS
11801	SERAFIN RODRIGUEZ
11811	JASON WHITMAN
11819	JORGE SANCHEZ
11841	GILBERT ROSALES
11855	ANIBAL VIVEROS
11861	REYES PEREZ
11875	DARIO TOVAR

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 1995

10880	COUNTRY VIDEO
10890	ANGIES BEAUTY SALON
10892	OAK TREE LOUNGE
10896	C & H LIQUORS
10898	BLOOMINGTON SHELL
	U HAUL CO
10974	KARRAS TELEVISION SHOP
10982	FIESTA BAKERY
11100	CHRISTIAN TEMPLE
11118	JIMS PIPELINE SVC INC
11138	FLOWERS, YVONNE
11150	GARCIA, ANITA M
11161	BARGER, RONALD
11166	MONTAGUE, GEORGE J
11171	VILLANEDA, RALPH
11174	OCCUPANT UNKNOWNN
11180	FRIEND, KENNETH
11188	GLEASON, PHILLIP
11205	GUINAUGH, CYNTHIA
11260	PALUMBO, JACK
11278	ALL IN ONE PLUMBING
	ATOM PLUMBING ALL IN ONE
	ATOM ROOTER
11332	PRECISION TV
11336	PERFECT T
11340	ONE STOP JR MARKET & LIQUOR
11385	FIRST ASSEMBLY OF GOD
11406	LEAVENS, CHARLES L
11411	MC NASTY MOTORS
11416	AGUAYO TIRE SHOP
	JOYS THRIFT GIFT & ANTIQUES
11436	INLAND MARKET
11441	SMOG & TUNE
11510	AM PM RUBA ENTERPRISES
11511	OCCUPANT UNKNOWNN
	THOMAS BROTHERS MARKET
11515	CARNICERIA VASQUEZ
	MGM BURGERS

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 1995

17590	OCCUPANT UNKNOWNN
17594	MAURER, JAMES R
17616	MELTON, GEORGE H
17656	PORTER, ROBERT A
18136	ACTS
18358	RIDDLE, JAMES
18382	MEANS, GORDON E
18414	LONG, JOHNNIE R
18438	REYNOLDS, JERRY L
	SHEPHERD, F
18527	LOPEZ, RAQUEL
18537	GRAY, SUSAN K
18547	MENDOZA, JULIAN
18557	ALBERT, LEON M
18567	CHACON, ROSA
18579	MCDONALD, HARRY L
18615	OCCUPANT UNKNOWNN
18625	ARROYO, ALFREDO P
18637	HUDAWAY, ROBERT C
18655	OCCUPANT UNKNOWNN
18665	OCCUPANT UNKNOWNN
18754	J & B CONCRETE PUMPING SVC
18765	ALWAGNER, LINDA
18772	BILOKI, MARK W
18777	MORALES, V
18789	OCCUPANT UNKNOWNN
18790	JOHNSON, JAMES
18813	SEGARRA, OSCAR
18825	LOPEZ, ALICIA C
18839	FARIAS, RAMON
18849	RUSSELL, DONALD O
18869	OCCUPANT UNKNOWNN
18870	CRESTMORE ELEMENTARY SCHOOL
18879	RUBIO, MICHAEL
18930	ANETRINI, V P
18950	VANDYKE, SANDI
18965	OCCUPANT UNKNOWNN
19130	JOHNSON, DAVID A
19144	GIRTON, ANITA E
19210	DURHAM, JAMES S

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 1995

10731	OCCUPANT UNKNOWNN
10739	OCCUPANT UNKNOWNN
10746	LASDANIEL, W
10749	OCCUPANT UNKNOWNN
10756	OCCUPANT UNKNOWNN
10759	TURNER, MARTHA
10769	COBB, NELLIE R
10770	HOPKINS, VIOLA
10777	POPYACK, CAROL J
10793	ZUPKOFFKA, CHARLES
10803	CENICEROS, APRYL
10813	WILLIAMS, VICTOR F
10859	ROGERS, EVERETT
10877	OCCUPANT UNKNOWNN
10881	JACKSON, DONALD O
10987	ARIAS, ROBERT G
11050	WALTER ZIMMERMAN ELEM SCHOOL
11109	OCCUPANT UNKNOWNN
11189	OCCUPANT UNKNOWNN
11191	JAYNES, ROGER D
11244	OCCUPANT UNKNOWNN
11266	SAENZ, DORIS E
11290	RAVESSOUD, FERNAND A
11797	OCHOA, M
11801	DANIELS, ANGELA
11811	MACEDO, ARMANDO
11819	BELLAMY, RONALD J
11841	SILVA, EVA
11861	PEREZ, REYES
11871	GUTIERREZ, THERESA M
11875	VARELA, LUIS

Target Street	Cross Street	Source
✓	-	Cole Information Services

CEDAR AVE 1992

10880	COUNTRY VIDEO
10884	BENS MARKET
	GAMMAS THRIFT STORE
10890	EL GEORGE STYLING
10892	OAK TREE LOUNGE
10896	C&H LIQUORS
10898	BLOOMINGTON SHELL
10974	KARRAS TV SHOP
10982	FIESTA BAKERY
11100	CHRISTIAN TEMPLE
11118	JIMS PIPELINE SERV
11138	POUND, JAMES W
11161	IRON HORSE BOARDING
11169	BROWN J&ASC CONST
11171	TCS DOGTOWN HAVEN
11188	GLEASON, PHILLIP
11278	ALL IN ONE BACKHOE
11332	PRECISION TV
11336	PERFECT T THE
11340	ONE STOP JR MARKET
11378	CHIVERTON, JACK
11385	FIRST ASSEMBLY GOD
11406	LEAVENS, CHARLES L
11411	MCNASTY MOTORS
11416	ECONO WASH LAUNDRMT
11436	INLAND MKT
11441	SMOG&TUNE
11510	A M P M RUBA ENTPRS
11511	CARNICERIA, VASQUEZ
	THOMAS BROS MKT

Target Street	Cross Street	Source
-	✓	Cole Information Services

JURUPA AVE 1992

17656	DEJARNETTE, RONALD D
18136	A C T S
18358	FITZPATRICK, MIKE
18382	MEANS, GORDON E
18414	LONG, JOHNNIE R
18438	REYNOLDS, JERRY L
	SHEPHERD, F
18557	ALBERT, LEON M
18604	NEIGHBORHD SERV CTR
18754	J&B CONCRETE PUMPNG
18772	BILOKI, JAY
18777	MORALES, V
18870	COLTON SC CRESTMORE
18879	RUBIO, MICHAEL
18965	ROY, MOHAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

LINDEN AVE 1992

10731	RUVOLO, FRANK
10739	JONES, HELEN J
10770	HOPKINS ENTERPRISES
	HOPKINS, VIOLA
10859	ROGERS, EVERETT
10881	JACKSON, DONALD O
10987	ARIAS, ROBERT G
11050	COLTON SC ZIMMERMAN
11109	HOWELL, DONAL A SR
11191	JAYNES, ROGER D

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CEDAR AVE 1985

11034	XXXX	00	
11046	VERBURG JACK	877-3614	+5
11100	XXXX	00	
11108	XXXX	00	
11113	XXXX	00	
11118	JIMS PIPELINE SERV	877-2637	
11134	XXXX	00	
11138	POUND JAS W	877-5123	8
11150	XXXX	00	
11161	COOPER EMMA	877-2996	8
	HAWLEY M M	877-2996	2
11166	XXXX	00	
11174	GOSS GEO	877-6225	4
11180	XXXX	00	
11188	HARRIS ISABEL	877-0427	+5
11205	GRISHAM BERT	877-5393	8
11278	BENZ MOBILE HOME	877-5549	+5
11311	S E PIPELINE CONSTR	877-2625	
11332	XXXX	00	
11340	ONE STOP JR MARKET	877-6020	3
11362	COTTON JAS E	877-2744	
11370	THE BEST LITTLE OLD	877-2214	+5

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

JURUPA AVE 1985

18438	REYNOLDS JERRY L	877-3126	0
18507	XXXX	00	
18527	XXXX	00	
18547	MENDOZA JULIAN H	877-4715	
18557	ALBERT LEON M	877-4600	
18567	XXXX	00	
18579	BROMILOW DONALD E	877-6616	2
18600	XXXX	00	
18604	NEIGHBORHD SERV CTR	877-2523	7
18615	MUSOLINO ANTHONY V	877-3178	8
18625	XXXX	00	
18637	XXXX	00	
18640	XXXX	00	
18655	POPE WAYNE L	877-5165	6
18665	BORING JOHN O	877-2997	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LINDEN AVE 1985

10813	GUERRA MILDRED	877-2656	
10859	ROGERS EVERETT	877-0545	7
	ROGERS JODY	877-4506	0
10877	CALDWELL RICHARD E	877-5067	3
10881	JACKSON D O	877-1425	1
10987	FITHTAN DONALD J	877-3949	2
11050	COLTON SC ELM ZMRMN	824-4246	9
11109	XXXX	00	
11191	JAYNES ROGER D	877-3431	9
11290	RAVESSOUD FERNAND	829-8484	2
11855	XXXX	00	
*	8 BUS 88 RES	8 NEW	

+LINDEN AV 92345
HESPERIA

15326	GRIMM ROY	948-3740	+5
*	0 BUS 1 RES	1 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CEDAR AVE 1980

11034	XXXX	00
11046	CHIDESTER CLARA L	877-5187 9
11100*	PENTECOSTAL TEMPLE	877-3250
11108	XXXX	00
11113	XXXX	00
11118*	JIMS PIPELINE SERV	877-2637
*	POUND JIM	877-2637
11134*	AMENDT OIL SERV STA	877-9879+0
11138	POUND JAS W	877-5123 8
11150	BARNES HOPE	877-2990 7
	DINICOLA VIRGINIA	877-2990 8
11151½	CAMPBELL DAVID L	877-5139 +0
11161	COOPER K A	877-2996 8
11166	KINGSLEY ED	877-5974 7
11171	BURT BETTY L	877-4181 +0
11174	WEIKEL HAROLD E	877-2524 +0
11180	XXXX	00
11188	THOMPSON ROSIE	877-1862 8
11205	GRISHAM BERT	877-5393 8
11278	HARDWICK B K	877-2241 +0
	WOOD A C	877-2241 +0
11311*	S E PIPE LINE CNSTR	877-2625
11332	XXXX	00
11340*	STOP N GO MARKET	877-9826 6
11362	COTTON JAS E	877-2744
11370	XXXX	00

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

JURUPA AVE 1980

17978	MARKHAM JOSEPH T	244-2651	
18003	WATKINS C H	244-9022	3
18055	STANIFER CHARLES D	244-6492	7
18161	WILKE L B	244-9557	+0
18543	XXXX	00	
18561	SOSNOWSKI DANESE	244-8562	+0
18580	QUIHUIS FRANK S	244-5198	8
18639	STORY TERRY L	244-6615	9
18665	BLACKMORE DWIGHT	244-3971	8
18672	MURPHY GLORIA	244-2310	9
18679	XXXX	00	
18703	DRISKILL LARRY E	244-3369	+0
18739	XXXX	00	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LINDEN AVE 1980

10793*	AIR WEST AIR CNDG	877-1390	8
*	AIR WEST REFRIGRTN	877-1390	
10803	MAXEY MAUDIE	877-4919	
10808	XXXX	00	
10813	GUERRA MILDRED	877-2656	
10859	ROGERS EVERETT	877-0545	7
	ROGERS JODY	877-4506	+0
11050*	COLTON JNT SCH ZMMR	824-4246	9
11109	XXXX	00	
11191	JAYNES ROGER D	877-3431	9
11206	XXXX	00	
11266	XXXX	00	
*	9 BUS 149 RES	26 NEW	

LINDEN 92345 HESPERIA

17595	RAU JAMES W	244-3239	3
17598	COX DONALD	244-9271	9
17625	ROBINSON EARL S	244-4957	9
17630	MIXON KENNETH J	244-7073	+0
17680	DORAN LAWRENCE	244-4633	7

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CEDAR AVE 1975

11008	FINNEGAN CHAS	877-4605+5
11034	GIBSON FREDA	877-0261
	GIBSON JOHN A	877-0261

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CEDAR AVE 1975

```
..CEDAR AV                92316 CONT..
11100*PENTECOSTAL TEMPLE 877-3250
11108 FOSDICK FRANK      877-3502 3
11113  XXXX              00
11118*JIMS PIPELINE SERV 877-2637
      *POUND JIM         877-2637
11134*HICKS JOHN RCKT STN877-9832 3
11138*POUND C W BCKHOE SV877-1291+5
11150 KISSINGER WANDA    877-4481+5
11151  XXXX              00
11161 BURT BETTY         877-4580+5
      BURT DONALD H      877-4580+5
11166  XXXX              00
11174 BLEEKER VERNON M   877-0448
11180 BERRY JOHN R       877-2873
11188 PICKETT NELDA      877-3128
11205 MARCHUS C E        877-2489
11278*CAMPBELL PAT RLTY  877-4480 4
11311*S E PIPE LINE CNSTR877-2625
11332  XXXX              00
11340*E Z MARKETS INC 4   877-2331
11362 COTTON JAS E       877-2744
11370 BUSHNELL WALTER L  877-1021+5
```

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

JURUPA AVE 1975

18414	GREGG RAY	877-4061
18507	JOHNSON JAS J	877-2650
18527	XXXX	00
18547	MENDOZA LYDIA	877-4715
	MENDOZA ROSIE	877-4715
18557	ALBERT LEON M	877-4600
18567	ALLEN MARY L	877-3416 4
18579	BROMILOW DONALD E	877-2904
18600	XXXX	00
18604*	DEPENDNCY PREV CMSN	877-2523 3
18625	LINDSAY G THOMAS	877-3255+5
18637	HADAWAY THOS M	877-4105
18640	BRISTER JESSE	877-0142+5
18655	HARRISON DENNIS R	877-2695 4
18665	BORING JOHN O	877-2997
18772	XXXX	00

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LINDEN AVE 1975

```
10803 MAXEY MAUDIE          877-4919
10808 JONES WM L            877-2674
10813 GUERRA MILDRED        877-2656
10859 JUDY HERBERT P        877-1754
10987 HARCROW HAROLD        877-4486
11050*TITLE 1               877-4350 4
     *ZIMMERMAN W ELEM SC877-1552
11109 HEYDENREICH JOHN      877-4138 4
11191  XXXX                 00
11206 GOFF J S              877-4293+5
      GOFF KEN              877-2512+5
11266 SAENZ ROBT G          877-4889+5
     *  13 BUS  129 RES     35 NEW
```

LINDEN 92345 HESPERIA

```
17595 RAU JAMES W           244-3239 3
17598 ROBERTS NORRIS J      244-4519
17625 CRUMBY HOWARD J       244-4947+5
17630  XXXX                 00
17819 JUSTUS RUBERT M       244-5839+5
```

Cedar Avenue
Cedar Avenue/ Jurupa Avenue
Bloomington, CA 92316

Inquiry Number: 4111514.9
October 22, 2014

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2014 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Date EDR Searched Historical Sources:

Aerial Photography October 22, 2014

Target Property:

Cedar Avenue/ Jurupa Avenue

Bloomington, CA 92316

Year	***Scale***	***Details***	***Source***
1938	Aerial Photograph. Scale: 1"=500'	Flight Year: 1938	USGS
1948	Aerial Photograph. Scale: 1"=500'	Flight Year: 1948	USGS
1953	Aerial Photograph. Scale: 1"=500'	Flight Year: 1953	Southwestern
1966	Aerial Photograph. Scale: 1"=500'	Flight Year: 1966	USGS
1977	Aerial Photograph. Scale: 1"=500'	Flight Year: 1977	Teledyne
1985	Aerial Photograph. Scale: 1"=500'	Flight Year: 1985	USGS
1990	Aerial Photograph. Scale: 1"=500'	Flight Year: 1990	USGS
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP

INQUIRY #: 4111514.9
YEAR: 1938
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1948
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1953
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1966
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1977
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1985
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1990
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 1994
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4111514.9
YEAR: 2012
= 500'
N
EDR

APPENDIX C

HMC /NER/OPERATOR QUESTIONNAIRE

Site: 11134 Cedar Ave. Bloomington, CA 92316

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operator*s are requested to provide the following information (if available) to the *environmental professional*.
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

Please list all addresses currently and previously used for the Site.

11134 Cedar Ave. Bloomington, CA 92316

(2) Please list the providers of the following utilities for the Site:

Water: West Valley Water District

Natural Gas or Propane: Southern California Gas Company

Electricity: Edison

Sanitary Waste (or Septic Tank?): Septic Tank

Are there any groundwater wells at the Site?

☑ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site.

Home rentals

(5) Are you aware of previous uses of the Site?

☑ No ☐ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☑ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☑ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☑ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☑ No ☐ Yes (if yes, please describe)

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☑ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☑ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☑ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☑ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☑ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☑ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☑ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☑ No ☐ Yes (if yes, please describe)

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☑ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

☑ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☑ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☑ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☑ No ☐ Yes (if yes, please describe)

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

NONE

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: Tomas Araujo

Signature [illegible] Date October 24, 2014

Title Owner

Please describe the length of and nature of your experience/knowledge of the Site.

HMC
HAZARD MANAGEMENT CONSULTING

ESA OWNER/OPERATOR QUESTIONNAIRE

Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site:

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operators* are requested to provide the following information (if available) to the *environmental professional.*
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.
11191 Linden Ave, Bloomington Ca. 92316
18574 Jurupa Ave, " " "
11219 Linden Ave, " " "
18606 Jurupa Ave, " " "

(2) Please list the providers of the following utilities for the Site:

Water:	West Valley Water Company
Natural Gas or Propane:	The Gas Company
Electricity:	Southern Calif. Edison
Sanitary Waste (or Septic Tank?):	Septic Tank

(3) Are there any groundwater wells at the Site?

☑ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site.
utilized for residence and storage of equipment in warehouse. Also goats graze on our other parcels of property to the south of our residence

(5) Are you aware of previous uses of the Site?

☑ No ☐ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☑ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☑ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☑ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☑ No ☐ Yes (if yes, please describe)

to the best of our knowledge

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☑ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☑ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☑ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☑ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☑ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☑ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☑ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☑ No ☐ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☑ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site? NO

☑ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☑ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☑ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☑ No ☐ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: Mary Rose Jaynes

Signature: Mary Rose Jaynes Date: 10-30-14

Title: Co-owner of properties

Please describe the length of and nature of your experience/knowledge of the Site.

To: Jeremy Mape
(Chris Morrell)

FAX # 949-~~256-2326~~ 720-3790

6 pages including this one

From: Ami Deckel

Re: Bloomington property
Cedar Ave

HMC

ESA OWNER/OPERATOR QUESTIONNAIRE
Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site:

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operators* are requested to provide the following information (if available) to the *environmental professional*.
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.
11260 Cedar Ave and 18640 Jurupa Ave Bloomington, CA 92316
Two rental houses - empty land.

(2) Please list the providers of the following utilities for the Site:

Water:	✓
Natural Gas or Propane:	
Electricity:	✓
Sanitary Waste (or Septic Tank?):	septic Tank

(3) Are there any groundwater wells at the Site?

☒ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site.
Two ~~old~~ rental houses. The rest is empty land.

Owner/Operator Questionnaire
Page 2

(5) Are you aware of previous uses of the Site?

☐ No ☒ Yes (if yes, please describe)

orange grove -

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☒ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☒ No ☐ Yes (if yes, please describe)

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☒ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☒ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☒ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☒ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☒ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☒ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☒ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☒ No ☐ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☒ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

☒ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☒ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

Until 1985 the site used to be an orange grove - after 1985 when I bought the site for safety reasons we abatted the grove (very old and no productive) and since then the land was empty beside the tenants who reside in the two houses -

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: Ami E. Deckel

Signature: A. E. Deckel Date: 10-23-14

Title: Owner, Trustee

Please describe the length of and nature of your experience/knowledge of the Site.

HMC
HAZARD MANAGEMENT CONSULTING

ESA OWNER/OPERATOR QUESTIONNAIRE

Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site:

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operator*s are requested to provide the following information (if available) to the *environmental professional.*
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.

(2) Please list the providers of the following utilities for the Site:

Water:	Rialto Water Company
Natural Gas or Propane:	The Gas Company
Electricity:	Edison Company
Sanitary Waste (or Septic Tank?):	Burrtec waste

(3) Are there any groundwater wells at the Site?

☑ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site.

(5) Are you aware of previous uses of the Site?

☒ No ☐ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☒ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☒ No ☐ Yes (if yes, please describe)

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☒ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☒ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☑ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☑ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☑ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☑ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☑ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☑ No ☐ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☑ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

☒ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☒ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: Herculan Tello

Signature: [illegible] Date: NOV 13, 2014

Title: Owner of record.

Please describe the length of and nature of your experience/knowledge of the Site.

ESA OWNER/OPERATOR QUESTIONNAIRE
Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site: 11138 Cedar ave Bloomington CA 92316

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operators* are requested to provide the following information (if available) to the *environmental professional.*
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.

11138 Cedar ave Bloomington CA 92316

(2) Please list the providers of the following utilities for the Site:

Water: West Valley water District	
Natural Gas or Propane: Southern California GAS Company	
Electricity: Edison	
Sanitary Waste (or Septic Tank?): Septic Tank	

(3) Are there any groundwater wells at the Site?

No ✓ Yes (if yes, please describe)

(5) Are you aware of previous uses of the Site?

No ✓ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

No ✓ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

No ✓ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

No ✓ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities,

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

No ✓ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

No ✓ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

No ✓ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

No ✓ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

No ✓ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

No ✓ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

No ✓ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

No ✓ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

No ✓ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

No ✓ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

No ✓ Yes (if yes, please describe and provide dates)

No ✓ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: Juan Estudillo

Signature: Juan Estudillo Date: Oct. 29/2014

Title: Owner

Please describe the length of and nature of your experience/knowledge of the Site.

HMC
HAZARD MANAGEMENT CONSULTING

ESA OWNER/OPERATOR QUESTIONNAIRE

Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site:

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operator*s are requested to provide the following information (if available) to the *environmental professional.*
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.

AS PER AGREEMENT

(2) Please list the providers of the following utilities for the Site:

Water:	WEST VALLEY WATER DISTRICT
Natural Gas or Propane:	GAS CO.
Electricity:	EDISON
Sanitary Waste (or Septic Tank?):	SEPTIC

(3) Are there any groundwater wells at the Site?

☒ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site. RESIDENTIAL

(5) Are you aware of previous uses of the Site?

☒ No ☐ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☒ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☒ No ☐ Yes (if yes, please describe)

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☒ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☒ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☒ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☒ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☒ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☒ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☒ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☒ No ☐ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☒ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

☒ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☒ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

THERE IS AN UNDERGROUND TANK IN THE ORCHARD A11109 LINDEN ONLY FOR THE COLLECTION OF RAINWATER. IT HAS NEVER BEEN USED.

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: BETTY WALTERS

Signature: Betty Walters Date: 10/25/14

Title: OWNER

Please describe the length of and nature of your experience/knowledge of the Site.

HMC
HAZARD MANAGEMENT CONSULTING

ESA OWNER/OPERATOR QUESTIONNAIRE

Phase I Environmental Site Assessment
ASTM Standard 1527-13

Site:

In order to assist the purchaser qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *Owner/Operator*s are requested to provide the following information (if available) to the *environmental professional.*
(Note: double-click boxes to check or uncheck)

Current Site Condition and Site History

(1) Please list all addresses currently and previously used for the Site.

AS PER AGREEMENT

(2) Please list the providers of the following utilities for the Site:

Water:	WEST VALLEY WATER DISTRICT
Natural Gas or Propane:	GAS CO.
Electricity:	EDISON
Sanitary Waste (or Septic Tank?):	SEPTIC

(3) Are there any groundwater wells at the Site?

☒ No ☐ Yes (if yes, please describe)

(4) Please describe the current use of the Site. RESIDENTIAL

(5) Are you aware of previous uses of the Site?

☒ No ☐ Yes (if yes, please describe)

(6) Can you provide contact information for previous owners, operators or occupants of the Site?

☒ No ☐ Yes (if yes, please list)

(7) To the best of your knowledge, has the Site been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe)

(8) To the best of your knowledge, have any adjoining properties been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☒ No ☐ Yes (if yes, please describe and provide name and location)

Chemical and Hazardous Materials

(9) Other than routine janitorial and office supplies in usual and customary quantities, are chemicals, petroleum products or hazardous chemicals/substances used or stored on Site, now or previously?

☒ No ☐ Yes (if yes, please describe)

(10) Are liquid or solid wastes generated at the Site other than general municipal waste now or previously?

☒ No ☐ Yes (if yes, please describe)

(11) Are there or have there been wastewater disposal or treatment processes at the Site from equipment washdown or industrial operations?

☒ No ☐ Yes (if yes, please describe, including any pits, sumps, ponds, dry wells, etc.)

(12) Are there or have there been any electrical transformers, capacitors, ballasts, or hydraulic equipment in use at the Site? Have there been leaks? Are there records indicating the presence or absence of PCBs?

☒ No ☐ Yes (if yes, please describe as appropriate)

(13) Do you know of spills or other chemical releases that have taken place at the Site?

☒ No ☐ Yes (if yes, please describe)

(14) Has fill or waste soil been brought onto the Site?

☒ No ☐ Yes (if yes, please describe source of origin if available)

(15) To the best of your knowledge, is or has there been any significantly stained or discolored soil on the Site?

☒ No ☐ Yes (if yes, please describe)

(16) Do you know of any environmental cleanups that have taken place at the *Site*?

☒ No ☐ Yes (if yes, please describe)

(17) Do you know of any adverse environmental conditions or cleanups that have taken place at the neighboring properties?

☒ No ☐ Yes (if yes, please describe)

, Administrative Action, Violation Notices

(18) To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site?

☒ No ☐ Yes (if yes, please describe)

(19) Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

☒ No ☐ Yes (if yes, please describe)

(20) Do you know of any current or previous notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

☒ No ☐ Yes (if yes, please describe)

(21) Are you aware of any environmental cleanup liens against the Site that are filed or recorded under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe and provide dates)

(22) Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes (if yes, please describe)

Additional and Supportive Information

Please indicate and provide any other knowledge, or documentation with the Site that may be pertinent to the *environmental professional* (for example, copies of any available prior environmental site assessment **reports**, documents, correspondence, etc., concerning the Site and its environmental condition) and any environmental **permits** such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks, especially in support of "yes" answers above.

THERE IS AN UNDERGROUND TANK IN THE ORCHARD A11109 LINDEN ONLY FOR THE COLLECTION OF RAINWATER. IT HAS NEVER BEEN USED.

Thank you very much for your cooperation.

This questionnaire was completed by:

Name: BETTY WALTERS

Signature: Betty Walters Date: 10/25/14

Title: OWNER

Please describe the length of and nature of your experience/knowledge of the Site.

SAN BERNARDINO COUNTY FIRE DEPARTMENT

COUNTY OF SAN BERNARDINO

OFFICE OF THE FIRE MARSHAL
HAZARDOUS MATERIALS DIVISION
620 South "E" Street • San Bernardino, CA 92415-0153
(909) 386-8401 • Fax (909) 386-8460

MARK A. HARTWIG
Fire Chief/Fire Warden

November 4, 2014

14102201 Bloomington Ral HMC

HMC
211 WEST AVENUE CORDOBO
SAN CLEMENTE, CA 92672

ATTENTION: **MARK COUSINEAU**

SUBJECT: **CERTIFIED RECORD SEARCH FINDINGS**
11134, 11138, 11150, 11166, 11174, 11188, 11260 CEDAR AVENUE, BLOOMINGTON, CALIFORNIA
11109, 11141, 11191, 11219 LINDEN AVENUE, BLOOMINGTON, CALIFORNIA
18574 &18606 JURUPA AVENUE, BLOOMINGTON, CALIFORNIA
APN: 0257-091-07-0000, 0257-091-11-0000, 0257-091-14-0000, 0257-091-15-0000, 0257-091-19-0000, 0257-091-20-0000, 0257-091-23-0000, 0257-091-25-0000, 0257-091-26-0000, 0257-091-28-0000, 0257-091-29-0000, 0257-091-30-0000, 0257-091-32-0000, 0257-091-33-0000

This is to confirm that the San Bernardino County Hazardous Materials Division has identified records that may pertain to the subject site, as described in your request for records search.

The file(s) shown below have been retrieved for review. If you wish to view the original documents, please e-mail this office at mmolina@sbcfire.org or call the number at the end of this letter to arrange an appointment.

ACTIVE PERMIT FACILITIES: (Regulatory files for facilities with annual operating permits to maintain underground storage tanks, handle hazardous materials, and/or generate hazardous waste. Files include permits, inspections, reports, test results, correspondence, and related materials. Files will also include any underground tank removal/construction activity records and site remediation/contamination records for facilities still in operation).

Jakis Transport Inc. 11134 Cedar Ave. Bloomington	FA0012985 ~ CERS ID.10119640 Hazardous Materials 4-10 Chemicals Permit Conditionally Exempt Small Quantity Generator Permit (Last CERS Submission: None)

INACTIVE PERMIT AND/OR NON-PERMIT FACILITIES: (Inactive regulatory files for formerly permitted facilities that maintained underground storage tanks, stored hazardous materials, and/or generated hazardous waste and/or facilities with underground storage tanks removed and/or materials and waste removed. Files will also include any underground tank removal/construction activity records and site remediation/contamination records for facilities no longer operating underground tanks).

GREGORY C. DEVEREAUX
Chief Executive Officer

Board of Supervisors
ROBERT A. LOVINGOOD .....First District
JANICE RUTHERFORD.....Second District
JAMES RAMOS .....Third District
GARY C. OVITT.....Fourth District
JOSIE GONZALES ..... Fifth District

Jim's Pipeline Service 11138 Cedar Ave. Bloomington	FA0004136 ~ Est. 87014199 Underground Storage Tank Permit Hazardous Material Handler Permit – UST Only
Pound, James 11138 Cedar Ave. Bloomington	Est. 86007818 Underground Storage Tank Permit Hazardous Material Handler Permit – UST Only
Pound, James 11134 Cedar Ave. Bloomington	Est. 86010518 Underground Storage Tank Permit Hazardous Material Handler Permit – UST Only

PERMITS TO REMOVE/INSTALL/MODIFY UNDERGROUND STORAGE TANKS:

Jim's Pipeline Service 11138 S. Cedar Ave. Bloomington	Issued 03/18/1992 Removal Log #031992-02 ~ Job Card #3081

HAZARDOUS MATERIAL INCIDENT AND/OR COMPLAINT RESPONSE ACTIVITY: (other records of spill notifications and/or complaints not listed below may also exist in facility permit files).

Unknown Cedar north of Jurupa Bloomington	CO0024236 04/03/2007 Abandoned Waste Oil
George & Betty Walters 11188 Cedar Ave. Bloomington	CO0024268 03/28/2007 Illegal Aboveground Storage Tank
Unknown 11118 Cedar Ave. Bloomington	Case #8622 00265 07/23/1986 Abandoned Pumps and Tanks

SITE REMEDIATION: (Underground Storage Tank Clean-Up under Local Oversight Program or Voluntary Hazardous Waste Clean-Up activity under Local Jurisdiction) (documents may be included in regular active or inactive permit files listed above).

No record of site remediation identified in this search.

Records searched include permit database systems for facilities with permits as hazardous waste generators, hazardous materials handlers, and/or underground storage tanks, including inactive and/or out of business records; logs of permits issued for the removal and/or installation of underground storage tanks; records and databases pertaining to illicit dumping and releases; records of non-permitted facilities; sites undergoing remediation for contaminated soil and/or groundwater; and incidents responded to by the hazardous materials emergency response team. Records searched date back to early 1980's. Please note if a facility has completed a submission in CERS, the most recent submission can be made available for review upon request.

Records consist of 6 file(s), approximately 2" thick combined. To request a file review appointment or further clarification, please contact this office (909) 386-8468 or by email to mmolina@sbcfire.org.

Michelle McClain

MICHELLE MCCLAIN
Office Specialist
Office of the Fire Marshal
Hazardous Materials Division

MM:mm

*We will copy up to forty (40) pre-selected pages from a file at a charge $0.10 per page copied. (Be prepared to make this payment at the time of service). If the copies selected exceed forty (40) pages or if you want a copy of the entire file and it exceeds forty (40) pages, we will refer you to a private copy service. If you prefer to bring a portable copier on site, you may do so. Please let us know your plans in advance so that accommodations can be made.

STATE OF CALIFORNIA

WATER RESOURCES CONTROL BOARD

FORM 'A':
SITE

UNDERGROUND STORAGE TANK PROGRAM
FACILITY/SITE, INFORMATION and/or PERMIT APPLICATION

COMPLETE THIS FORM FOR EACH FACILITY/SITE

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY SITE CLOSURE
- [x] 7 PERMANENTLY CLOSED SITE

I. FACILITY/SITE INFORMATION & ADDRESS — (MUST BE COMPLETED)

FACILITY/SITE NAME: Marie Pound - old gas station	CARE OF ADDRESS INFORMATION:
ADDRESS: 11138 S. Cedar Ave	NEAREST CROSS STREET: ✓ Box to indicate ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL-AGENCY ☐ COUNTY-AGENCY ☐ STATE-AGENCY ☐ FEDERAL-AGENCY
CITY NAME: Bloomington	STATE: CA; ZIP CODE: ~~923~~; SITE PHONE #, WITH AREA CODE:
TYPE OF BUSINESS: [X] 1 GAS STATION ☐ 2 DISTRIBUTOR ☐ 3 FARM ☐ 4 PROCESSOR ☐ 5 OTHER; ✓ Box if INDIAN RESERVATION or TRUST LANDS ☐	EPA ID #: ; # of TANK's AT THIS SITE: 8
EMERGENCY CONTACT PERSON (PRIMARY)	**EMERGENCY CONTACT PERSON (SECONDARY)**
DAYS: NAME (LAST, FIRST): Marie Pound; PHONE # WITH AREA CODE: 820-0769	DAYS: NAME (LAST, FIRST): ; PHONE # WITH AREA CODE:
NIGHTS: NAME (LAST, FIRST): Stuart Duncan; PHONE # WITH AREA CODE: 887-6896	NIGHTS: NAME (LAST, FIRST): ; PHONE # WITH AREA CODE:

II. PROPERTY OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: Marie Pound	CARE OF ADDRESS INFORMATION:
MAILING or STREET ADDRESS: 5826 Sycamore	✓ Box to indicate ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL-AGENCY ☐ COUNTY-AGENCY ☐ STATE-AGENCY ☐ FEDERAL-AGENCY
CITY NAME: Rialto	STATE: CA; ZIP CODE: 92376; PHONE #, WITH AREA CODE: 820-0769

III. TANK OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: Same as above	CARE OF ADDRESS INFORMATION:
MAILING or STREET ADDRESS:	✓ Box to indicate ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL-AGENCY ☐ COUNTY-AGENCY ☐ STATE-AGENCY ☐ FEDERAL-AGENCY
CITY NAME:	STATE: ; ZIP CODE: ; PHONE #, WITH AREA CODE:

IV. LEGAL NOTIFICATION AND BILLING ADDRESS

CHECK ONE (1) BOX INDICATING WHICH ABOVE ADDRESS SHOULD BE USED FOR BOTH LEGAL NOTIFICATION AND BILLING: I. ☐ II. ☐ III. ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT.

APPLICANT'S NAME (PRINTED & SIGNATURE): Jaime Chastain	DATE: 3-19-92

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	AGENCY #	FACILITY ID #	# of TANKS at SITE
				8

CURRENT LOCAL AGENCY FACILITY ID #	APPROVED BY NAME	PHONE # WITH AREA CODE
PERMIT NUMBER	PERMIT APPROVAL DATE	PERMIT EXPIRATION DATE

LOCATION CODE	CENSUS TRACT #	SUPERVISOR-DISTRICT CODE	BUSINESS PLAN FILED YES ☐ NO ☐		DATE FILED
CHECK #	PERMIT AMOUNT	SURCHARGE AMOUNT	FEE CODE	RECEIPT #	BY:

THIS FORM MUST BE ACCOMPANIED BY AT LEAST (1) OR MORE TANK PERMIT FORM 'B' APPLICATION(S), UNLESS THIS IS A CHANGE OF SITE INFORMATION ONLY.

FORM A (3-2-88)

DATA PROCESSING COPY

8 USTs Removed 4-1-92 4-2-92

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY TANK CLOSURE
- [ ] 7 PERMANENTLY CLOSED ON SITE
- [x] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: 11138 Cedar Bloomington - Pound

I. TANK DESCRIPTION

COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. # U/K

B. MANUFACTURED BY: U/K

C. DATE INSTALLED (MO/DAY/YEAR) U/K

D. TANK CAPACITY IN GALLONS: 550 OR 1000 gal

II. TANK CONTENTS

IF A-1 IS MARKED, COMPLETE ITEM C.

A.
- [x] 1 MOTOR VEHICLE FUEL
- [ ] 2 PETROLEUM
- [ ] 3 CHEMICAL PRODUCT
- [ ] 4 OIL
- [ ] 80 EMPTY
- [ ] 95 UNKNOWN

B.
- [ ] 1 PRODUCT
- [ ] 2 WASTE

C.
- [x] 1a REGULAR UNLEADED
- [ ] 1b PREMIUM UNLEADED
- [ ] 2 LEADED
- [ ] 3 DIESEL
- [ ] 4 GASAHOL
- [ ] 5 JET FUEL
- [ ] 6 AVIATION GAS
- [ ] 7 METHANOL
- [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED

C. A. S. # :

III. TANK CONSTRUCTION

MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D

A. TYPE OF SYSTEM
- [x] 1 DOUBLE WALL
- [ ] 2 SINGLE WALL
- [ ] 3 SINGLE WALL WITH EXTERIOR LINER
- [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK)
- [ ] 95 UNKNOWN
- [ ] 99 OTHER ____

B. TANK MATERIAL (Primary Tank)
- [x] 1 BARE STEEL
- [ ] 2 STAINLESS STEEL
- [ ] 3 FIBERGLASS
- [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
- [ ] 5 CONCRETE
- [ ] 6 POLYVINYL CHLORIDE
- [ ] 7 ALUMINUM
- [ ] 8 100% METHANOL COMPATIBLE W/FRP
- [ ] 9 BRONZE
- [ ] 10 GALVANIZED STEEL
- [ ] 95 UNKNOWN
- [ ] 99 OTHER ____

C. INTERIOR LINING
- [ ] 1 RUBBER LINED
- [ ] 2 ALKYD LINING
- [ ] 3 EPOXY LINING
- [ ] 4 PHENOLIC LINING
- [ ] 5 GLASS LINING
- [ ] 6 UNLINED
- [x] 95 UNKNOWN
- [ ] 99 OTHER ____

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION
- [ ] 1 POLYETHYLENE WRAP
- [ ] 2 COATING
- [ ] 3 VINYL WRAP
- [ ] 4 FIBERGLASS REINFORCED PLASTIC
- [ ] 5 CATHODIC PROTECTION
- [ ] 91 NONE
- [x] 95 UNKNOWN
- [ ] 99 OTHER ____

IV. PIPING INFORMATION

CIRCLE A IF ABOVE GROUND OR U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE: A U 1 SUCTION; A U 2 PRESSURE; A U 3 GRAVITY; A U 99 OTHER

B. CONSTRUCTION: A U 1 SINGLE WALL; A U 2 DOUBLE WALL; A U 3 LINED TRENCH; A U 95 UNKNOWN; A U 99 OTHER

C. MATERIAL AND CORROSION PROTECTION: A U 1 BARE STEEL; A U 2 STAINLESS STEEL; A U 3 POLYVINYL CHLORIDE (PVC); A U 4 FIBERGLASS PIPE; A U 5 ALUMINUM; A U 6 CONCRETE; A U 7 STEEL W/ COATING; A U 8 100% METHANOL COMPATIBLE W/FRP; A U 9 GALVANIZED STEEL; A U 10 CATHODIC PROTECTION; A U 95 UNKNOWN; A U 99 OTHER ____

D. LEAK DETECTION
- [ ] 1 AUTOMATIC LINE LEAK DETECTOR
- [ ] 2 LINE TIGHTNESS TESTING
- [ ] 3 INTERSTITIAL MONITORING
- [ ] 99 OTHER ____

V. TANK LEAK DETECTION

- [x] 1 VISUAL CHECK
- [ ] 2 INVENTORY RECONCILIATION
- [ ] 3 VAPOR MONITORING
- [ ] 4 AUTOMATIC TANK GAUGING
- [ ] 5 GROUND WATER MONITORING
- [ ] 6 TANK TESTING
- [ ] 7 INTERSTITIAL MONITORING
- [ ] 91 NONE
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR) U/K
2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING 5 GALLONS
3. WAS TANK FILLED WITH INERT MATERIAL ? YES [x] NO [ ]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE) Jaime Chaotain

DATE 3-19-92

LOCAL AGENCY USE ONLY

THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.# — COUNTY # ___ JURISDICTION # ___ FACILITY # ___ TANK # 2

PERMIT NUMBER | PERMIT APPROVED BY/DATE | PERMIT EXPIRATION DATE

FORM B (9-90) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R4

Removed 4-2-92 GMB

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY TANK CLOSURE
- [ ] 7 PERMANENTLY CLOSED ON SITE
- [X] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: 11138 S. Cedar, Bloomington

I. TANK DESCRIPTION

COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. # u/k	B. MANUFACTURED BY: u/k
C. DATE INSTALLED (MO/DAY/YEAR) u/k	D. TANK CAPACITY IN GALLONS: 1,000

II. TANK CONTENTS

IF A-1 IS MARKED, COMPLETE ITEM C.

A.
- [X] 1 MOTOR VEHICLE FUEL
- [ ] 2 PETROLEUM
- [ ] 3 CHEMICAL PRODUCT
- [ ] 4 OIL
- [ ] 80 EMPTY
- [ ] 95 UNKNOWN

B.
- [ ] 1 PRODUCT
- [ ] 2 WASTE

C.
- [X] 1a REGULAR UNLEADED
- [ ] 1b PREMIUM UNLEADED
- [ ] 2 LEADED
- [ ] 3 DIESEL
- [ ] 4 GASAHOL
- [ ] 5 JET FUEL
- [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)
- [ ] 6 AVIATION GAS
- [ ] 7 METHANOL

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED

C. A. S. # :

III. TANK CONSTRUCTION

MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D

A. TYPE OF SYSTEM
- [X] 1 DOUBLE WALL
- [ ] 2 SINGLE WALL
- [ ] 3 SINGLE WALL WITH EXTERIOR LINER
- [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK)
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

B. TANK MATERIAL (Primary Tank)
- [X] 1 BARE STEEL
- [ ] 5 CONCRETE
- [ ] 9 BRONZE
- [ ] 2 STAINLESS STEEL
- [ ] 6 POLYVINYL CHLORIDE
- [ ] 10 GALVANIZED STEEL
- [ ] 3 FIBERGLASS
- [ ] 7 ALUMINUM
- [ ] 95 UNKNOWN
- [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
- [ ] 8 100% METHANOL COMPATIBLE W/FRP
- [ ] 99 OTHER

C. INTERIOR LINING
- [ ] 1 RUBBER LINED
- [ ] 5 GLASS LINING
- [ ] 2 ALKYD LINING
- [ ] 6 UNLINED
- [ ] 3 EPOXY LINING
- [X] 95 UNKNOWN
- [ ] 4 PHENOLIC LINING
- [ ] 99 OTHER

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION
- [ ] 1 POLYETHYLENE WRAP
- [ ] 5 CATHODIC PROTECTION
- [ ] 2 COATING
- [ ] 91 NONE
- [ ] 3 VINYL WRAP
- [X] 95 UNKNOWN
- [ ] 4 FIBERGLASS REINFORCED PLASTIC
- [ ] 99 OTHER

IV. PIPING INFORMATION

CIRCLE A IF ABOVE GROUND OR U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U 1 SUCTION	A U 2 PRESSURE	A U 3 GRAVITY	A U 99 OTHER
B. CONSTRUCTION	A U 1 SINGLE WALL	A U 2 DOUBLE WALL	A U 3 LINED TRENCH	A U 95 UNKNOWN A U 99 OTHER
C. MATERIAL AND CORROSION PROTECTION	A U 1 BARE STEEL A U 5 ALUMINUM A U 9 GALVANIZED STEEL	A U 2 STAINLESS STEEL A U 6 CONCRETE A U 10 CATHODIC PROTECTION	A U 3 POLYVINYL CHLORIDE (PVC) A U 7 STEEL W/ COATING A U 95 UNKNOWN	A U 4 FIBERGLASS PIPE A U 8 100% METHANOL COMPATIBLE W/FRP A U 99 OTHER
D. LEAK DETECTION	[ ] 1 AUTOMATIC LINE LEAK DETECTOR	[ ] 2 LINE TIGHTNESS TESTING	[ ] 3 INTERSTITIAL MONITORING	[ ] 99 OTHER

V. TANK LEAK DETECTION

- [X] 1 VISUAL CHECK
- [ ] 2 INVENTORY RECONCILIATION
- [ ] 3 VAPOR MONITORING
- [ ] 4 AUTOMATIC TANK GAUGING
- [ ] 5 GROUND WATER MONITORING
- [ ] 6 TANK TESTING
- [ ] 7 INTERSTITIAL MONITORING
- [ ] 91 NONE
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR) u/k	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING 10 GALLONS	3. WAS TANK FILLED WITH INERT MATERIAL ? YES [X] NO [ ]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE) Jane Chastain	DATE 3-19-92

LOCAL AGENCY USE ONLY THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.#	COUNTY #	JURISDICTION #	FACILITY #	TANK #
				1

PERMIT NUMBER	PERMIT APPROVED BY/DATE	PERMIT EXPIRATION DATE

FORM B (9-90) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R4

Removed 4-2-92

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY TANK CLOSURE
- [ ] 7 PERMANENTLY CLOSED ON SITE
- [X] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: 11138 S. Cedar, Bloomington - old gas Station

I. TANK DESCRIPTION

COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. # u/k	B. MANUFACTURED BY: u/k
C. DATE INSTALLED (MO/DAY/YEAR)	D. TANK CAPACITY IN GALLONS: 8000 TO 10,000

II. TANK CONTENTS

IF A-1 IS MARKED, COMPLETE ITEM C.

A.
- [X] 1 MOTOR VEHICLE FUEL
- [ ] 2 PETROLEUM
- [ ] 3 CHEMICAL PRODUCT
- [ ] 4 OIL
- [ ] 80 EMPTY
- [ ] 95 UNKNOWN

B.
- [ ] 1 PRODUCT
- [ ] 2 WASTE

C.
- [X] 1a REGULAR UNLEADED
- [ ] 1b PREMIUM UNLEADED
- [ ] 2 LEADED
- [ ] 3 DIESEL
- [ ] 4 GASAHOL
- [ ] 5 JET FUEL
- [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)
- [ ] 6 AVIATION GAS
- [ ] 7 METHANOL

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED

C. A. S. # :

III. TANK CONSTRUCTION

MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D

A. TYPE OF SYSTEM
- [X] 1 DOUBLE WALL
- [ ] 2 SINGLE WALL
- [ ] 3 SINGLE WALL WITH EXTERIOR LINER
- [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK)
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

B. TANK MATERIAL (Primary Tank)
- [X] 1 BARE STEEL
- [ ] 5 CONCRETE
- [ ] 9 BRONZE
- [ ] 2 STAINLESS STEEL
- [ ] 6 POLYVINYL CHLORIDE
- [ ] 10 GALVANIZED STEEL
- [ ] 3 FIBERGLASS
- [ ] 7 ALUMINUM
- [ ] 95 UNKNOWN
- [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
- [ ] 8 100% METHANOL COMPATIBLE W/FRP
- [ ] 99 OTHER

C. INTERIOR LINING
- [ ] 1 RUBBER LINED
- [ ] 5 GLASS LINING
- [ ] 2 ALKYD LINING
- [ ] 6 UNLINED
- [ ] 3 EPOXY LINING
- [X] 95 UNKNOWN
- [ ] 4 PHENOLIC LINING
- [ ] 99 OTHER

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION
- [ ] 1 POLYETHYLENE WRAP
- [ ] 5 CATHODIC PROTECTION
- [ ] 2 COATING
- [ ] 91 NONE
- [ ] 3 VINYL WRAP
- [X] 95 UNKNOWN
- [ ] 4 FIBERGLASS REINFORCED PLASTIC
- [ ] 99 OTHER

IV. PIPING INFORMATION

CIRCLE **A** IF ABOVE GROUND OR **U** IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U	1 SUCTION	A U	2 PRESSURE	A U	3 GRAVITY	A U	99 OTHER				
B. CONSTRUCTION	A U	1 SINGLE WALL	A U	2 DOUBLE WALL	A U	3 LINED TRENCH	A U	95 UNKNOWN	A U	99 OTHER		
C. MATERIAL AND CORROSION PROTECTION	A U	1 BARE STEEL	A U	2 STAINLESS STEEL	A U	3 POLYVINYL CHLORIDE (PVC)	A U	4 FIBERGLASS PIPE				
	A U	5 ALUMINUM	A U	6 CONCRETE	A U	7 STEEL W/ COATING	A U	8 100% METHANOL COMPATIBLE W/FRP				
	A U	9 GALVANIZED STEEL	A U	10 CATHODIC PROTECTION	A U	95 UNKNOWN	A U	99 OTHER				
D. LEAK DETECTION	[ ] 1 AUTOMATIC LINE LEAK DETECTOR		[ ] 2 LINE TIGHTNESS TESTING		[ ] 3 INTERSTITIAL MONITORING		[ ] 99 OTHER					

V. TANK LEAK DETECTION

- [X] 1 VISUAL CHECK
- [ ] 6 TANK TESTING
- [ ] 2 INVENTORY RECONCILIATION
- [ ] 7 INTERSTITIAL MONITORING
- [ ] 3 VAPOR MONITORING
- [ ] 91 NONE
- [ ] 4 AUTOMATIC TANK GAUGING
- [ ] 95 UNKNOWN
- [ ] 5 GROUND WATER MONITORING
- [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR)	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING	3. WAS TANK FILLED WITH INERT MATERIAL ?
u/k	25 GALLONS	YES [X] NO [ ]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE)	DATE
Jaime Chastaine	3-19-92

LOCAL AGENCY USE ONLY

THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.#	COUNTY #	JURISDICTION #	FACILITY #	TANK #
				4

PERMIT NUMBER	PERMIT APPROVED BY/DATE	PERMIT EXPIRATION DATE

FORM B (9-90) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R4

Removed 4-1-92

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY TANK CLOSURE
- [ ] 7 PERMANENTLY CLOSED ON SITE
- [X] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: Old gas Station 11138 Cedar - Bloomingy

I. TANK DESCRIPTION
COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. #	B. MANUFACTURED BY: u/k
C. DATE INSTALLED (MO/DAY/YEAR) u/k	D. TANK CAPACITY IN GALLONS: 8000 TO 10000

II. TANK CONTENTS
IF A-1 IS MARKED, COMPLETE ITEM C.

Unsure of Size

A.
- [X] 1 MOTOR VEHICLE FUEL
- [ ] 2 PETROLEUM
- [ ] 3 CHEMICAL PRODUCT
- [ ] 4 OIL
- [ ] 80 EMPTY
- [ ] 95 UNKNOWN

B.
- [ ] 1 PRODUCT
- [ ] 2 WASTE

C.
- [X] 1a REGULAR UNLEADED
- [ ] 1b PREMIUM UNLEADED
- [ ] 2 LEADED
- [ ] 3 DIESEL
- [ ] 4 GASAHOL
- [ ] 5 JET FUEL
- [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)
- [ ] 6 AVIATION GAS
- [ ] 7 METHANOL

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED

C. A. S. # :

III. TANK CONSTRUCTION
MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D

A. TYPE OF SYSTEM
- [X] 1 DOUBLE WALL
- [ ] 2 SINGLE WALL
- [ ] 3 SINGLE WALL WITH EXTERIOR LINER
- [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK)
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

B. TANK MATERIAL (Primary Tank)
- [X] 1 BARE STEEL
- [ ] 5 CONCRETE
- [ ] 9 BRONZE
- [ ] 2 STAINLESS STEEL
- [ ] 6 POLYVINYL CHLORIDE
- [ ] 10 GALVANIZED STEEL
- [ ] 3 FIBERGLASS
- [ ] 7 ALUMINUM
- [ ] 95 UNKNOWN
- [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
- [ ] 8 100% METHANOL COMPATIBLE W/FRP
- [ ] 99 OTHER

C. INTERIOR LINING
- [ ] 1 RUBBER LINED
- [ ] 5 GLASS LINING
- [ ] 2 ALKYD LINING
- [ ] 6 UNLINED
- [X] 95 UNKNOWN
- [ ] 3 EPOXY LINING
- [ ] 99 OTHER
- [ ] 4 PHENOLIC LINING

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION
- [ ] 1 POLYETHYLENE WRAP
- [ ] 5 CATHODIC PROTECTION
- [ ] 2 COATING
- [ ] 91 NONE
- [X] 95 UNKNOWN
- [ ] 3 VINYL WRAP
- [ ] 99 OTHER
- [ ] 4 FIBERGLASS REINFORCED PLASTIC

IV. PIPING INFORMATION
CIRCLE **A** IF ABOVE GROUND OR **U** IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U 1 SUCTION	A U 2 PRESSURE	A U 3 GRAVITY	A U 99 OTHER	
B. CONSTRUCTION	A U 1 SINGLE WALL	A U 2 DOUBLE WALL	A U 3 LINED TRENCH	A U 95 UNKNOWN	A U 99 OTHER
C. MATERIAL AND CORROSION PROTECTION	A U 1 BARE STEEL	A U 2 STAINLESS STEEL	A U 3 POLYVINYL CHLORIDE (PVC)	A U 4 FIBERGLASS PIPE	
	A U 5 ALUMINUM	A U 6 CONCRETE	A U 7 STEEL W/ COATING	A U 8 100% METHANOL COMPATIBLE W/FRP	
	A U 9 GALVANIZED STEEL	A U 10 CATHODIC PROTECTION	A U 95 UNKNOWN	A U 99 OTHER	
D. LEAK DETECTION	[ ] 1 AUTOMATIC LINE LEAK DETECTOR	[ ] 2 LINE TIGHTNESS TESTING	[ ] 3 INTERSTITIAL MONITORING	[ ] 99 OTHER	

V. TANK LEAK DETECTION

- [X] 1 VISUAL CHECK
- [ ] 2 INVENTORY RECONCILIATION
- [ ] 3 VAPOR MONITORING
- [ ] 4 AUTOMATIC TANK GAUGING
- [ ] 5 GROUND WATER MONITORING
- [ ] 6 TANK TESTING
- [ ] 7 INTERSTITIAL MONITORING
- [ ] 91 NONE
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR) u/k	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING 25 GALLONS	3. WAS TANK FILLED WITH INERT MATERIAL ? YES [X] NO [ ]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE) Jaime Chastain	DATE 3-19-92

LOCAL AGENCY USE ONLY
THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.#	COUNTY #	JURISDICTION #	FACILITY #	TANK #
				5

PERMIT NUMBER	PERMIT APPROVED BY/DATE	PERMIT EXPIRATION DATE

FORM B (9-90) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R4

Removed 4-1-92

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
- [ ] 1 NEW PERMIT
- [ ] 2 INTERIM PERMIT
- [ ] 3 RENEWAL PERMIT
- [ ] 4 AMENDED PERMIT
- [ ] 5 CHANGE OF INFORMATION
- [ ] 6 TEMPORARY TANK CLOSURE
- [ ] 7 PERMANENTLY CLOSED ON SITE
- [X] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: old gas station 11138 Cedar Ave

I. TANK DESCRIPTION

COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. #	B. MANUFACTURED BY:
C. DATE INSTALLED (MO/DAY/YEAR) u/k	D. TANK CAPACITY IN GALLONS: 8000 TO 10,000 unsure of size

II. TANK CONTENTS

IF A-1 IS MARKED, COMPLETE ITEM C.

A.
- [X] 1 MOTOR VEHICLE FUEL
- [ ] 2 PETROLEUM
- [ ] 3 CHEMICAL PRODUCT
- [ ] 4 OIL
- [ ] 80 EMPTY
- [ ] 95 UNKNOWN

B.
- [ ] 1 PRODUCT
- [ ] 2 WASTE

C.
- [X] 1a REGULAR UNLEADED
- [ ] 1b PREMIUM UNLEADED
- [ ] 2 LEADED
- [ ] 3 DIESEL
- [ ] 4 GASAHOL
- [ ] 5 JET FUEL
- [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)
- [ ] 6 AVIATION GAS
- [ ] 7 METHANOL

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED

C. A. S. # :

III. TANK CONSTRUCTION

MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D

A. TYPE OF SYSTEM
- [X] 1 DOUBLE WALL
- [ ] 2 SINGLE WALL
- [ ] 3 SINGLE WALL WITH EXTERIOR LINER
- [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK)
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

B. TANK MATERIAL (Primary Tank)
- [X] 1 BARE STEEL
- [ ] 5 CONCRETE
- [ ] 9 BRONZE
- [ ] 2 STAINLESS STEEL
- [ ] 6 POLYVINYL CHLORIDE
- [ ] 10 GALVANIZED STEEL
- [ ] 3 FIBERGLASS
- [ ] 7 ALUMINUM
- [ ] 95 UNKNOWN
- [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
- [ ] 8 100% METHANOL COMPATIBLE W/FRP
- [ ] 99 OTHER

C. INTERIOR LINING
- [ ] 1 RUBBER LINED
- [ ] 5 GLASS LINING
- [ ] 2 ALKYD LINING
- [ ] 6 UNLINED
- [ ] 3 EPOXY LINING
- [X] 95 UNKNOWN
- [ ] 4 PHENOLIC LINING
- [ ] 99 OTHER

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION
- [ ] 1 POLYETHYLENE WRAP
- [ ] 5 CATHODIC PROTECTION
- [ ] 2 COATING
- [ ] 91 NONE
- [ ] 3 VINYL WRAP
- [X] 95 UNKNOWN
- [ ] 4 FIBERGLASS REINFORCED PLASTIC
- [ ] 99 OTHER

IV. PIPING INFORMATION

CIRCLE **A** IF ABOVE GROUND OR **U** IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U 1 SUCTION	A U 2 PRESSURE	A U 3 GRAVITY	A U 99 OTHER
B. CONSTRUCTION	A U 1 SINGLE WALL	A U 2 DOUBLE WALL	A U 3 LINED TRENCH	A U 95 UNKNOWN A U 99 OTHER
C. MATERIAL AND CORROSION PROTECTION	A U 1 BARE STEEL A U 5 ALUMINUM A U 9 GALVANIZED STEEL	A U 2 STAINLESS STEEL A U 6 CONCRETE A U 10 CATHODIC PROTECTION	A U 3 POLYVINYL CHLORIDE (PVC) A U 7 STEEL W/ COATING A U 95 UNKNOWN	A U 4 FIBERGLASS PIPE A U 8 100% METHANOL COMPATIBLE W/FRP A U 99 OTHER
D. LEAK DETECTION	[ ] 1 AUTOMATIC LINE LEAK DETECTOR	[ ] 2 LINE TIGHTNESS TESTING	[ ] 3 INTERSTITIAL MONITORING	[ ] 99 OTHER

V. TANK LEAK DETECTION

- [X] 1 VISUAL CHECK
- [ ] 2 INVENTORY RECONCILIATION
- [ ] 3 VAPOR MONITORING
- [ ] 4 AUTOMATIC TANK GAUGING
- [ ] 5 GROUND WATER MONITORING
- [ ] 6 TANK TESTING
- [ ] 7 INTERSTITIAL MONITORING
- [ ] 91 NONE
- [ ] 95 UNKNOWN
- [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR)	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING	3. WAS TANK FILLED WITH INERT MATERIAL ?
~~3-17-75~~ u/k	25 GALLONS	YES [X] NO [ ]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE)	DATE
Jaime Chastain	3-19-92

LOCAL AGENCY USE ONLY

THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.#	COUNTY #	JURISDICTION #	FACILITY #	TANK #
				6

PERMIT NUMBER	PERMIT APPROVED BY/DATE	PERMIT EXPIRATION DATE

FORM B (9-90) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R4

Gas
Removed 4-1-92

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
James Pound
11438 S. Cedar
Bloomington, CA 92315

4. Article Number
163897

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X Jim Obanch

6. Signature — Agent
X

7. Date of Delivery
9-17-90

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS
Print your name, address and ZIP Code in the space below.
- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

SAN BERNARDINO, CA 92415 PM 17 SEP 1990

ALWAYS USE ZIP CODE

U.S.MAIL

PENALTY FOR PRIVATE USE, $300

RETURN TO

Print Sender's name, address, and ZIP Code in the space below.

County of San Bernardino
~~DEPARTMENT OF ENVIRONMENTAL~~
HEALTH SERVICES
~~385 North Arrowhead Avenue~~
San Bernardino, CA 92415-0160

(DHS)
Attn: Maria Keffer

ENVIRONMENTAL HEALTH SERVICES

COUNTY OF SAN BERNARDIN
ENVIRONMENTAL
PUBLIC WORKS AGENCY

☑ 385 North Arrowhead Avenue • San Bernardino, CA 92415-0160 • (714) 387-4646
☐ 320 East "D" Street • Ontario, CA 91764 • (714) 391-7570
☐ 15505 Civic Drive • Victorville, CA 92392 • (619) 243-8141
☐ 17830 Arrow Highway • Fontana, CA 92335 • (714) 829-6244
☐ 57407 Twentynine Palms Highway • Yucca Valley, CA 92284
☐ San Bernardino County Vector Control Program
2355 East Fifth Street • San Bernardino, Ca 92415 • (714) 383-3200
☐ Environmental Enforcement and Housing
172 West Third Street • San Bernardino, CA 92415-0315 • (714) 387-6512/6515
☐ Air Pollution Control District
15428 Civic Drive, Suite 200, Victorville, CA 92392 • (619) 243-8200

PAUL F. RYAN, R.E.H.S.
Director

Also serving the cities of:
Adelanto, Apple Valley, Barstow, Big Bear Lake, Chino, Colton, Fontana, Grand Terrace, Hesperia, Highland, Loma Linda, Montclair, Needles, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Twentynine Palms, Upland, Victorville

September 11, 1990

JAMES POUND
11138 S. Cedar
Bloomington, CA 92316

This letter is to inform you of current and future underground storage tank regulations in the County of San Bernardino. As owner of property with an underground storage tank you must meet the following requirements:

1. All facilities with one or more underground storage tanks must have current state and county permits posted in a conspicuous place.

2. A monitoring proposal must be submitted, approved, and implemented.

3. If the tank operator is not the tank owner, a Business Plan must also be submitted to DEHS.

The monitoring requirements are the most confusing to underground storage tank owners. By law both the tank and piping must be monitored to detect unauthorized releases caused by leaks.

Underground storage tanks installed before 1984 must be carefully monitored. The current requirements for pre-1984 tanks are as follows:

1. Daily inventory/reconciliation with an annual precision test by a California State licensed tester may be used to monitor the tank.

OR

Automatic tank gauging may be installed to monitor volume of product. With this option the precision testing need only be done every 5 years.

2. Pressurized product lines must have pipeline leak detectors installed.

3. If ground water is less than 100 feet deep, spill proof boxes and overfill protection is required. Ground water and/or Vadose monitoring requirements may also apply if ground water is less than 100 feet.

4. Emergency contact phone numbers must be included in the monitoring plan.

The above regulations have been required since 1986. There will be additional ones in the future.

October 1991 - Underground storage tank owners must meet the State's financial liability requirements. Owners of 1 to 12 underground storage tanks must carry $1 million of clean-up liability insurance.

1995 - All product lines or any piping capable of holding standing fluids, including fills, will be required to have secondary containment with monitors for shut down.

1998 - EPA will require that <u>all</u> pre-1984 tanks have:

a) cathodic protection
b) overfill protection, and
c) overspill containment

If you have not initiated a monitoring plan, obtained permits, or applied for an extension with this Department, you are in violation of the law.

In lieu of the above, the option of tank closure, by removal, can be exercised. Enclosed is information describing tank closure policies.

The intent of providing this information is to help you make informed decisions regarding your underground storage tank. Please contact us at once so that we may help you meet your obligations.

Maria Keffer

MARIA KEFFER, EHS I
HAZARDOUS MATERIALS FIELD SERVICES

MK:tlb

ENVIRONMENTAL HEALTH SERVICES

☐ 385 North Arrowhead Avenue • San Bernardino, CA 92415-0160 • (714) 387-4646
☐ 320 East "D" Street • Ontario, CA 91764 • (714) 391-7570
☐ 15505 Civic Drive • Victorville, CA 92392 • (619) 243-8141
☐ 17830 Arrow Highway • Fontana, CA 92335 • (714) 829-6244
☐ 57407 Twentynine Palms Highway • Yucca Valley, CA 92284
☐ San Bernardino County Vector Control Program
2355 East Fifth Street • San Bernardino, Ca 92415 • (714) 383-3200
☐ Environmental Enforcement and Housing
172 West Third Street • San Bernardino, CA 92415-0315 • (714) 387-6512/6515
☐ Air Pollution Control District
15428 Civic Drive, Suite 200, Victorville, CA 92392 • (619) 243-8200

COUNTY OF SAN BERNARDINO
ENVIRONMENTAL
PUBLIC WORKS AGENCY

PAUL F. RYAN, R.E.H.S.
Director

Also serving the cities of:

Adelanto	Loma Linda
Apple Valley	Montclair
Barstow	Needles
Big Bear Lake	Ontario
Chino	Rancho Cucamonga
Colton	Redlands
Fontana	Rialto
Grand Terrace	San Bernardino
Hesperia	Twentynine Palms
Highland	Upland
Victorville	

April 5, 1990

JAMES P. POUND
11138 S. Cedar
Bloomington, CA 92316

SUBJECT: UNDERGROUND STORAGE TANK REGULATIONS

A recent inspection by personnel of this Department has indicated the presence of 3 underground storage tank(s) at the following location, 11138 S. Cedar, Bloomington, and 1 underground storage tank at 11134 S. Cedar, Bloomington, CA.

As an owner of property that has underground storage tanks on it, current regulations require that you keep all underground storage tanks permitted with the County (San Bernardino County Code, Division 8, Title 3, Section 38.101); all underground storage tanks be monitored, quarterly reports be submitted, and that yearly precision tests be performed. (California Health & Safety Code, Division 20, Chapter 6.7, Section 25292).

In lieu of the above, the option of tank closure, by removal, can be exercised. Enclosed is information describing tank closure policies.

If you no longer own the property at this time, please notify us, in writing, of the new owner's name and mailing address.

If you do not respond within 20 working days, a Notice of Pendency will be placed on the property in question, and may result in further legal action.

If you have any questions, please contact this office at (714) 387-3080.

Maria Keffer

MARIA KEFFER, EHS I
HAZARDOUS MATERIALS FIELD SERVICES

MK:tlb

County o. n Bernardino — Environmental Public W s Agency
DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES

UNDERGROUND STORAGE TANK INSPECTION FORM

FACILITY NAME James P. Pound CONTACT PERSON

SITUS ADDRESS 11138 S. Cedar OTHERS PRESENT

MAILING ADDRESS PHONE NUMBER ( )

LEAK DETECTION/MONITORING METHOD NUMBER OF TANKS

ALL VIOLATIONS ARE INDICATED BY A CHECKED BOX AND MUST BE CORRECTED IMMEDIATELY, UNLESS NOTED OTHERWISE.

Violation		GENERAL REQUIREMENTS (All Tanks)	Sweeps
	1.	TANK/HANDLER PERMITS CURRENT?	1
	2.	VISUAL SIGNS OF LEAKAGE? (FILL BOX/TURBINE/DISPENSERS)	
	3.	PRODUCT CHANGES? (TANK COMPATABILITY/ BUSINESS PLAN)?	3
	4.	CORROSION PROTEC./MAINT. CERT. AVAILABLE?	
	5.	PRECISION TEST RECORDS AVAILABLE?	13
	6.	FUEL DISPENSERS CALIBRATED? (EVERY 6 MONTHS)	
	7.	NOTIFICATION PROCEDURE SIGNS POSTED?	25
	8.	BUSINESS PLAN SUBMITTED/APPROVED/CURRENT?	
		TANKS INSTALLED PRIOR TO 1/1/84	
	9.	MONITORING PROPOSAL SUBMITTED AND APPROVED?	9
	10.	QTLY. REPORTS SUBMITTED AND AVAILABLE?	
	11.	INVENTORY REC. RECORDS COMPLETE/TAKEN DAILY/ AVAILABLE?	15
	12.	INVENTORY RECORDS CORRECTLY RECONCILED?	21
	13.	PRODUCT LOSS EXCEEDS LIMITS?	27
	14.	DIPSTICK IN GOOD CONDITION? INDICATOR PASTE USED?	23

Violation		TANKS INSTALLED AFTER 1/1/84	Sweeps
	15.	TANK AND PIPING ANNULAR SPACE MONITORED?	
	16.	ELECTRONIC INVENTORY PRINTOUTS AVAILABLE?	
	17.	AUDIBLE/VISUAL ALARMS OPERATIONAL?	11
	18.	IN ALARM? PIPELINE LEAK DETECTORS PRESENT/OPERATIONAL?	
	19.	MON. FREQ. APPROPRIATE? ANNUAL MAINT. CERT. AVAILABLE?	
	20.	LEAK DETECTION MODE RUN?	
		MONITORING WELLS	
	21.	MON. WELLS PROPERLY SEALED/LIDS LABELED?	17
	22.	WATER SAMPLE ANALYSIS AVAIL./OR CONT. ELEC. MON. FUNCTIONAL?	29
	23.	VADOSE WELLS-PROBES PRESENT? 6 MO. MAINT. CERT. AVAILABLE?	
		WASTE TANKS ONLY	
	24.	CONTENTS VERIFIED? MANIFESTS AVAILABLE?	
	25.	MEASUREMENTS TAKEN AT BEGINNING AND END OF WORKDAY?	

4 pumps - appear to be abandoned.
Probably 3 tanks present → 3 vent pipes

Maria Kelfer
Inspector

Received By

3/30/96
Date

HAZARDOUS MATERIALS FIELD SERVICES — 385 North Arrowhead Avenue, San Bernardino, CA 92415-0160 — (714) 387-3080

08-17941-631 Rev. 10/89

031992-02 Bloomington

COUNTY FIRE DEPARTMENT

OFFICE OF THE FIRE MARSHAL
HAZARDOUS MATERIALS DIVISION
620 South "E" Street • San Bernardino, CA 92415-0153
(909) 386-8401 • Fax (909) 386-8460

COUNTY OF SAN BERNARDINO
ECONOMIC DEVELOPMENT
AND PUBLIC SERVICES GROUP

PETER R. HILLS
Fire Chief
County Fire Warden

March 27, 2003

Century 21 Real Estate – Lois Lauer
17122 Slover Ave., #109
Fontana, CA 92337

ATTENTION: Amelia Arias

SUBJECT: REQUEST FOR RECORDS INFORMATION

RE: 11138 Cedar Ave.
Bloomington, California

In response to your formal request for Hazardous Materials Division records information of March 17, 2003, this is to confirm a search and review of records has been conducted for information pertaining to the removal of underground storage tanks at the subject property.

This search revealed that operating permits were issued to Jim's Pipeline Service at 11138 Cedar Ave., Bloomington, for four underground storage tanks (Establishment ID 87014199), between 1987 and 1992. A permit to remove the underground storage tanks was issued March 19, 1992, to Warren Duncan Contracting for Marie Pound, named as owner, at which time the number of known underground storage tanks was changed from four (4) to five (5).

On April 11, 1992, Garry Brown, REHS, of the Hazardous Materials Division, witnessed the removal of eight (8) underground storage tanks at 11138 Cedar Ave., Bloomington, and soil sampling was conducted. Results of soil sampling were faxed to this office on or about April 9, 1992, and Mr. Brown initialed the removal job card (copy enclosed), indicating approval for backfill.

According to the information contained in these records, the removal of the eight (8) underground storage tanks was conducted in compliance with the requirements in effect at the time of the removal, and no further action or investigation was recommended or ordered.

It is important to note that this information cannot be construed as a release of liability for the site nor as a declaration that the site is free from contamination. Should further projects or environmental investigations reveal contaminants at the site, investigation and remedial action could be ordered.

ELIZABETH A. PARMENTER
Environmental Technician III
OFM/HAZARDOUS MATERIALS DIVISION
eparmenter@fire.sbcounty.gov
(909) 386-8419 (909) 386-8460 FAX

ENCL: CC JOBCARD, APP, INSP. WORKSHEET 4/11/92

*Note: The Hazardous Materials Division was part of the Environmental Health Services Department in 1992.

JOHN F. MICHAELSON
County Administrative Officer

JOHN GOSS
Assistant County Administrator
Economic Development and
Public Services Group

Board of Supervisors
BILL POSTMUS ..... First District
PAUL BIANE ..... Second District
DENNIS HANSBERGER ..... Third District
FRED AGUIAR ..... Fourth District
JERRY EAVES ..... Fifth District

CUPA
San Bernardino County Fire Department • Hazardous Materials Division
620 South 'E' Street, San Bernardino, CA 92415-0153 • (909) 386-8401 FAX (909) 386-8460

REQUEST FOR RECORDS RESEARCH

For Office Use Only	
Reference No.:	030317-01
Amount Paid:	
Receipt No.:	
Date:	

If you are faxing or e-mailing this request, please check the box below and indicate the amount you are mailing:

☐ This request has been faxed or e-mailed. A hard copy request has been mailed with a check or money order for: $ _____

SITE INFORMATION

Facility Name/Owner Name	Site Address	City/Community
DOLLIE M. POUND	11134 & 11138 CEDAR AVE	BLOOMINGTON

SPECIFIC RECORDS REQUESTED

Record Type	Dates	Record Type	Dates
☐ **ALL RECORDS**			
☐ Active Permit Records	To	☐ Risk Management Plan (RMP)/ CalARP	To
☐ Inactive/Closed Permit Records	To	☐ Hazardous Materials Handler Business Plan	To
☐ Hazardous Waste Generator	To	☒ Underground Storage Tank Removal Records	To
☐ Hazardous Materials Handler	To	☐ Site Remediation	To
☒ Underground Storage Tank	To	☐ Hazmat Incident/Emergency Response	To
☐ Aboveground Storage Tank	To	☐	To

If this site is within Victorville City limits, contact the Victorville City Fire Department at (760) 955-5229 for information. If this site is within Hesperia City limits, contact the Hesperia City Fire Department at (760) 947-1600 for information.

Records are searched by site location. If no site address exists, please provide other identifying location information, such as an address range within a block (125-135 E. Main St.), a street corner (NW Corner of Main St. and Elm Ave.), or an Assessor's Parcel Number and/or legal description (Township, Range, Section).

REQUESTOR INFORMATION

NAME	TITLE (*If individual, leave blank*)	COMPANY (*If individual, leave blank*)
AMELIA ARIAS	REAL ESTATE AGENT	C-21 LOIS LAUER R.

MAILING ADDRESS	CITY	STATE	ZIP CODE
17122 SLOVER AVE #109	FONTANA	CA.	92337

TELEPHONE	FAX	EMAIL ADDRESS
(909) 429-3000	(909) 428-5856	—

PURPOSE OF REQUEST

- ☐ 1. Phase I site assessment or due diligence **AT THE SITE**
- ☐ 2. Environmental consultant or engineer involved with remediation **AT THE SITE**
- ☐ 3. Phase I site assessment or due diligence **NEARBY**
- ☐ 4. Environmental consultant or engineer involved with remediation **NEARBY**
- ☐ 5. Proposed School Site
- ☐ 6. Proposed Drinking Water Well
- ☐ 7. Owner or operator of the above facility or property
- ☐ 8. General interest/Community awareness
- ☐ 9. Potential buyer
- ☒ 10. Real Estate Agent, Lender, Appraiser
- ☐ 11. Legal reasons
- ☐ 12. Other: _____

- ***PAYMENT OF $71.00 MUST BE SUBMITTED WITH THIS REQUEST. A SEPARATE REQUEST MUST BE MADE FOR EACH SITE.***
- ***You may fax or e-mail this form to and mail the original with payment. Your faxed or e-mailed request will be logged at the time it is received (any request received after 5:00 PM will be logged in on the following business morning). Check the box in the upper left corner of this form to indicate that you have sent the original form with the fee by separate mail. PLEASE NOTE THAT THE SEARCH WILL NOT BEGIN UNTIL THE PROPER FEE IS RECEIVED.***
- ***A rate of $71.00 per hour will be charged for any extended research.***
- ***If no records exist, you will be notified in writing. If records are located, you will be notified in writing describing the records that exist for the site and what files are available for review, generally within ten working days. Upon receipt of the records availability notice, you may schedule an appointment to review the available files.***
- ***Staff will copy a maximum of 20 pages at the time records are examined at a rate of 25 cents per page. If more copies are required, you may bring a personal copier or arrange a private copy service if preferred. You will not be required to be present at the copy service appointment.***

REQUESTOR'S SIGNATURE

I have read and understand the above procedures for records research.

SIGNATURE OF REQUESTOR	DATE
Amelia Arias	3/17/03

Revised 8/15/2002

SAN BERNARDINO COUNTY - DEH
HAZARDOUS MATERIALS FIELD SERVICES PROGRAM
UNDERGROUND STORAGE TANK REMOVAL
INSPECTION FORM

DATE: April 1 1992 TIME: 9:30 am

FACILITY NAME: Mrs Pound / Jim's Pipeline Service

LOCATION: 11138 Cedar Bloomington

CONTRACTOR: Duncan

INSPECTORS PRESENT DEHS: GMB FIRE: Huddleston

AQMD: OTHER:

	QUANTITY	HAULER	DESTINATION
Triple Rinsate:	180 (oil) 600 gal	Waste Enviro Serv & Trans Inc - Corona	Industrial Service
Tanks:	8	John R. Golden & Mc Bride	A & C

Degassing Contractor: D. Rock - Anaheim

Manifest #: 91589733 SCAQMD Reference #: 031992-02 Dry Ice Used (10-15 lb/1000 gals): 450# total

91589742 → for Oil

Are there visible stains or residual odors in backfill or native soil? Is free product present? Is there a sheen on any water? Distinguish between ground water and surface run-off. Does a Rule 1166 situation exist? If so, date, time, and air quality personnel contacted.

NOTES:

Tank #	SIZE	MATERIAL	UL#	Appearance
6	5000 gal	gas	—	sound rusty
7	3000 gal	Kerosene	—	Rusty - very old
8	4000 gal	gas	—	Rusty - very old

Sample #	DATE	Description	location	Depth	Tests
6 W	4-1-92	sand/no odor	UST #6/west	2'	8020 / 8015 gas
6 E	4-1-92	sand/no odor	UST #6/East	2'	8020 / 8015 gas
7 W	4-1-92	sand/no odor	tank #7/West	2'	8015 diesel
7 E	4-1-92	sand/no odor	tank #7/East	2'	8015 diesel
8 W	4-2-92	"	UST #8 - west	2'	8020 / 8015
8 E	4-2-92	"	UST #8 - East	2'	8020 / 8015

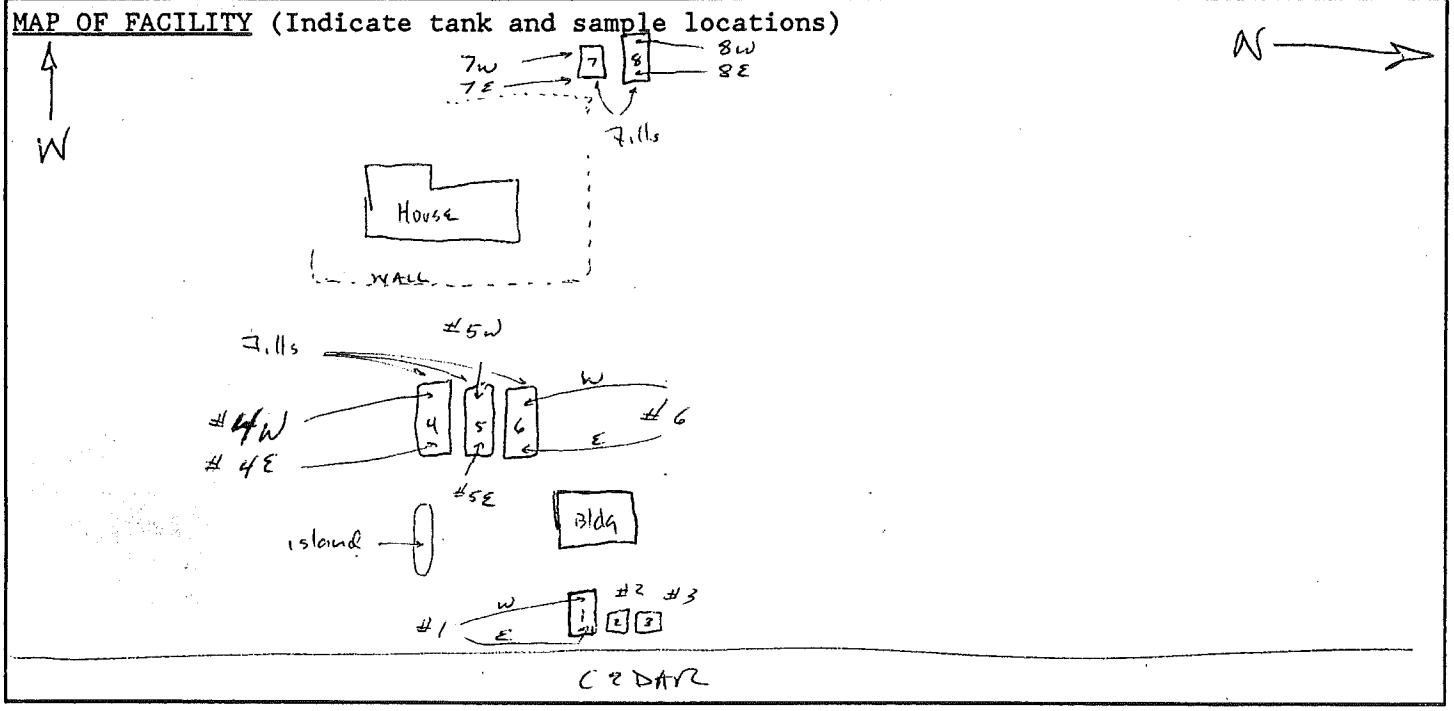
GM Brown
INSPECTOR

CONTRACTOR

	Tank#	Size	Material Held	UL #	Appearance (Rusty, holes, sound, etc.)
1.	#1	1500 gal	0.1 - cl		very rusty
2.	#2	800 gal	gas		very rusty
3.	#3	500 gal	gas		very rusty
4.	#4	5000 gal	gas		SOUND - RUSTY
5.	#5	5000 gal	gas		RUSTY - SOUND

(See over)

MAP OF FACILITY (Indicate tank and sample locations)



	Sample #	Date	Description (Color/Odor)	Location	Depth	EPA Test #'s
1.	#1W	4-2-92	sand - no odor	westend UST#1	2'	418.1
2.	#1E	4-2-92	sand - no odor	East end UST#1	2'	418.1
3.	#2	4-2-92	sand - no odor	Mid UST#2	2'	8020 / 8015
4.	#3	4-2-92	sand - no odor	Mid UST#3	2'	8020 / 8015
5.	#4W	4-1-92	sand, no odor	UST#4/West	3'	8020 / 8015 gas
6.	#4E	4-1-92	sand, no odor	UST#4/East	2'	8020 / 8015 gas
7.	#5W	4-1-92	sand / no odor	UST#5/West	2'	8020 / 8015 gas
8.	#5E	4-1-92	sand / no odor	UST#5/East	2'	8020 / 8015 gas

Samples Taken By: Stuart Duncan Laboratory: Centrum

Container: glass Labels: Y Splits: 0 Headspace: 0 Seals: 0

Refrigerated: Y Chain of Custody: Y

REQUIRED EPA TESTS

Gasoline: 8020 (BTXE) and 8015 (Modified for gas)
7420 (Pb) if tank held leaded gas.
Diesel: 8015 (Modified for diesel) or 418.1
Solvents: 8010
Waste Oil: 418.1 If contaminated, run m[illegible]s: 7030(Cd), 7190(Cr), 7950(Zn), 7420(Pb), 7080(As), [illegible]80(PCB's)

NOTE:

UGST's >1000 gallons require a minimum of two samples One sample should be taken at the fill end and the other at the turbine end. Both need to be from the native s[illegible] not the back fill, that is at least 2 feet below th[illegible]nk bottom.

SAN BERNARDINO COUNTY FIRE DEPARTMENT

SOURCE - ENVISION COMPLAINT

SITE LOCATION: **11188 CEDAR AVE, BLOOMINGTON**
RELATED ID:

RECORD ID: **CO0024268**
ACCOUNT ID:

FACILITY INFO

FACILITY:
FACILITY NAME:
FACILITY ADDRESS:
CITY: STATE: ZIP:

CONTACT

COMPLAINT

COMPLAINANT: **JENNII KOSSE - ENV HEALTH**
ADDRESS: **385 N ARROWHEAD AVE**
CITY: **SAN BERNARDINO**
COUNTRY: **USA** STATE: **CA** ZIP: **92415**
WORK PHONE: **909-387-4634** EXT:
HOME PHONE: EXT:
FAX:
EMAIL ADDRESS:

DISPOSITION

RECEIVED BY: **LINDA LARA-DAVIS**
RECEIVED DATE: **03/28/2007** RECEIVED TIME: **14:09:00**

ASSIGNED TO: **JOSEPH ASHBAKER**
ASSIGNED DATE: **04/17/2007** ASSIGNED TIME: **10:20:00**

STATUS: **CLOSED**
PROGRAM ELEMENT:

INFORMATION

PROPERTY INFO

PROP NAME:
BUS NAME:
ADDRESS: **11188 CEDAR AVE**
2nd ADDRESS:
CITY: **BLOOMINGTON** STATE: **CA** ZIP: **92316**
COUNTRY: **USA**
PHONE 1: **Not Specified** EXT:

OWNER'S INFO

OWNER NAME: **GEORGE & BETTY WALTERS**
BUSINESS NAME:
ADDRESS: **315 E NORMAN AVE**
2ND ADDRESS:
CITY: **ARCADIA** STATE: **CA** ZIP: **91006**
HOME PHONE: EXT:
WORK PHONE: EXT:

LOCATION

LOCATION

CENSUS:
DISTRICT: **DISTRICT 5**
LOCATION: **DISTRICT 4**
CITY CODE: **BLOOMINGTON**

JURISDICTION: **SAN BDNO CO. FIRE**
PROPERTY TYPE:
INSPECTION CODE:
APN:

ER INFO (UDF)

OES NUMBER: HOURS:
INCIDENT TYPE: **ENVIRONMENTAL HEALTH NOTICE**
ENVIROMENT TYPE: **RESIDENCE**
REFERRAL AGENCY: **ENV. HEALTH** REFERRAL DATE:
HAULER'S NAME:
NUMBER HOSPITALIZED:
CHEMICAL INFO 1:
AGENCY NOTIFICATION: **Y**
DRUG LAB: **N**
E/R TEAM RESPONED: **N**

RESPONDING AGENCY 1:
RESPONDING AGENCY 2:
REPONDER 1:
REPONDER 2:
REPONDER 3:
REPONDER 4:

CHEMICAL INFO:

RELEASED ☐ CONTAINED ☐ REMOVED ☐

SUSPECT

PARTY NAME:
COMPANY NAME:
ADDRESS:

DOB:
PHONE: EXT:
LICENSE NUMBER:

INSPECTED/RESOLVED

EMPLOYEE: **BRENDA MACGREGOR** RESOLVE DATE: **06/07/2007** REQUIRES FURTHER ACTION ☐

COMPLAINT DESCRIPTION: ILLEGAL ABOVE GROUND TANK

BLUE BOOK COMMENT

ENTERED BY: **VICTORIA CAREY** ENTERED DATE: **06/08/2007** UPDATED BY: UPDATED DATE:

June 08, 2007 10:25 AM - D7817

Complaint Number CO0024268

5/16/07 Upon investigation of the property it was determined that this was the same property that had a fire the previous year. At that time there was a large amount of 55 gallon drums on the property that had fire impingement. The drums have since been removed. The two ASTs were noted at the time of the fire. There was no flammable or combustible liquid storage at that time. The tanks are located in the back of the property with limited access. I was unable to access the property at his time. I am trying to contact Philip Salasar with code enforcement for referral back to them.

Case Closed
Brenda MacGregor

CUPA

San Bernardino County Fire Department • Hazardous Materials Division

620 South "E" Street, San Bernardino, CA 92415-0153 • (909) 386-8401 FAX (909) 386-8460 • www.sbcfire.org

HAZARDOUS WASTE GENERATOR AND HAZARDOUS MATERIALS HANDLER INSPECTION REPORT

FA #: 12985 Facility Name: Jakis Transportation, Inc Inspection Date: 2-26-2013

Site Address: 11134 Cedar Avenue Phone #: (626) 806-096

City: Bloomington Zip Code: 92316 EPA ID #: CAL000348005

Consent Granted by: ☑ Inspect ☐ Photograph Name: Mr. Oscar Ishii Title: Owner # Emp: 1 Packet left on site? Yes/No

Refer to Title 19 and Title 22 of the California Code of Regulations (CCR), Chapter 6.5 and 6.95 of the California Health and Safety Code (CHSC) and Division 3 of Title 2 of the San Bernardino County Code (CC)

THE FOLLOWING SECTIONS ARE IN VIOLATION IF THEY ARE CHECKED Exp 1/31/2014

General Requirements:

☐ 101. / 201. Hazardous Waste and/or Materials Permits not current. (CC 23.0602(a)) Sp. Handling, Sp. Generator
Compliance requirement: Submit fees within 30 days of billing.

☐ 104. EPA ID Number not obtained for waste generation. (CCR 66262.12(a)) Obtained Active
Compliance Requirement: Obtain permanent EPA ID Number by submitting Form 1358 to DTSC. Submit your EPA ID Number to this Division.

☐ 106. Facility not operated to prevent a spill or release. (CCR 66265.31) Okay
Compliance Requirement: Facility must conduct housekeeping & operate to prevent all spills. Signature on certification below denotes compliance.

☐ 107. A Contingency Plan has not been established. (CCR 66265.51(a))

☐ 202. A Business Plan has not been established. (CHSC 25503.5)

☑ 203. A Business Plan has not been submitted/ updated. (CHSC 25505) 6-28-2010
Compliance Requirement: ~~Submit the original and one copy of the Business Emergency/Contingency Plan to this Division.~~ NOTE: You must keep a current copy of your Business Emergency/Contingency Plan onsite and available at all times.

INVENTORY: 2X 240 gal Totes - Used Oils
1X480 Tank - New Oils
1X55 gal Drum - Used Anti freeze
2X55 gal Used Oil Filters

☐ 131. Training documentation not complete or available. (CCR 66262.34(d)(2)) Owner Operated
Compliance Requirement: Submit training documentation as required.

Container Storage and Labeling Requirements:

C ☑ 110. Hazardous waste containers are not labeled/marked. (CCR 66262.34(f)(3)) Missing - Corrected

C ☑ 111. Hazardous waste label is incomplete. (CCR 66262.34(f)(3)) Missing - Corrected

C ☑ 112. Accumulation start date is missing from tank/container. (CCR 66262.34(f)(2)) Missing - Corrected
Compliance Requirement: Hazardous waste label is to be applied to the tank/container. All fields and lines are to be correctly completed.

☐ 113. Accumulation time exceeded. (CCR 66262.34) Okay
Compliance Requirement: Dispose of waste using a licensed waste hauler within 30 days. Submit copies of disposal documents to this Division.

☐ 114. Hazardous waste container not sound. (CCR 66265.171) Sound

☐ 115. Hazardous waste container leaking. (CCR 66265.173(b)) Not leaking

☐ 116. Hazardous waste container open when not in use. (CCR 66265.173(a)) closed
Compliance Requirement: Waste containers must be sound, not leaking and closed when not in use.

Waste Management:

☐ 119. Hazardous waste managed unlawfully. (CHSC 25154) Discussed Universal Waste Mgmt
Compliance Requirement: Hazardous waste containers and aboveground tanks must be labeled, closed, and inspected (weekly or daily, as appropriate). Waste is to be removed by a licensed waste hauler within the allowed time periods.

☐ 128. Failure to retain **manifested** waste disposal records for 3 years. (CCR 66262.40(a))

☐ 137. Failure to retain **consolidated** waste disposal records for 3 years. (CHSC 25160.2(b)(3)) Records unavailable
Compliance Requirement: Submit copies of waste disposal records for the past

☑ 138. Unlawful management of used oil filters. (CCR 66266.130) Not Marked or Labeled
Compliance Requirement: Label all used oil filter containers with "DRAINED USED OIL FILTERS" and the accumulation start date.

Business Description: Diesel Truck Repair Service

Inspected By: Jerry Wong (Sign Name) Received By: Oscar Ishii (Sign Name) Title: Owner

Jerry Wong (Print Name) Mr. Oscar Ishii (Print Name) Report Date: 2/26/2013

Sign and submit the yellow copy of this form within 30 days with the required documents listed in each "Compliance Requirement" section.

I certify that I have met the compliance requirements of this Notice of Violation: _____ Name _____ Date

CUPA
San Bernardino County Fire Department • Hazardous Materials Division
620 South 'E' Street, San Bernardino, CA 92415-0153 • (909) 386-8401 FAX (909) 386-8460 •www.sbcfire.org

SUPPLEMENTAL INSPECTION REPORT

INSPECTION DATE: 2/26/2013

FACILITY ID	FACILITY NAME:	FACILITY LOCATION:
FA0012985	Jakis Transport, Inc	11134 Cedar Avenue
Consent Granted by: ☑ Inspect ☑ Photograph	NAME Mr. Oscar Ischiu	TITLE Owner

#203 - Failure to update the Business Plan (CHSC, Section 25508
Business Plans are to be updated annually.
The current Business Plan on file has not been updated
since 6/28/2010.

Compliance Requirement - Using the California
Electronic Reporting System (CERS) please
submit the elements of the Business Plan
within 30 days of receipt of this Inspection

If you have any CERS questions - please
contact the CERS HelpLine at (909) 386-8452

☐ NOTICE OF VIOLATION: THE VIOLATIONS NOTED ABOVE MUST BE CORRECTED WITHIN 30 DAYS. FAILURE TO COMPLY MAY RESULT IN LEGAL ACTION. THE CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED WITHIN THE TIME PERIOD NOTED ABOVE.

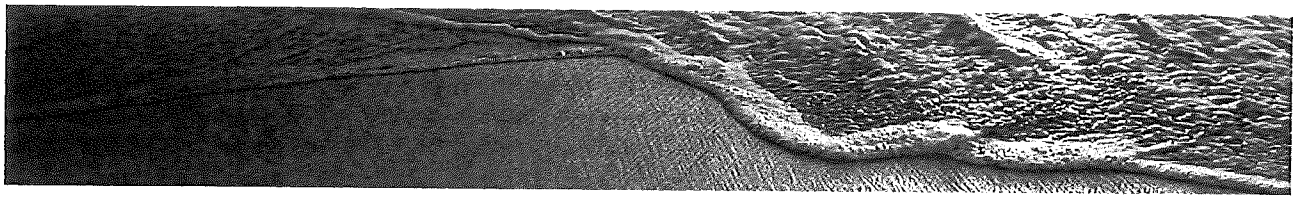
Inspected By: Jerry Wong (Sign Name) Received By: Oscar R. Ischiu (Sign Name) Title: Owner

Jerry Wong (Print Name) Mr. Oscar Ischiu (Print Name) Report Date: 2/26/2013

California Department of
Toxic Substances Control

Search

LOG OUT HWTS MENU REPORTS GET AN EPA-ID FAQ USER GUIDE DTSC HOME



HWTS EPA ID Profile

EPA ID: CAL000348081 Name: JAKIS TRANSPORT INC DBA COLOGANCIA SERVICE
Status: ACTIVE Inactive Date: Contact: OSCAR/JULIA ISCHIU
County: SAN BERNARDINO SIC: 99999 Record Entered: 2009-11-23 Last updated: 2013-02-14

	Name	Address	City	State	ZIP	Phone
Location	JAKIS TRANSPORT INC DBA COLOGANCIA SERVICE	11134 CEDAR AVE	BLOOMINGTON	CA	923163152	
Mailing		235 N TOLAND AVE	WEST COVINA	CA	917902354	
Owner	JAKIS TRANSPORT INC	235 N TOLAND AVE	WEST COVINA	CA	917902354	6268599250
Oper/Contact	OSCAR/JULIA ISCHIU	235 N TOLAND AVE	WEST COVINA	CA	917902354	6264853258

Based ONLY upon EPA ID: CAL000348081:

Calif. Manifests?	Out-of-State Manifests?	Transporter Registration?	Toxic Release Inventory Data?	Calsites Data?
NO	NO	NO	NO	NO

End of Report

DTSC Home | Cal/EPA | ARB | DPR | OEHHA | SWRCB | Governor | DTSC Director Debbie Raphael
DTSC Site Map

Copyright © 2010 State of California

CUPA

San Bernardino County Fire Department • Hazardous Materials Division
620 South "E" Street, San Bernardino, CA 92415-0153 • (909) 386-8401 FAX (909) 386-8460 • www.sbcfire.org

HAZARDOUS WASTE GENERATOR AND HAZARDOUS MATERIALS HANDLER INSPECTION REPORT

FA #: New. Facility Name: Jakis Transport Inspection Date: 1/05/10

Site Address: 11134 Cedar Ave. Phone #: (626) 806-0969

City: Bloomington Zip Code: 9231. EPA ID #: (old) CAL000342533

Consent Granted by:

☒ Inspect ☒ Photograph Name: Oscar Ischiv Title: Owner # Emp: 5-10 Paeket left on site? (Yes/No)

Refer to Title 19 and Title 22 of the California Code of Regulations (CCR), Chapter 6.5 and 6.95 of the California Health and Safety Code (CHSC) and Division 3 of Title 2 of the San Bernardino County Code (CC)

THE FOLLOWING SECTIONS ARE IN VIOLATION IF THEY ARE CHECKED

General Requirements:

☐ 101. / 201. Hazardous Waste and/or Materials Permits not current. (CC 23.0602(a)) Prior permits for old location.
Compliance requirement: Submit fees within 30 days of billing.

☐ 104. EPA ID Number not obtained for waste generation. (CCR 66262.12(a)) Applied for new # at new location
Compliance Requirement: Obtain permanent EPA ID Number by submitting Form 1358 to DTSC. Submit your EPA ID Number to this Division.

☐ 106. Facility not operated to prevent a spill or release. (CCR 66265.31) No spills observed
Compliance Requirement: Facility must conduct housekeeping & operate to prevent all spills. Signature on certification below denotes compliance.

☒ 107. A Contingency Plan has not been established. (CCR 66265.51(a))

☒ 202. A Business Plan has not been established. (CHSC 25503.5)

☒ 203. A Business Plan has not been submitted / updated. (CHSC 25505)

INVENTORY: 3x55gal drums used filters; 1x55gal drum used coolant; 1x30gal drum used grease; 2x250gal totes used oil; 1x450gal tank used oil.

Compliance Requirement: Submit the original and one copy of the Business Emergency/Contingency Plan to this Division. NOTE: You must keep a current copy of your Business Emergency/Contingency Plan onsite and available at all times.

☐ 131. Training documentation not complete or available. (CCR 66262.34(d)(2))
Compliance Requirement: Submit training documentation as required.

Container Storage and Labeling Requirements:

☐ 110. Hazardous waste containers are not labeled/marked. (CCR 66262.34(f)(3)) All containers labeled.

☐ 111. Hazardous waste label is incomplete. (CCR 66262.34(f)(3)) Labels are complete.

☐ 112. Accumulation start date is missing from tank/container. (CCR 66262.34(f)(2)) Dates included
Compliance Requirement: Hazardous waste label is to be applied to the tank/container. All fields and lines are to be correctly completed.

☐ 113. Accumulation time exceeded. (CCR 66262.34) Time not exceeded
Compliance Requirement: Dispose of waste using a licensed waste hauler within 30 days. Submit copies of disposal documents to this Division.

☐ 114. Hazardous waste container not sound. (CCR 66265.171) Containers are sound.

☐ 115. Hazardous waste container leaking. (CCR 66265.173(b)) No leaking containers

☐ 116. Hazardous waste container open when not in use. (CCR 66265.173(a)) No open containers
Compliance Requirement: Waste containers must be sound, not leaking and closed when not in use.

Waste Management:

☐ 119. Hazardous waste managed unlawfully. (CHSC 25154) Waste is managed lawfully.
Compliance Requirement: Hazardous waste containers and aboveground tanks must be labeled, closed, and inspected (weekly or daily, as appropriate). Waste is to be removed by a licensed waste hauler within the allowed time periods.

☐ 128. Failure to retain **manifested** waste disposal records for 3 years. (CCR 66262.40(a)) N/A

☐ 137. Failure to retain **consolidated** waste disposal records for 3 years. (CHSC 25160.2(b)(3)) Records available
Compliance Requirement: Submit copies of waste disposal records for the past

☐ 138. Unlawful management of used oil filters. (CCR 66266.130) Managed & labeled properly.
Compliance Requirement: Label all used oil filter containers with "DRAINED USED OIL FILTERS" and the accumulation start date.

Business Description: Performs maintenance on own fleet trucks only.

Inspected By: [signature] (Sign Name) Received By: Oscar R. Ischiv (Sign Name) Title:

Duane Ponalto (Print Name) Oscar R. Ischiv (Print Name) Report Date: 1/05/10

Sign and submit the yellow copy of this form within 30 days with the required documents listed in each "Compliance Requirement" section.

I certify that I have met the compliance requirements of this Notice of Violation: Oscar R. Ischiv (Name) 03/01/10. (Date)

Copied

CUPA

San Bernardino County Fire Department • Hazardous Materials Division
620 South "E" Street, San Bernardino, CA 92415-0153 • (909) 386-8401 FAX (909) 386-8460 • www.sbcfire.org

HAZARDOUS WASTE GENERATOR AND HAZARDOUS MATERIALS HANDLER INSPECTION REPORT

FA #: New 0012985 Facility Name: Jakis Transport Inspection Date: 1/05/10

Site Address: 11134 Cedar Ave. Phone #: (626) 806-0969

City: Bloomington Zip Code: 92316 EPA ID #: (old) CAL000342533

Consent Granted by:

☒ Inspect ☒ Photograph Name: Oscar Ischiv Title: Owner # Emp: 5-10 Packet left on site? Yes/No

Refer to Title 19 and Title 22 of the California Code of Regulations (CCR), Chapter 6.5 and 6.95 of the California Health and Safety Code (CHSC) and Division 3 of Title 2 of the San Bernardino County Code (CC)

THE FOLLOWING SECTIONS ARE IN VIOLATION IF THEY ARE CHECKED

General Requirements:

☐ 101. / 201. Hazardous Waste and/or Materials Permits not current. (CC 23.0602(a)) Prior permits for old location.
Compliance requirement: Submit fees within 30 days of billing.

☐ 104. EPA ID Number not obtained for waste generation. (CCR 66262.12(a)) Applied for new # at new location
Compliance Requirement: Obtain permanent EPA ID Number by submitting Form 1358 to DTSC. Submit your EPA ID Number to this Division.

☐ 106. Facility not operated to prevent a spill or release. (CCR 66265.31) No spills observed.
Compliance Requirement: Facility must conduct housekeeping & operate to prevent all spills. Signature on certification below denotes compliance.

☒ 107. A Contingency Plan has not been established. (CCR 66265.51(a))

☒ 202. A Business Plan has not been established. (CHSC 25503.5)

☒ 203. A Business Plan has not been submitted / updated. (CHSC 25505)

INVENTORY: 3x55 gal drums used filters; 1x55 gal drum used coolant; 1x30 gal drum used grease; 2x350 gal tanks used oil; 1x450 gal tank used oil.

Compliance Requirement: Submit the original and one copy of the Business Emergency/Contingency Plan to this Division. NOTE: You must keep a current copy of your Business Emergency/Contingency Plan onsite and available at all times.

☐ 131. Training documentation not complete or available. (CCR 66262.34(d)(2))
Compliance Requirement: Submit training documentation as required.

Container Storage and Labeling Requirements:

☐ 110. Hazardous waste containers are not labeled/marked. (CCR 66262.34(f)(3)) All containers labeled.

☐ 111. Hazardous waste label is incomplete. (CCR 66262.34(f)(3)) Labels are complete.

☐ 112. Accumulation start date is missing from tank/container. (CCR 66262.34(f)(2)) Dates included
Compliance Requirement: Hazardous waste label is to be applied to the tank/container. All fields and lines are to be correctly completed.

☐ 113. Accumulation time exceeded. (CCR 66262.34) Time not exceeded
Compliance Requirement: Dispose of waste using a licensed waste hauler within 30 days. Submit copies of disposal documents to this Division.

☐ 114. Hazardous waste container not sound. (CCR 66265.171) Containers are sound.

☐ 115. Hazardous waste container leaking. (CCR 66265.173(b)) No leaking containers.

☐ 116. Hazardous waste container open when not in use. (CCR 66265.173(a)) No open containers
Compliance Requirement: Waste containers must be sound, not leaking and closed when not in use.

Waste Management:

☐ 119. Hazardous waste managed unlawfully. (CHSC 25154) Waste is managed lawfully.
Compliance Requirement: Hazardous waste containers and aboveground tanks must be labeled, closed, and inspected (weekly or daily, as appropriate). Waste is to be removed by a licensed waste hauler within the allowed time periods.

☐ 128. Failure to retain **manifested** waste disposal records for 3 years. (CCR 66262.40(a)) N/A

☐ 137. Failure to retain **consolidated** waste disposal records for 3 years. (CHSC 25160.2(b)(3)) Records available
Compliance Requirement: Submit copies of waste disposal records for the past

☐ 138. Unlawful management of used oil filters. (CCR 66266.130) Managed & labeled properly.
Compliance Requirement: Label all used oil filter containers with "DRAINED USED OIL FILTERS" and the accumulation start date.

Business Description: Performs maintenance on own fleet trucks only.

Inspected By: [signature] Sign Name Received By: Oscar R. Ischiv Sign Name Title:

Duane Manalto Print Name Oscar R. Ischiv Print Name Report Date: 1/05/10

Sign and submit the yellow copy of this form within 30 days with the required documents listed in each "Compliance Requirement" section.

I certify that I have met the compliance requirements of this Notice of Violation:

Name Date

PHOTO NARRATIVE

PHOTO 1

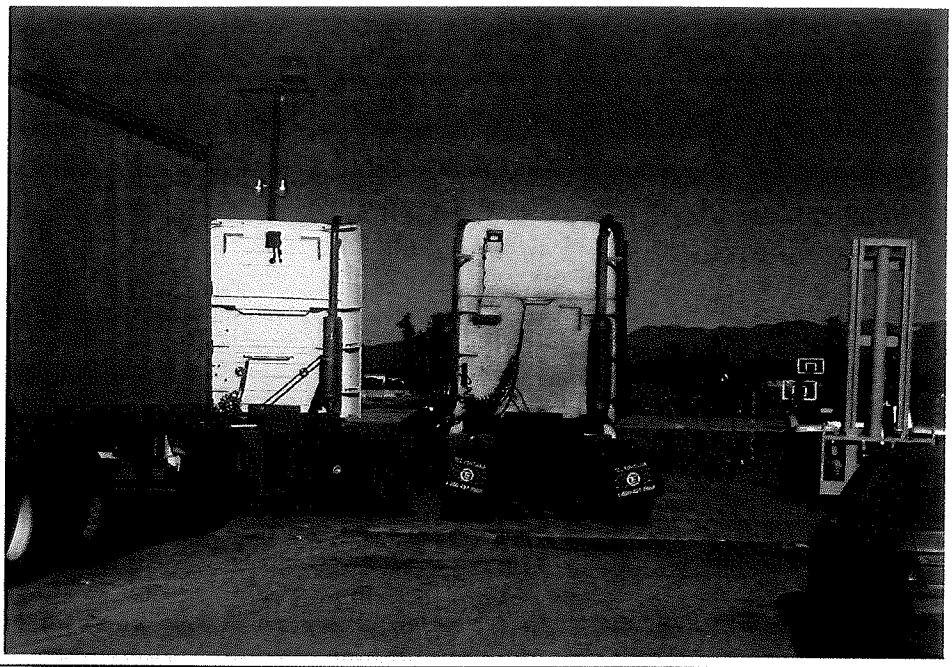
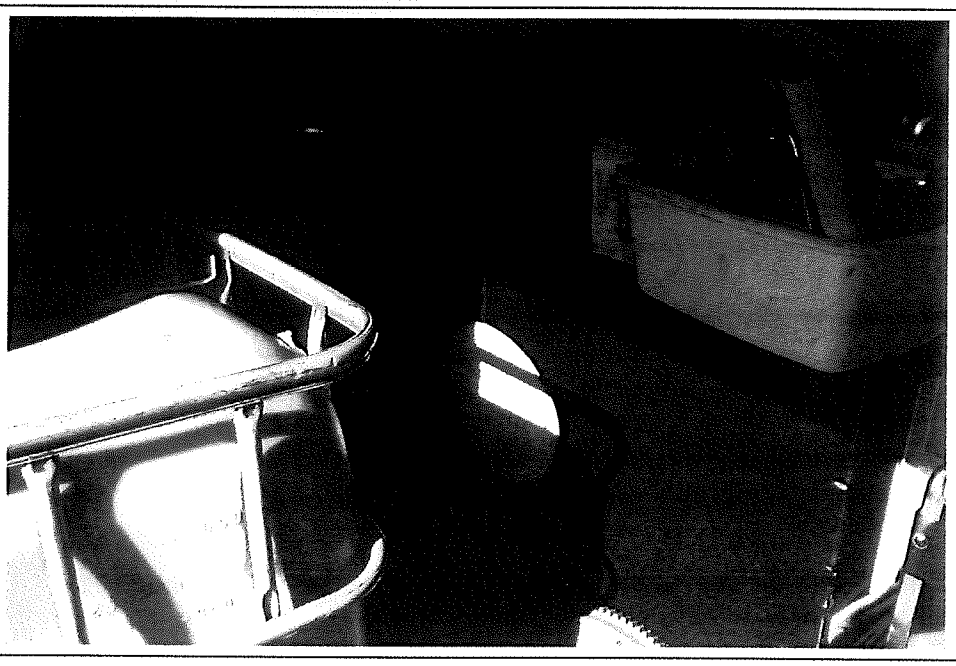


PHOTO 2



Facility/Case Name:	**Jakis Transport**	Facility ID #:	**New**
Address:	**11134 Cedar Ave., Bloomington**		
1) Description:	**This is the area where they operate and maintain the repair and maintenance area. The area is located in the northwest corner of the property.**		
2) Description:	**A converted trailer is used to store the 480 gallon tank of new oil and the two 250 gallon totes of used oil. The used oil totes were properly labeled.**		
Date Taken:	**January 5, 2010**		
Taken By:	**Dwane Pianalto**	Signature:	_____

Revised 02/27/03

PHOTO NARRATIVE

PHOTO 1

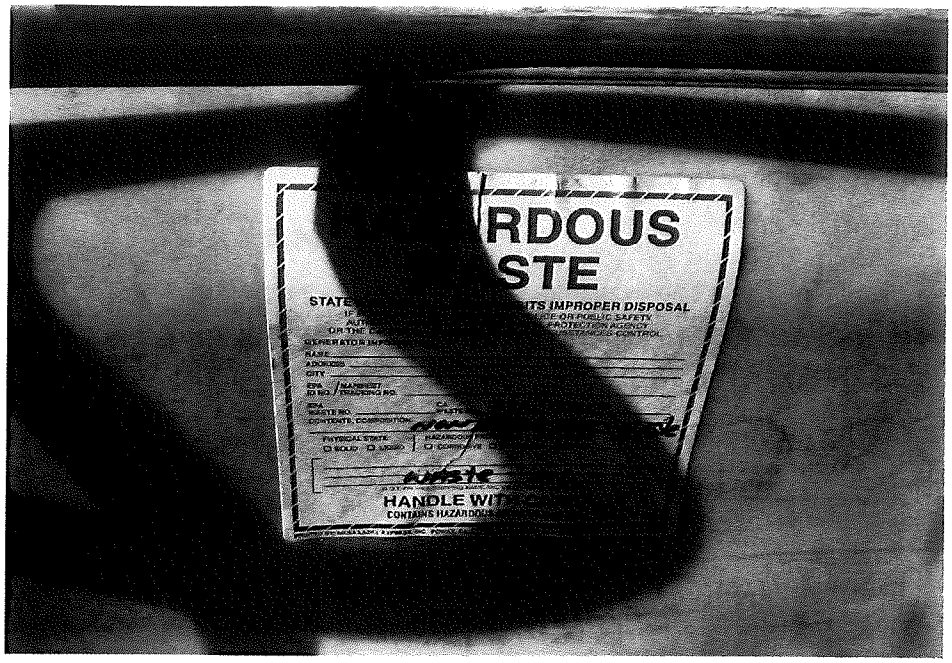


PHOTO 2

Facility/Case Name:	**Jakis Transport**	Facility ID #:	**New**
Address:	**11134 Cedar Ave., Bloomington**		
1) Description:	**This was the hazardous waste label on one of the used oil totes. The labels were updated to show the new location.**		
2) Description:	**These are the other containers including used oil filters and used coolant. All the drums were properly labeled.**		
Date Taken:	**January 5, 2010**		
Taken By:	**Dwane Pianalto**	Signature:	_____

Revised 02/27/03

March 1, 2016

Mr. Jeremy Mape
Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, CA 92660

Subject: Results of a Subsurface Investigation
11134 and 11138 Cedar Avenue
Bloomington, California

Dear Mr. Mape:

This letter presents the results of a subsurface investigation completed at the property located at 11134 and 11138 Cedar Avenue in the city of Bloomington, California (Site; Figure 1). The site consists of a commercial and residentially occupied property that Western Realco intends to redevelop with an industrial building.

BACKGROUND

Hazard Management Consulting, Inc. (HMC) completed a Phase I Environmental Site Assessment (ESA), dated December 22, 2014, for a larger property consisting of 14 contiguous parcels, which included the Site. HMC indicated that the Site was occupied for residential and commercial use, including truck repair, maintenance, and fueling purposes. Groundwater in the Site vicinity has been found at a depth of approximately 170 feet below ground surface (bgs) and flows in a southeasterly direction. During HMC's Site reconnaissance, some stains were noted in the truck maintenance buildings along the northwest boundary of the Site (Figure 2).

According to records provided by the San Bernardino County Fire Department (SBCFD), eight underground storage tanks (USTs) and a dispenser island were removed from the 11138 Cedar Avenue property in 1992 (HMC, 2014; Attachment A). The tank removal oversight was provided by the SBCFD. The SBCFD provided a sketch of the former UST locations, and noted that the USTs ranged in size from 500 to 5,000-gallons and contained gasoline, oil, or kerosene. No damage to the USTs or leaks was

noted by the SBCFD. Confirmation soil samples were required by the SBCFD beneath the tank excavations, however the laboratory analyses were not provided in the SBCFD records.

Based on the results of the Phase I ESA, HMC recommended completing a subsurface investigation in the locations of the former USTs and associated dispenser island to verify that no impacted soils were present. HMC also recommended collecting soil samples in the vicinity of surface staining associated with the truck repair operations. As noted above, the Site was used by "mom-and-pop" truck repair businesses. To further assess areas of unknown environmental concern, HMC also recommended completing a soil gas survey throughout the Site as a screening technique to identify possible "hot-spots" that may be indicative of a release.

OBJECTIVES

The objectives of the investigation described herein were to:

- Assess whether elevated concentrations of volatile organic compounds (VOCs) were present in soil gas in the vicinity of the former USTs and fuel dispenser island;
- Assess whether elevated concentrations of VOCs and petroleum hydrocarbons were present in shallow soil in areas of surficial staining; and
- Assess whether elevated concentrations of VOCs were present throughout the Site that might indicate an unknown area of concern.

SUBSURFACE INVESTIGATION

The subsurface investigation was completed on February 9 and 10, 2016 and consisted of advancing 6 soil gas points in the vicinity of the former USTs and fuel dispenser island; 15 soil gas points throughout the Site as part of a general screening; and 2 soil borings in the vicinity of surficial staining (Figure 2). Prior to drilling activities, Underground Service Alert (USA) was notified of the upcoming work. A site specific Health and Safety Plan was prepared for use by HMC representatives. Work was conducted under the direction and oversight of Mr. Paul Roberts, a California Professional Geologist from Ardent.

Pilot soil borings were drilled utilizing direct push or hand-auger drilling equipment for each soil gas point. Soil vapor monitoring points (SVMPs) were installed in each soil gas point at selected depths. SVMPs were installed within each soil gas point utilizing 0.25-inch Nylaflow tubing. An approximately

one and one half foot sand filter pack was placed around the tip of each SVMP, followed by one half foot of dry granular bentonite. The remaining portion of the borehole was filled with hydrated granular bentonite. The SVMPs were allowed to equilibrate for a minimum of 2 hours prior to sampling. The installation and sampling was completed in general accordance with current California Department of Toxic Substance Control (DTSC) guidelines.

Soil borings were advanced using direct push equipment to a total depth of 5 feet bgs. Soil samples were collected at depth of 2.5 and 5 feet bgs. Sampling locations and areas of concern are presented in Figure 2 and laboratory reports are presented in Attachment B. The following sections describe the results of the investigations.

Former USTs and Associated Dispenser Island

As shown on Figure 2, soil gas points SG12 and SG15 through SG19 were drilled using direct-push methods in the vicinity of the former USTs and dispenser island to a depth of approximately 10 feet bgs (Figure 2). The tank sizes and contents are presented on Figure 2. The locations were estimated based on the unscaled sketch provided in the SBCFD file. The locations were estimated based on a comparison of similar features (such as the house in the southeastern portion of the Site) that was also noted on the 1992 SBCFD sketch (Attachment A). Tanks of these sizes are typically 4 to 5 feet in diameter and the tops of which are placed at a depth of at least 4 feet bgs for geotechnical purposes. The bottom of the UST excavation would be approximately 8 to 9 feet deep. Fuel pipelines are typically installed at depths of 2 to 4 feet deep.

On February 10, 2016, the SVMPs were sampled and analyzed by Jones Environmental, Inc. (Jones) using a mobile laboratory. Prior to sampling, each SVMP was evacuated with an electric pump of 3 purge volumes, as per the DTSC guidelines. Soil gas samples were collected from each SVMP in a gas-tight syringe and immediately analyzed for VOCs including fuel oxygenates in general accordance with EPA Method No. 8260B. The laboratory analytical results indicated no detectable concentrations of VOCs from the SVMPs.

Overall Screening Throughout the Site

The remaining 15 soil gas points were drilled in a general grid pattern throughout the Site to a total depth of 5 feet bgs as a general screening technique to asses for possible "hot spots" indicative of a possible release associated with the current and/or historical uses of the Site. The soil gas points were drilled using direct-push methods, except for SG20, which was hand augered.

The SVMPs were sampled and analyzed on February 10, 2016 by Jones utilizing the methods noted above. Due to the mobile laboratory's limit of analyzing 20 samples at a time, the sample from SG20 was collected in a Summa canister for analyses at Jones's stationary laboratory. The SVMP at SG6 had been removed overnight by an unknown party; therefore no samples could be collected from this point. The laboratory analytical results indicated no detectable concentrations of VOCs from the SVMPs.

Surficial Staining

As shown on Figure 2, a two soil borings (designated B1 and B2) were advanced adjacent to notable areas of surficial staining located in the truck maintenance buildings in the northwest portion of the Site. Ardent used a photoionization detector (PID) to measure VOCs in soil samples collected at 2.5 and 5 feet bgs within each boring. PID readings indicated no VOC concentrations and no stained or odorous soil was noted. The 2.5 foot soil sample from each boring was chosen due to the possible source being aboveground. The 2.5-foot sample was analyzed for total petroleum hydrocarbons carbon chain C_4-C_{32} (TPHcc) and VOCs in general accordance with EPA Method Nos. 8015B (modified) and 8260B. Laboratory results indicated no detectable concentrations of VOCs and TPH.

CONCLUSIONS AND RECOMMENDATIONS

Following completion of a Phase I ESA, HMC recommended completing a soil and soil gas investigation to further assess three areas of possible concern including the former USTs and associated dispenser island, surficial staining, and a general screening throughout the site. All of the soil and soil gas samples analyzed reported no detectable concentrations of the parameters analyzed. No "hot-spots" indicative

of a release was noted in soil gas throughout the site. Based on the results of the soil and soil gas samples, there is a low likelihood that elevated concentrations of VOCs and/or TPH are present at the site. Based on these data, the areas of concern noted during the Phase I ESA would no longer be considered an environmental issue. HMC, therefore, recommends no further investigations at this time.

If you have any questions or comments regarding this report, please call me at your convenience.

Sincerely,
Hazard Management Consulting, Inc.

Mark S. Cousineau
Principal

Paul A. Roberts, P.G.
Principal Geologist

PAR/MSC/nw

Attachment: Figure 1 – Site Location Map
Figure 2 – Sample Location Map
Attachment A – San Bernardino County UST Removal Records
Attachment B – Laboratory Reports

Distribution: (1) Addressee – electronic copy

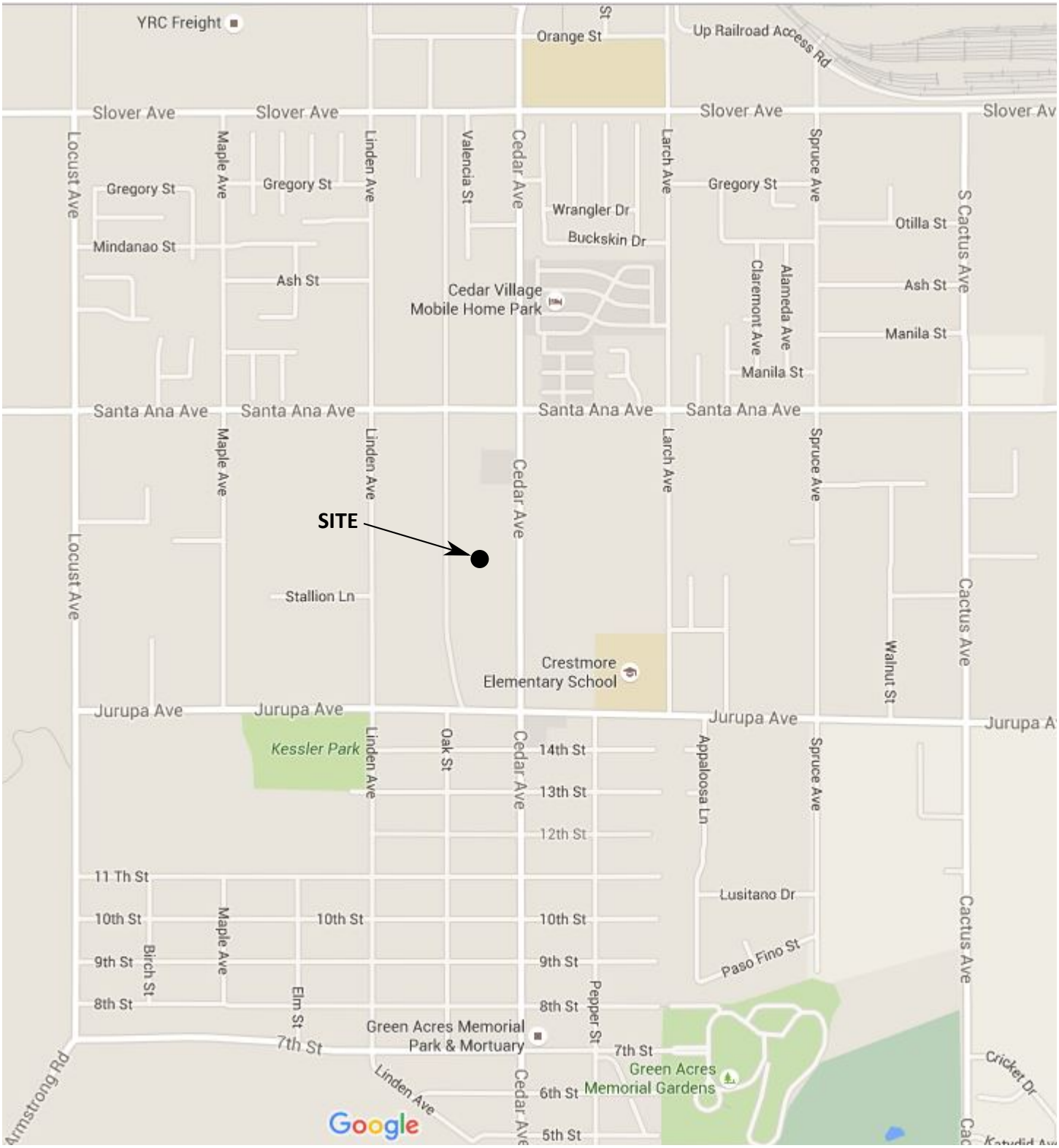
References

Department of Toxic Substances Control (DTSC), 2011, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance): Guideline to evaluate vapor intrusion of hazardous substances into buildings, dated October.

Department of Toxic Substance Control (DTSC), 2015, Advisory Active Soil Gas Investigations: Soil gas sampling point installation and sampling procedures, dated July.

Department of Toxic Substances Control (DTSC), Human and Ecological Risk Office (HERO), 2016, Human Health Risk Assessment (HHRA) Note 3, DTSC-Modified Screening Levels (DTSL-SLs): Modified screening levels based on the Federal Environmental Protection Agency (EPA) Regional Screening Levels, dated January.

Hazard Management Consulting (HMC), 2014, Phase One Environmental Site Assessment, Northwest Corner of Cedar and Jurupa Avenues, Bloomington, California: Report prepared for Western Realco, Newport Beach, California, dated December 22.

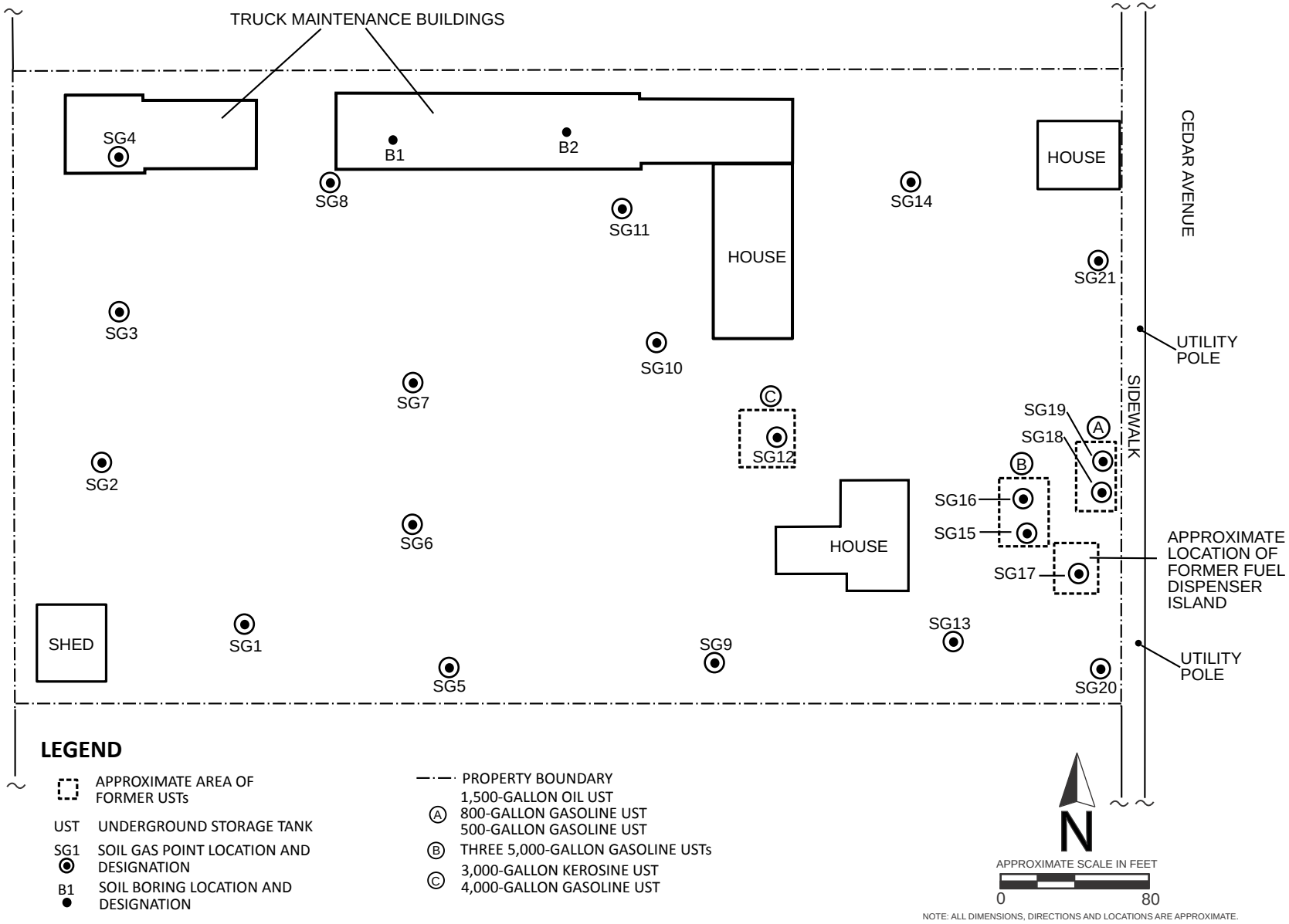


N

NO SCALE

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

HMC HAZARD MANAGEMENT CONSULTING	PROJECT NO. 100736001	**SITE LOCATION MAP**	FIGURE 1
	DATE 02/16	11134 AND 11138 CEDAR AVENUE BLOOMINGTON, CALIFORNIA	



HMC
HAZARD MANAGEMENT CONSULTING

PROJECT NO. 100736001	SAMPLE LOCATION MAP	FIGURE 2
DATE 02/16	11134 AND 11138 CEDAR AVENUE BLOOMINGTON, CALIFORNIA	

ATTACHMENT A

SAN BERNARDINO COUNTY FIRE DEPARTMENT UST REMOVAL RECORDS

SAN BERNARDINO COUNTY - DEH
HAZARDOUS MATERIALS FIELD SERVICES PROGRAM
UNDERGROUND STORAGE TANK REMOVAL
INSPECTION FORM

DATE: April 1 1992 TIME: 9:30 am

FACILITY NAME: Mrs Pound / Jim's Pipeline Service

LOCATION: 11138 Cedar Bloomington

CONTRACTOR: Duncan

INSPECTORS PRESENT DEHS: GMB FIRE: Huddleston

AQMD: OTHER:

	QUANTITY	HAULER	DESTINATION
Triple Rinsate:	180 (oil) 600 gal	Waste Enviro Serv & Trans Inc - Corona	Industrial Service
Tanks:	8	John R. Golden & Mc Bride	A & C

Degassing Contractor: D. Rock - Anaheim

Manifest #: 91589733 SCAQMD Reference #: 031992-02 Dry Ice Used (10-15 lb/1000 gals): 450# total

91589742 → for Oil

Are there visible stains or residual odors in backfill or native soil? Is free product present? Is there a sheen on any water? Distinguish between ground water and surface run-off. Does a Rule 1166 situation exist? If so, date, time, and air quality personnel contacted.

NOTES:

Tank #	SIZE	MATERIAL	UL #	Appearance
6	5000 gal	gas	—	sound rusty
7	3000 gal	Kerosene	—	Rusty - very old
8	4000 gal	gas	—	Rusty - very old

Sample #	DATE	Description	Location	Depth	Tests
6 W	4-1-92	sand/no odor	UST #6/west	2'	8020 / 8015 gas
6 E	4-1-92	sand/no odor	UST #6/East	2'	8020 / 8015 gas
7 W	4-1-92	sand/no odor	tank #7/West	2'	8015 diesel
7 E	4-1-92	sand/no odor	tank #7/East	2'	8015 diesel
8 W	4-2-92	"	UST #8 - West	2'	8020 / 8015
8 E	4-2-92	"	UST #8 - East	2'	8020 / 8015

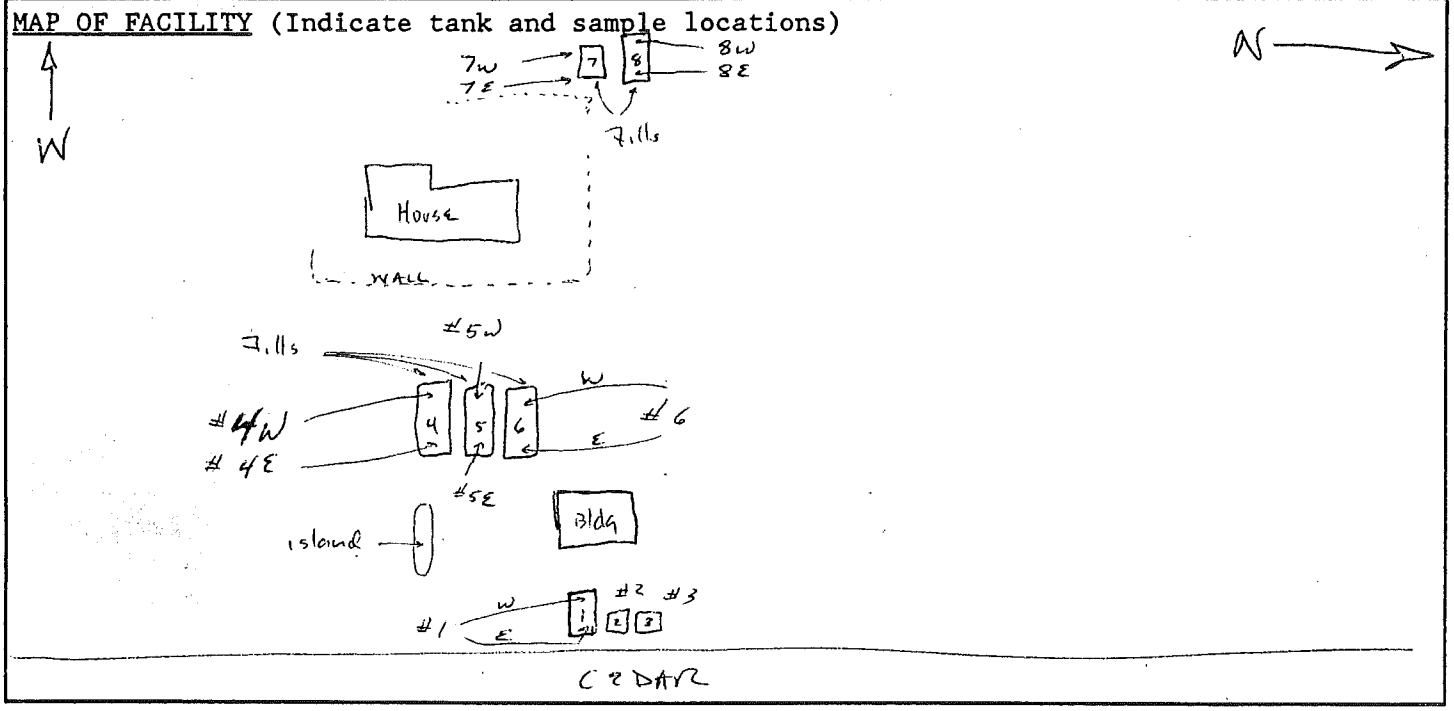
GM Brown
INSPECTOR

CONTRACTOR

	Tank#	Size	Material Held	UL #	Appearance (Rusty, holes, sound, etc.)
1.	#1	1500 gal	0.1 - cl		very rusty
2.	#2	800 gal	gas		very rusty
3.	#3	500 gal	gas		very rusty
4.	#4	5000 gal	gas		SOUND - RUSTY
5.	#5	5000 gal	gas		RUSTY - SOUND

(See over)

MAP OF FACILITY (Indicate tank and sample locations)



	Sample #	Date	Description (Color/Odor)	Location	Depth	EPA Test #'s
1.	#1W	4-2-92	sand - no odor	westend UST#1	2'	418.1
2.	#1E	4-2-92	sand - no odor	East end UST#1	2'	418.1
3.	#2	4-2-92	sand - no odor	Mid UST#2	2'	8020 / 8015
4.	#3	4-2-92	sand - no odor	Mid UST#3	2'	8020 / 8015
5.	#4W	4-1-92	sand, no odor	UST#4/West	3'	8020 / 8015 gas
6.	#4E	4-1-92	sand, no odor	UST#4/East	2'	8020 / 8015 gas
7.	#5W	4-1-92	sand / no odor	UST#5/West	2'	8020 / 8015 gas
8.	#5E	4-1-92	sand / no odor	UST#5/East	2'	8020 / 8015 gas

Samples Taken By: Stuart Duncan Laboratory: Centrum

Container: glass Labels: Y Splits: 0 Headspace: 0 Seals: 0

Refrigerated: Y Chain of Custody: Y

REQUIRED EPA TESTS

Gasoline: 8020 (BTXE) and 8015 (Modified for gas)
7420 (Pb) if tank held leaded gas.
Diesel: 8015 (Modified for diesel) or 418.1
Solvents: 8010
Waste Oil: 418.1 If contaminated, run m[illegible]s: 7030(Cd), 7190(Cr), 7950(Zn), 7420(Pb), 7080(As), [illegible]80(PCB's)

NOTE:

UGST's >1000 gallons require a minimum of two samples One sample should be taken at the fill end and the other at the turbine end. Both need to be from the native s[illegible] not the back fill, that is at least 2 feet below th[illegible]nk bottom.

ATTACHMENT B

LABORATORY REPORTS

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	D-1083 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/10/2016 2/10/2016
Project Name:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. EPA 8260B - Volatile Organics by GC/MS + Oxygenates

Sampling – Soil Gas samples were collected in glass gas-tight syringes equipped with Teflon plungers. One soil gas sample was collected in a 1-L SUMMA Canister.

A tracer gas mixture of n-propanol and n-pentane was placed at the tubing-surface interface before sampling. These compounds were analyzed during the 8260B analytical run to determine if there were surface leaks into the subsurface due to improper installation of the probe. No n-propanol or n-pentane was found in any of the samples reported herein.

The sampling rate was approximately 200 cc/min, except if noted differently on the chain of custody record, using a glass gas-tight syringe. Purging was completed using a pump set at approximately 200 cc/min, except if noted differently on the chain of custody record. A default of 3 purge volumes was used as recommended by July 2015 DTSC/RWQCB guidance documents.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using EPA Method 8260 that includes extra compounds required by DTSC/RWQCB (such as Freon 113). Instrument Continuing Calibration Verification, QC Reference Standards, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. In addition, a Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were analyzed with each batch of Soil Gas samples. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 30 minutes of sampling.

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	D-1083
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/10/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-1**	**SG-2**	**SG-5**	**SG-7**	**SG-8**		
JEL ID:	**D-1083-01**	**D-1083-02**	**D-1083-03**	**D-1083-04**	**D-1083-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromodichloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
Bromoform	ND	ND	ND	ND	ND	20.0	µg/m3
n-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
sec-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
tert-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Carbon tetrachloride	ND	ND	ND	ND	ND	20.0	µg/m3
Chlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Chloroform	ND	ND	ND	ND	ND	20.0	µg/m3
2-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromochloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromomethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
2,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-1**	**SG-2**	**SG-5**	**SG-7**	**SG-8**		
JEL ID:	**D-1083-01**	**D-1083-02**	**D-1083-03**	**D-1083-04**	**D-1083-05**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
Ethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Freon 113	ND	ND	ND	ND	ND	100	µg/m3
Hexachlorobutadiene	ND	ND	ND	ND	ND	20.0	µg/m3
Isopropylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Isopropyltoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Methylene chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Naphthalene	ND	ND	ND	ND	ND	20.0	µg/m3
n-Propylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Styrene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Tetrachloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Toluene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Trichloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Trichlorofluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Vinyl chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Xylenes	ND	ND	ND	ND	ND	20.0	µg/m3
MTBE	ND	ND	ND	ND	ND	100	µg/m3
Ethyl-tert-butylether	ND	ND	ND	ND	ND	100	µg/m3
Di-isopropylether	ND	ND	ND	ND	ND	100	µg/m3
tert-amylmethylether	ND	ND	ND	ND	ND	100	µg/m3
tert-Butylalcohol	ND	ND	ND	ND	ND	1000	µg/m3
TIC:							
n-propanol	ND	ND	ND	ND	ND	200	µg/m3
n-pentane	ND	ND	ND	ND	ND	20.0	µg/m3
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	104%	102%	103%	103%	102%	60 - 140	
Toluene-d_8	98%	97%	97%	98%	98%	60 - 140	
4-Bromofluorobenzene	98%	97%	97%	96%	96%	60 - 140	
	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083		

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	D-1083
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/10/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-9**	**SG-10**	**SG-3**	**SG-4**	**SG-4 DUP**		
JEL ID:	**D-1083-06**	**D-1083-07**	**D-1083-08**	**D-1083-09**	**D-1083-10**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromodichloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
Bromoform	ND	ND	ND	ND	ND	20.0	µg/m3
n-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
sec-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
tert-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Carbon tetrachloride	ND	ND	ND	ND	ND	20.0	µg/m3
Chlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Chloroform	ND	ND	ND	ND	ND	20.0	µg/m3
2-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromochloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromomethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
2,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-9**	**SG-10**	**SG-3**	**SG-4**	**SG-4 DUP**		
JEL ID:	**D-1083-06**	**D-1083-07**	**D-1083-08**	**D-1083-09**	**D-1083-10**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
Ethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Freon 113	ND	ND	ND	ND	ND	100	µg/m3
Hexachlorobutadiene	ND	ND	ND	ND	ND	20.0	µg/m3
Isopropylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Isopropyltoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Methylene chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Naphthalene	ND	ND	ND	ND	ND	20.0	µg/m3
n-Propylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Styrene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Tetrachloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Toluene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Trichloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Trichlorofluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Vinyl chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Xylenes	ND	ND	ND	ND	ND	20.0	µg/m3
MTBE	ND	ND	ND	ND	ND	100	µg/m3
Ethyl-tert-butylether	ND	ND	ND	ND	ND	100	µg/m3
Di-isopropylether	ND	ND	ND	ND	ND	100	µg/m3
tert-amylmethylether	ND	ND	ND	ND	ND	100	µg/m3
tert-Butylalcohol	ND	ND	ND	ND	ND	1000	µg/m3
TIC:							
n-propanol	ND	ND	ND	ND	ND	200	µg/m3
n-pentane	ND	ND	ND	ND	ND	20.0	µg/m3
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	104%	105%	101%	101%	100%	60 - 140	
Toluene-d_8	97%	96%	100%	96%	96%	60 - 140	
4-Bromofluorobenzene	94%	95%	99%	95%	95%	60 - 140	
	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083		

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	D-1083 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/10/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-11**	**SG-12**	**SG-14**	**SG-13**	**SG-15**		
JEL ID:	**D-1083-11**	**D-1083-12**	**D-1083-13**	**D-1083-14**	**D-1083-15**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromodichloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
Bromoform	ND	ND	ND	ND	ND	20.0	µg/m3
n-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
sec-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
tert-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Carbon tetrachloride	ND	ND	ND	ND	ND	20.0	µg/m3
Chlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Chloroform	ND	ND	ND	ND	ND	20.0	µg/m3
2-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromochloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromomethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
2,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-11**	**SG-12**	**SG-14**	**SG-13**	**SG-15**		
JEL ID:	**D-1083-11**	**D-1083-12**	**D-1083-13**	**D-1083-14**	**D-1083-15**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
Ethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Freon 113	ND	ND	ND	ND	ND	100	µg/m3
Hexachlorobutadiene	ND	ND	ND	ND	ND	20.0	µg/m3
Isopropylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Isopropyltoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Methylene chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Naphthalene	ND	ND	ND	ND	ND	20.0	µg/m3
n-Propylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Styrene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Tetrachloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Toluene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Trichloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Trichlorofluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Vinyl chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Xylenes	ND	ND	ND	ND	ND	20.0	µg/m3
MTBE	ND	ND	ND	ND	ND	100	µg/m3
Ethyl-tert-butylether	ND	ND	ND	ND	ND	100	µg/m3
Di-isopropylether	ND	ND	ND	ND	ND	100	µg/m3
tert-amylmethylether	ND	ND	ND	ND	ND	100	µg/m3
tert-Butylalcohol	ND	ND	ND	ND	ND	1000	µg/m3
TIC:							
n-propanol	ND	ND	ND	ND	ND	200	µg/m3
n-pentane	ND	ND	ND	ND	ND	20.0	µg/m3
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	102%	101%	102%	106%	103%	60 - 140	
Toluene-d_8	95%	97%	97%	96%	96%	60 - 140	
4-Bromofluorobenzene	94%	95%	95%	95%	94%	60 - 140	
	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083		

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	D-1083 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/10/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-16**	**SG-17**	**SG-18**	**SG-19**	**SG-21**		
JEL ID:	**D-1083-16**	**D-1083-17**	**D-1083-18**	**D-1083-19**	**D-1083-20**	**Practical Quantitation Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Bromodichloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
Bromoform	ND	ND	ND	ND	ND	20.0	µg/m3
n-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
sec-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
tert-Butylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Carbon tetrachloride	ND	ND	ND	ND	ND	20.0	µg/m3
Chlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Chloroform	ND	ND	ND	ND	ND	20.0	µg/m3
2-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Chlorotoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromochloromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	20.0	µg/m3
Dibromomethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
2,2-Dichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SG-16**	**SG-17**	**SG-18**	**SG-19**	**SG-21**		
JEL ID:	**D-1083-16**	**D-1083-17**	**D-1083-18**	**D-1083-19**	**D-1083-20**	**Practical Quantitation Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	20.0	µg/m3
Ethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Freon 113	ND	ND	ND	ND	ND	100	µg/m3
Hexachlorobutadiene	ND	ND	ND	ND	ND	20.0	µg/m3
Isopropylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
4-Isopropyltoluene	ND	ND	ND	ND	ND	20.0	µg/m3
Methylene chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Naphthalene	ND	ND	ND	ND	ND	20.0	µg/m3
n-Propylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Styrene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Tetrachloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Toluene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	20.0	µg/m3
Trichloroethylene	ND	ND	ND	ND	ND	20.0	µg/m3
Trichlorofluoromethane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	20.0	µg/m3
Vinyl chloride	ND	ND	ND	ND	ND	20.0	µg/m3
Xylenes	ND	ND	ND	ND	ND	20.0	µg/m3
MTBE	ND	ND	ND	ND	ND	100	µg/m3
Ethyl-tert-butylether	ND	ND	ND	ND	ND	100	µg/m3
Di-isopropylether	ND	ND	ND	ND	ND	100	µg/m3
tert-amylmethylether	ND	ND	ND	ND	ND	100	µg/m3
tert-Butylalcohol	ND	ND	ND	ND	ND	1000	µg/m3
TIC:							
n-propanol	ND	ND	ND	ND	ND	200	µg/m3
n-pentane	ND	ND	ND	ND	ND	20.0	µg/m3
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	105%	99%	101%	99%	101%	60 - 140	
Toluene-d_8	97%	102%	99%	97%	98%	60 - 140	
4-Bromofluorobenzene	96%	99%	96%	94%	97%	60 - 140	
	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083	D1-021016-D-1083		

ND= Not Detected

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	D-1083
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/10/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID: **SG-20**

JEL ID:	**D-1083-21**	**Practical Quantitation Limit**	**Units**
Analytes:			
Benzene	ND	20.0	µg/m3
Bromobenzene	ND	20.0	µg/m3
Bromodichloromethane	ND	20.0	µg/m3
Bromoform	ND	20.0	µg/m3
n-Butylbenzene	ND	20.0	µg/m3
sec-Butylbenzene	ND	20.0	µg/m3
tert-Butylbenzene	ND	20.0	µg/m3
Carbon tetrachloride	ND	20.0	µg/m3
Chlorobenzene	ND	20.0	µg/m3
Chloroform	ND	20.0	µg/m3
2-Chlorotoluene	ND	20.0	µg/m3
4-Chlorotoluene	ND	20.0	µg/m3
Dibromochloromethane	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	20.0	µg/m3
Dibromomethane	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	20.0	µg/m3
1,1-Dichloroethane	ND	20.0	µg/m3
1,2-Dichloroethane	ND	20.0	µg/m3
1,1-Dichloroethene	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	20.0	µg/m3
1,2-Dichloropropane	ND	20.0	µg/m3
1,3-Dichloropropane	ND	20.0	µg/m3
2,2-Dichloropropane	ND	20.0	µg/m3
1,1-Dichloropropene	ND	20.0	µg/m3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID: SG-20

JEL ID:	**D-1083-21**	**Practical Quantitation Limit**	**Units**
Analytes:			
cis-1,3-Dichloropropene	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	20.0	µg/m3
Ethylbenzene	ND	20.0	µg/m3
Freon 113	ND	100	µg/m3
Hexachlorobutadiene	ND	20.0	µg/m3
Isopropylbenzene	ND	20.0	µg/m3
4-Isopropyltoluene	ND	20.0	µg/m3
Methylene chloride	ND	20.0	µg/m3
Naphthalene	ND	20.0	µg/m3
n-Propylbenzene	ND	20.0	µg/m3
Styrene	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	20.0	µg/m3
Tetrachloroethylene	ND	20.0	µg/m3
Toluene	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	20.0	µg/m3
Trichloroethylene	ND	20.0	µg/m3
Trichlorofluoromethane	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	20.0	µg/m3
Vinyl chloride	ND	20.0	µg/m3
Xylenes	ND	20.0	µg/m3
MTBE	ND	100	µg/m3
Ethyl-tert-butylether	ND	100	µg/m3
Di-isopropylether	ND	100	µg/m3
tert-amylmethylether	ND	100	µg/m3
tert-Butylalcohol	ND	1000	µg/m3
TIC:			
n-propanol	ND	200	µg/m3
n-pentane	ND	20.0	µg/m3
Dilution Factor	1		

Surrogate Recoveries:		**QC Limits**
Dibromofluoromethane	98%	60 - 140
Toluene-d_8	95%	60 - 140
4-Bromofluorobenzene	121%	60 - 140

E2-021116-
E-0488

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	D-1083 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/10/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**	**METHOD BLANK**	**SAMPLING BLANK**		
JEL ID:	**D-1083-22**	**D-1083-23**	**D-1083-27**	**D-1083-28**	**Practical Quantitation Limit**	**Units**
Analytes:						
Benzene	ND	ND	ND	ND	20.0	µg/m3
Bromobenzene	ND	ND	ND	ND	20.0	µg/m3
Bromodichloromethane	ND	ND	ND	ND	20.0	µg/m3
Bromoform	ND	ND	ND	ND	20.0	µg/m3
n-Butylbenzene	ND	ND	ND	ND	20.0	µg/m3
sec-Butylbenzene	ND	ND	ND	ND	20.0	µg/m3
tert-Butylbenzene	ND	ND	ND	ND	20.0	µg/m3
Carbon tetrachloride	ND	ND	ND	ND	20.0	µg/m3
Chlorobenzene	ND	ND	ND	ND	20.0	µg/m3
Chloroform	ND	ND	ND	ND	20.0	µg/m3
2-Chlorotoluene	ND	ND	ND	ND	20.0	µg/m3
4-Chlorotoluene	ND	ND	ND	ND	20.0	µg/m3
Dibromochloromethane	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	20.0	µg/m3
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	20.0	µg/m3
Dibromomethane	ND	ND	ND	ND	20.0	µg/m3
1,2- Dichlorobenzene	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichlorobenzene	ND	ND	ND	ND	20.0	µg/m3
1,4-Dichlorobenzene	ND	ND	ND	ND	20.0	µg/m3
Dichlorodifluoromethane	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethane	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloroethane	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloroethene	ND	ND	ND	ND	20.0	µg/m3
cis-1,2-Dichloroethene	ND	ND	ND	ND	20.0	µg/m3
trans-1,2-Dichloroethene	ND	ND	ND	ND	20.0	µg/m3
1,2-Dichloropropane	ND	ND	ND	ND	20.0	µg/m3
1,3-Dichloropropane	ND	ND	ND	ND	20.0	µg/m3
2,2-Dichloropropane	ND	ND	ND	ND	20.0	µg/m3
1,1-Dichloropropene	ND	ND	ND	ND	20.0	µg/m3

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**	**METHOD BLANK**	**SAMPLING BLANK**		
JEL ID:	**D-1083-22**	**D-1083-23**	**D-1083-27**	**D-1083-28**	**Practical Quantitation Limit**	**Units**
Analytes:						
cis-1,3-Dichloropropene	ND	ND	ND	ND	20.0	µg/m3
trans-1,3-Dichloropropene	ND	ND	ND	ND	20.0	µg/m3
Ethylbenzene	ND	ND	ND	ND	20.0	µg/m3
Freon 113	ND	ND	ND	ND	100	µg/m3
Hexachlorobutadiene	ND	ND	ND	ND	20.0	µg/m3
Isopropylbenzene	ND	ND	ND	ND	20.0	µg/m3
4-Isopropyltoluene	ND	ND	ND	ND	20.0	µg/m3
Methylene chloride	ND	ND	ND	ND	20.0	µg/m3
Naphthalene	ND	ND	ND	ND	20.0	µg/m3
n-Propylbenzene	ND	ND	ND	ND	20.0	µg/m3
Styrene	ND	ND	ND	ND	20.0	µg/m3
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	20.0	µg/m3
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	20.0	µg/m3
Tetrachloroethylene	ND	ND	ND	ND	20.0	µg/m3
Toluene	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichlorobenzene	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trichlorobenzene	ND	ND	ND	ND	20.0	µg/m3
1,1,1-Trichloroethane	ND	ND	ND	ND	20.0	µg/m3
1,1,2-Trichloroethane	ND	ND	ND	ND	20.0	µg/m3
Trichloroethylene	ND	ND	ND	ND	20.0	µg/m3
Trichlorofluoromethane	ND	ND	ND	ND	20.0	µg/m3
1,2,3-Trichloropropane	ND	ND	ND	ND	20.0	µg/m3
1,2,4-Trimethylbenzene	ND	ND	ND	ND	20.0	µg/m3
1,3,5-Trimethylbenzene	ND	ND	ND	ND	20.0	µg/m3
Vinyl chloride	ND	ND	ND	ND	20.0	µg/m3
Xylenes	ND	ND	ND	ND	20.0	µg/m3
MTBE	ND	ND	ND	ND	100	µg/m3
Ethyl-tert-butylether	ND	ND	ND	ND	100	µg/m3
Di-isopropylether	ND	ND	ND	ND	100	µg/m3
tert-amylmethylether	ND	ND	ND	ND	100	µg/m3
tert-Butylalcohol	ND	ND	ND	ND	1000	µg/m3
TIC:						
n-propanol	ND	ND	ND	ND	200	µg/m3
n-pentane	ND	ND	ND	ND	20.0	µg/m3
Dilution Factor	1	1	1	1		
Surrogate Recoveries:					**QC Limits**	
Dibromofluoromethane	102%	103%	103%	104%	60 - 140	
Toluene-d_8	98%	103%	86%	96%	60 - 140	
4-Bromofluorobenzene	98%	101%	123%	98%	60 - 140	
	D1-021016-D-1083	D1-021016-D-1083	E2-021116-E-0488	E2-021116-E-0488		

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	D-1083
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/10/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Batch ID: D1-021016-D-1083

JEL ID:	**D-1083-25**	**D-1083-26**			**D-1083-24**	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl Chloride	99%	97%	2.5%	70 - 130	98%	80 - 120
1,1-Dichloroethylene	82%	80%	2.5%	70 - 130	83%	80 - 120
Cis-1,2-Dichloroethene	104%	99%	4.9%	70 - 130	100%	80 - 120
1,1,1-Trichloroethane	98%	94%	4.4%	70 - 130	88%	80 - 120
Benzene	112%	105%	6.3%	70 - 130	99%	80 - 120
Trichloroethylene	102%	100%	1.9%	70 - 130	98%	80 - 120
Toluene	94%	97%	2.6%	70 - 130	90%	80 - 120
Tetrachloroethene	95%	95%	0.5%	70 - 130	91%	80 - 120
Chlorobenzene	99%	105%	5.7%	70 - 130	95%	80 - 120
Ethylbenzene	107%	109%	2.6%	70 - 130	101%	80 - 120
1,2,4 Trimethylbenzene	107%	109%	2.1%	70 - 130	104%	80 - 120
Surrogate Recovery:						
Dibromofluoromethane	105%	102%		60 - 140	102%	60 - 140
Toluene-d_8	97%	103%		60 - 140	102%	60 - 140
4-Bromofluorobenzene	98%	101%		60 - 140	98%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuining Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/11/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	D-1083
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/10/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/10/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Batch ID: E2-021116-E-0488

JEL ID:	**D-1083-30**	**D-1083-31**			**D-1083-29**	
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)	CCV	Acceptability Range (%)
Vinyl Chloride	101%	93%	7.5%	70 - 130	106%	80 - 120
1,1-Dichloroethylene	89%	78%	14%	70 - 130	114%	80 - 120
Cis-1,2-Dichloroethene	95%	82%	14%	70 - 130	103%	80 - 120
1,1,1-Trichloroethane	94%	82%	14%	70 - 130	90%	80 - 120
Benzene	125%	108%	15%	70 - 130	125%	80 - 120
Trichloroethylene	92%	81%	13%	70 - 130	98%	80 - 120
Toluene	115%	123%	6.8%	70 - 130	108%	80 - 120
Tetrachloroethene	77%	77%	0.1%	70 - 130	73%	80 - 120
Chlorobenzene	103%	99%	3.4%	70 - 130	83%	80 - 120
Ethylbenzene	100%	97%	3.6%	70 - 130	88%	80 - 120
1,2,4 Trimethylbenzene	98%	87%	13%	70 - 130	88%	80 - 120
Surrogate Recovery:						
Dibromofluoromethane	88%	91%		60 - 140	73%	60 - 140
Toluene-d_8	91%	98%		60 - 140	98%	60 - 140
4-Bromofluorobenzene	92%	100%		60 - 140	84%	60 - 140

LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
CCV = Continuining Calibration Verification
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
11007 Forest Place
Santa Fe Springs, CA 90670
(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Ardent Environmental Group
Date: 2/10/16
Project Name: HMC- Bloomington
Client Project #: 100736001
Project Address: 11138 Cedar Ave, Bloomington, CA
Project Contact: Kasia Edlund

Turn Around Requested:
- ☐ Immediate Attention
- Rush: ☐ 24 ☐ 48 ☐ 72
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test Y / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: D-1083
Page 1 of 3

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested: EPA 8260 + Vx Vl

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260 + Vx Vl				Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SG-1	3	568	2/10/16	07:26	07:38	D-1083-01	SG	X				<2	1	Glass Gas Tight Syringe
SG-2	3	568	2/10/16	07:46	07:59	D-1083-02	SG	X				<2	1	
SG-5	3	568	2/10/16	07:56	08:19	D-1083-03	SG	X				<2	1	
SG-7	3	568	2/10/16	08:02	08:28	D-1083-04	SG	X				<2	1	
SG-8	3	568	2/10/16	08:25	08:46	D-1083-05	SG	X				<2	1	
SG-9	3	568	2/10/16	08:37	09:03	D-1083-06	SG	X				<2	1	
SG-10	3	568	2/10/16	09:04	09:22	D-1083-07	SG	X				<2	1	
SG-3	3	568	2/10/16	09:27	09:54	D-1083-08	SG	X				<2	1	
SG-4	3	568	2/10/16	10:03	10:15	D-1083-09	SG	X				<2	1	
SG-4 DUP	3	568	2/10/16	10:03	10:25	D-1083-10	SG	X				<2	1	

❶ Relinquished by (signature)	Date 2/10/16	❷ Received by (signature)	Date 2/10/16	Total Number of Containers
Company	Time 2:12pm	Company JEL	Time 14:12	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

JONES ENVIRONMENTAL, INC.
11007 Forest Place
Santa Fe Springs, CA 90670
(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Ardent Environmental Group
Date: 2/10/16
Project Name: HMC- Bloomington
Client Project #: 100736001
Project Address: 11138 Cedar Ave, Bloomington, CA
Project Contact: Kasia Folund

Turn Around Requested:
- ☐ Immediate Attention
- Rush: ☐ 24 ☐ 48 ☐ 72
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☑ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test Y / N
Tracer:
- ☑ n-propanol
- ☑ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: D-1083
Page 2 of 3

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☑ no
Sealed ☑ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260 TOXY				Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SG-11	3	568	2/10/16	10:35	10:54	D-1083-11	SG	X				<2	1	
SG-12	3	736	2/10/16	10:54	11:13	D-1083-12	SG	X				<2	1	
SG-14	3	568	2/10/16	11:20	11:32	D-1083-13	SG	X				<2	1	
SG-13	3	568	2/10/16	11:40	11:52	D-1083-14	SG	X				<2	1	
SG-15	3	736	2/10/16	12:00	12:13	D-1083-15	SG	X				<2	1	
SG-16	3	736	2/10/16	12:21	12:33	D-1083-16	SG	X				<2	1	
SG-17	3	736	2/10/16	12:35	12:53	D-1083-17	SG	X				<2	1	
SG-18	3	736	2/10/16	12:58	13:12	D-1083-18	SG	X				<2	1	
SG-19	3	736	2/10/16	13:17	13:32	D-1083-19	SG	X				<2	1	
SG-21	3	568	2/10/16	13:29	13:53	D-1083-20	SG	X				<2	1	

❶ Relinquished by (signature)	Date 2/10/16	❷ Received by (signature)	Date 2/10/16	Total Number of Containers
Company Ardent Environmental	Time 1412	Company JRL	Time 12:12	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

JONES ENVIRONMENTAL, INC.
11007 Forest Place
Santa Fe Springs, CA 90670
(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Ardent Environmental Group
Date: 2/10/16
Project Name: HMC- Bloomington
Client Project #: 100736001
Project Address: 11138 Cedar Ave, Bloomington, CA
Project Contact: Karla Fuland

Turn Around Requested:
- ☐ Immediate Attention
- Rush: ☐ 24 ☐ 48 ☐ 72
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☑ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer:
- ☑ n-propanol
- ☑ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: D-1083
Page 3 of 3

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☑ no
Sealed ☑ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	BTEX 8260 + oxys				Magnehelic Vacuum (in/H_2O)	Number of Containers	Remarks/Special Instructions
SG-20	3	5.68	2/10/16	13:54		D-1083-21	SG	X				<2	1	Summa Canister

❶ Relinquished by (signature)	Date 2/10/16	❷ Received by (signature)	Date 2/10/16	Total Number of Containers
Company Ardent Environmental	Time 1412	Company JEL	Time 14:12	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date 2/10/16	
Company	Time	Company Jones Env	Time 1530	☐ EDD ☐ EDF

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No:**	ST-9102 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/9/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

ANALYSES REQUESTED

1. EPA 8015B – Semi-Volatile Hydrocarbons as Diesel & Oil
2. EPA 8260B by 5035 – Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	ST-9102
		Client Ref No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/9/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

EPA 8015 - Semi-Volatile Hydrocarbons as Diesel & Oil

Sample ID:	**B1-2.5**	**B2-2.5**		
JEL ID:	**ST-9102-01**	**ST-9102-03**	**Practical Quantitation Limit**	**Units**
Carbon Chain Range				
Diesel Range Organics (C10-C28)	ND	ND	10.0	mg/kg
Oil Range Organics (C29-C32)	ND	ND	10.0	mg/kg
Dilution Factor	1	1		
Surrogate Recovery:			**QC Limits**	
Hexacosane	65%	75%	30 - 120	
Batch ID:	8015_160211_01	8015_160211_01		

ND = Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	ST-9102
		Client Ref No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/9/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

EPA 8015 - Semi-Volatile Hydrocarbons as Diesel & Oil

Sample ID:	**METHOD BLANK**		
JEL ID:	**MB-160211_01**	**Practical Quantitation Limit**	**Units**
Carbon Chain Range			
Diesel Range Organics (C10-C28)	ND	10.0	mg/kg
Oil Range Organics (C29-C32)	ND	10.0	mg/kg
Dilution Factor	1		
Surrogate Recovery:		**QC Limits**	
Hexacosane	70%	30 - 120	
Batch ID:	8015_160211_01		

ND = Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref No.:**	ST-9102 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/9/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

BATCH: 8015_160211_01 **Prepared:** 2/11/2016 **Analyzed:** 2/11/2016

EPA 8015 - Semi-Volatile Hydrocarbons as Diesel & Oil

	Result	Spike Level	Source Result	% Recovery	% RPD	% Recovery Limits	Units
LCS:	LCS-160211_01		**SAMPLE SPIKED:**		CLEAN SOIL		
Analyte:							
Diesel	**600**	600	ND	100%		60 - 140	mg/kg
Surrogate Recovery:							
Hexacosane				73%		30 - 120	
LCSD:	LCSD-160211_01		**SAMPLE SPIKED:**		CLEAN SOIL		
Analyte:							
Diesel	**580**	600	ND	97%	3.4%	60 - 140	mg/kg
Surrogate Recoveries:							
Hexacosane				72%		30 - 120	

LCS = Laboratory Control Sample
RPD = Relative Percent Difference

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	ST-9102 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/9/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

EPA 8260B by 5035-Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**B1-2.5**	**B2-2.5**		
JEL ID:	**ST-9102-01**	**ST-9102-03**	**Practical Quantitation Limit**	**Units**
Analytes:				
Benzene	ND	ND	1.0	µg/kg
Bromobenzene	ND	ND	1.0	µg/kg
Bromodichloromethane	ND	ND	1.0	µg/kg
Bromoform	ND	ND	1.0	µg/kg
n-Butylbenzene	ND	ND	1.0	µg/kg
sec-Butylbenzene	ND	ND	1.0	µg/kg
tert-Butylbenzene	ND	ND	1.0	µg/kg
Carbon tetrachloride	ND	ND	1.0	µg/kg
Chlorobenzene	ND	ND	1.0	µg/kg
Chloroform	ND	ND	1.0	µg/kg
2-Chlorotoluene	ND	ND	1.0	µg/kg
4-Chlorotoluene	ND	ND	1.0	µg/kg
Dibromochloromethane	ND	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	ND	1.0	µg/kg
Dibromomethane	ND	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	ND	1.0	µg/kg
Dichlorodifluoromethane	ND	ND	1.0	µg/kg
1,1-Dichloroethane	ND	ND	1.0	µg/kg
1,2-Dichloroethane	ND	ND	1.0	µg/kg
1,1-Dichloroethene	ND	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	ND	1.0	µg/kg
1,2-Dichloropropane	ND	ND	1.0	µg/kg
1,3-Dichloropropane	ND	ND	1.0	µg/kg
2,2-Dichloropropane	ND	ND	1.0	µg/kg
1,1-Dichloropropene	ND	ND	1.0	µg/kg

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B by 5035-Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**B1-2.5**	**B2-2.5**		
JEL ID:	**ST-9102-01**	**ST-9102-03**	**Practical Quantitation Limit**	**Units**
Analytes:				
cis-1,3-Dichloropropene	ND	ND	1.0	µg/kg
trans-1,3-Dichloropropene	ND	ND	1.0	µg/kg
Ethylbenzene	ND	ND	1.0	µg/kg
Freon 113	ND	ND	5.0	µg/kg
Hexachlorobutadiene	ND	ND	1.0	µg/kg
Isopropylbenzene	ND	ND	1.0	µg/kg
4-Isopropyltoluene	ND	ND	1.0	µg/kg
Methylene chloride	ND	ND	1.0	µg/kg
Naphthalene	ND	ND	1.0	µg/kg
n-Propylbenzene	ND	ND	1.0	µg/kg
Styrene	ND	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	ND	1.0	µg/kg
Tetrachloroethylene	ND	ND	1.0	µg/kg
Toluene	ND	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	ND	1.0	µg/kg
1,2,4-Trichlorobenzene	ND	ND	1.0	µg/kg
1,1,1-Trichloroethane	ND	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	ND	1.0	µg/kg
Trichloroethylene	ND	ND	1.0	µg/kg
Trichlorofluoromethane	ND	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	ND	1.0	µg/kg
Vinyl chloride	ND	ND	1.0	µg/kg
Xylenes	ND	ND	1.0	µg/kg
MTBE	ND	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	ND	5.0	µg/kg
Di-isopropylether	ND	ND	5.0	µg/kg
tert-amylmethylether	ND	ND	5.0	µg/kg
tert-Butylalcohol	ND	ND	50.0	µg/kg
Gasoline Range Organics	ND	ND	0.20	mg/kg
Dilution Factor	1	1		
Surrogate Recoveries:			**QC Limits**	
Dibromofluoromethane	100%	102%	60 - 140	
Toluene-d_8	102%	102%	60 - 140	
4-Bromofluorobenzene	103%	106%	60 - 140	
	VOC3-021116-CHECKS_2	VOC3-021116-CHECKS_2		

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:** **Client Ref. No.:**	ST-9102 100736001
Attn:	Mark Cousineau	**Date Sampled:** **Date Received:**	2/9/2016 2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

EPA 8260B by 5035-Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK**		
JEL ID:	**ST-9102-05**	**Practical Quantitation Limit**	**Units**
Analytes:			
Benzene	ND	1.0	µg/kg
Bromobenzene	ND	1.0	µg/kg
Bromodichloromethane	ND	1.0	µg/kg
Bromoform	ND	1.0	µg/kg
n-Butylbenzene	ND	1.0	µg/kg
sec-Butylbenzene	ND	1.0	µg/kg
tert-Butylbenzene	ND	1.0	µg/kg
Carbon tetrachloride	ND	1.0	µg/kg
Chlorobenzene	ND	1.0	µg/kg
Chloroform	ND	1.0	µg/kg
2-Chlorotoluene	ND	1.0	µg/kg
4-Chlorotoluene	ND	1.0	µg/kg
Dibromochloromethane	ND	1.0	µg/kg
1,2-Dibromo-3-chloropropane	ND	1.0	µg/kg
1,2-Dibromoethane (EDB)	ND	1.0	µg/kg
Dibromomethane	ND	1.0	µg/kg
1,2- Dichlorobenzene	ND	1.0	µg/kg
1,3-Dichlorobenzene	ND	1.0	µg/kg
1,4-Dichlorobenzene	ND	1.0	µg/kg
Dichlorodifluoromethane	ND	1.0	µg/kg
1,1-Dichloroethane	ND	1.0	µg/kg
1,2-Dichloroethane	ND	1.0	µg/kg
1,1-Dichloroethene	ND	1.0	µg/kg
cis-1,2-Dichloroethene	ND	1.0	µg/kg
trans-1,2-Dichloroethene	ND	1.0	µg/kg
1,2-Dichloropropane	ND	1.0	µg/kg
1,3-Dichloropropane	ND	1.0	µg/kg
2,2-Dichloropropane	ND	1.0	µg/kg
1,1-Dichloropropene	ND	1.0	µg/kg

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

EPA 8260B by 5035-Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample ID:	**METHOD BLANK**		
JEL ID:	**ST-9102-05**	**Practical Quantitation Limit**	**Units**
Analytes:			
cis-1,3-Dichloropropene	ND	1.0	µg/kg
trans-1,3-Dichloropropene	ND	1.0	µg/kg
Ethylbenzene	ND	1.0	µg/kg
Freon 113	ND	5.0	µg/kg
Hexachlorobutadiene	ND	1.0	µg/kg
Isopropylbenzene	ND	1.0	µg/kg
4-Isopropyltoluene	ND	1.0	µg/kg
Methylene chloride	ND	1.0	µg/kg
Naphthalene	ND	1.0	µg/kg
n-Propylbenzene	ND	1.0	µg/kg
Styrene	ND	1.0	µg/kg
1,1,1,2-Tetrachloroethane	ND	1.0	µg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	µg/kg
Tetrachloroethylene	ND	1.0	µg/kg
Toluene	ND	1.0	µg/kg
1,2,3-Trichlorobenzene	ND	1.0	µg/kg
1,2,4-Trichlorobenzene	ND	1.0	µg/kg
1,1,1-Trichloroethane	ND	1.0	µg/kg
1,1,2-Trichloroethane	ND	1.0	µg/kg
Trichloroethylene	ND	1.0	µg/kg
Trichlorofluoromethane	ND	1.0	µg/kg
1,2,3-Trichloropropane	ND	1.0	µg/kg
1,2,4-Trimethylbenzene	ND	1.0	µg/kg
1,3,5-Trimethylbenzene	ND	1.0	µg/kg
Vinyl chloride	ND	1.0	µg/kg
Xylenes	ND	1.0	µg/kg
MTBE	ND	5.0	µg/kg
Ethyl-tert-butylether	ND	5.0	µg/kg
Di-isopropylether	ND	5.0	µg/kg
tert-amylmethylether	ND	5.0	µg/kg
tert-Butylalcohol	ND	50.0	µg/kg
Gasoline Range Organics	ND	0.20	mg/kg
Dilution Factor	1		

Surrogate Recoveries:		**QC Limits**
Dibromofluoromethane	99%	60 - 140
Toluene-d_8	101%	60 - 140
4-Bromofluorobenzene	107%	60 - 140

VOC3-021116-CHECKS

ND= Not Detected

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Hazard Management Consulting	**Report date:**	2/12/2016
Client Address:	211 W. Avenida Cordoba #200 San Clemente, CA 92672	**JEL Ref. No.:**	ST-9102
		Client Ref. No.:	100736001
Attn:	Mark Cousineau	**Date Sampled:**	2/9/2016
		Date Received:	2/10/2016
Project:	HMC - Bloomington	**Date Analyzed:**	2/11/2016
Project Address:	11134 Cedar Ave. Bloomington, CA	**Physical State:**	Soil

EPA 8260B by 5035-Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics

Sample Spiked: CLEAN SOIL **GC#:** VOC3-021116-CHECKS_2

JEL ID:	**ST-9102-07**	**ST-9102-08**			**ST-9102-06**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD	Acceptability Range (%)	LCS	Acceptability Range (%)
Vinyl Chloride	103%	107%	3.6%	60 - 140	95%	70 - 130
1,1-Dichloroethylene	118%	116%	2.2%	60 - 140	112%	70 - 130
Cis-1,2-Dichloroethene	118%	117%	0.7%	70 - 130	112%	70 - 130
1,1,1-Trichloroethane	117%	117%	0.5%	70 - 130	109%	70 - 130
Benzene	121%	118%	2.7%	70 - 130	113%	70 - 130
Trichloroethylene	114%	110%	3.1%	70 - 130	107%	70 - 130
Toluene	118%	114%	3.9%	70 - 130	109%	70 - 130
Tetrachloroethene	125%	121%	3.2%	70 - 130	110%	70 - 130
Chlorobenzene	112%	110%	1.8%	70 - 130	108%	70 - 130
Ethylbenzene	121%	114%	5.9%	70 - 130	110%	70 - 130
1,2,4 Trimethylbenzene	113%	120%	5.6%	70 - 130	110%	70 - 130
Gasoline Range Organics	118%	116%	1.7%	70 - 130		
Surrogate Recovery:						
Dibromofluoromethane	82%	78%		60 - 140	79%	60 - 140
Toluene-d_8	101%	98%		60 - 140	99%	60 - 140
4-Bromofluorobenzene	105%	102%		60 - 140	102%	60 - 140

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.

11007 Forest Place
Santa Fe Springs, CA 90670
(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: HMC

Date: 2/10/16

Project Name: HMC-Bloomington

Client Project #: 100736001

Project Address: 11134 Cedar Ave, Bloomington, CA

Turn Around Requested:
- ☐ Immediate Attention
- Rush: ☐ 24 ☐ 48 ☐ 72
- ☐ Normal
- ☐ Mobile Lab

Project Contact: Kasia Edlund kedlund@ardentenv.com

SOIL GAS
Purge Number: ☐ 1P ☐ 3P ☐ 7P ☐ 10P
Purge Rate: _____ cc/min
Shut in Test Y / N
Tracer:
- ☐ n-propanol
- ☐ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: ST-9102

Page 1 of 1

Lab Use Only
Sample Condition as Received:
Chilled ☑ yes ☐ no
Sealed ☑ yes ☐ no

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	TPHs (C4-12; C13-22; C23-32) 8015	VOCs 8260B + fuel oxy			Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
B1-2.5			2/9/16			ST-9102-01	S	X						
B1-5			↓			ST-9102-02	S							Hold
B2-2.5			↓			ST-9102-03	S	X						
B2-5			↓			ST-9102-04	S							Hold

❶ Relinquished by (signature)	Date 2/10/16	❷ Received by (signature)	Date 2/10/16	Total Number of Containers
Company: Ardent Environmental	Time 1000	Company: JEL	Time 10:00	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

May 17, 2016

Ms. Christine Jacobs-Donoghue
Michael Baker International
3536 Concours Street Suite 100
Ontario, California 91764

Subject: Western Realco Bloomington Facility

In response to a question raised at the recent public scoping session held for the referenced project on April 13, 2016, I researched the potential issues related to air discharges from the nearby Riverside Cement Company Crestmore Plant (Cement Plant) located at 1500 Rubidoux Blvd in Riverside. As we understand, a general question was raised regarding potential Chromium discharges that may have occurred at the plant and their potential to be carried via wind to the Site and deposit on the surface. Specifically, a local resident stated that he was informed that he should reportedly mow rather than disk his property and somehow thinks this maybe associated with potential releases from the cement plant.

As part of our Phase One Environmental Site Assessment (ESA) that was conducted in general accordance with ASTM E1527-13 standard and reviewed the historical, current and off site uses that may impact the Site. This specifically included a review of regulatory information in the public record regarding off Site facilities and their potential to impact the Site. The Cement Plant is located downgradient with respect to groundwater flow and was not listed as a potential source of impact to the site.

The Cement Plant was listed on the Cerclis database as a potential release location and was investigated by the DTSC with no further action required. There have been local soil remedial efforts at the Cement Plant overseen by the Riverside County Health Department and the releases to soil were limited to the facility boundaries.

Air dispersal of potential contaminants released from the Site would travel in the direction of the prevailing wind. We reviewed available information regarding prevailing wind rates and note that the predominant wind direction in the site vicinity is to the east and southeast. The Site is located northwest or UPWIND from the Cement Plant. In addition, the Cement Plant is located approximately 3,000 feet from the Site. Given that the Cement Plant is located over a half mile down wind from the Cement Plant, it is very unlikely that releases from the plant would impact the Site. We also reviewed information contained in the South Coast Air Quality Management District website regarding violations and notices to comply. There were several

notices including incomplete paperwork and recording violations, which have all been resolved. We saw no information or records to indicate that the AQMD had concerns over aerial deposition of contaminants or that the AQMD ever requested the Cement Plant to investigate off Site facilities for potential impacts from the Cement Plant. Again, given the fact that the Site is over a half mile upwind from the Cement Plant, such impacts would not likely impact the Site.

In conclusion, we have conducted our research into the environmental condition of the Site and have found no basis to conclude that aerial deposition of contaminants including Chromium have occurred from the Cement Plant and impacted the Site.

I am happy to address any questions you may have.

Very truly yours,
Hazard Management Consulting Inc.

Mark Cousineau, NREP
Principal

Appendix E
Noise

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

NOISE AND VIBRATION TECHNICAL REPORT, BLOOMINGTON DISTRIBUTION PROJECT

Prepared for:

Western Realco
500 Newport Center Drive # 630
Newport Beach, California 92660
Contact: Jeremy Mape

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Mike Greene
949.373.8317

SEPTEMBER 2016

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

ACRONYMS ..... **III**

SUMMARY ..... **V**

1 INTRODUCTION **1**
- 1.1 Purpose 1
- 1.2 Project Location 1
- 1.3 Project Description 1

2 FUNDAMENTALS OF NOISE AND VIBRATION **9**
- 2.1 Sound, Noise, and Acoustics 9
- 2.2 Sound Pressure Levels and Decibels 9
- 2.3 A-Weighted Sound Level 9
- 2.4 Human Response to Changes in Noise Levels 10
- 2.5 Noise Descriptors 11
- 2.6 Sound Propagation 11
- 2.7 Groundborne Vibration Fundamentals 11

3 REGULATORY SETTING **13**
- 3.1 Federal 13
- 3.2 State 13
- 3.3 Local 14
  - 3.3.1 County of San Bernardino Municipal Code 14
  - 3.3.2 County of San Bernardino 2007 General Plan 15

4 EXISTING CONDITIONS **17**
- 4.1 Ambient Noise Monitoring 18

5 PROJECT IMPACT ANALYSIS **23**
- 5.1 Methodology 23
- 5.2 Thresholds of Significance 23
- 5.3 Construction Noise Impacts 24
- 5.4 Operational Noise Impacts 28
  - 5.4.1 Off-Site Traffic Noise 28
  - 5.4.2 On-Site Operations Noise 30
- 5.5 Vibration Impacts 32

TABLE OF CONTENTS (CONTINUED)

Section **Page No.**

6 MITIGATION MEASURES....33
6.1 Construction Noise Mitigation Measures 33
6.2 Level of Significance After Mitigation 34

7 REFERENCES....35

APPENDICES

A Field Noise Measurement Data Sheets
B Construction Noise Model Input / Output
C Traffic Noise Modeling Input and Output Files
D On-Site Noise Modeling Files
E Resume

FIGURES

1 Regional Map....3
2 Vicinity Map....5
3 Site Plan....7
4 Noise Measurement and Modeling Locations....21

TABLES

1 Typical Sound Levels in the Environment and Industry....10
2 Noise Standards for Stationary Noise Sources....14
3 Noise Standards for Adjacent Mobile Noise Sources....14
4 Existing Daily Traffic Volumes....17
5 Short-Term Measurement Noise Levels....18
6 Long-Term Measured Noise Levels....19
7 Measures of Substantial Increase for Community Noise Sources....24
8 Construction Equipment Noise Emission Levels....25
9 Construction Noise Model Results Summary....27
10 Project-Related Traffic Noise: Existing....29
11 Project-Related Traffic Noise: Future (Year 2018)....30
12 Noise from On-Site Activities....31

ACRONYMS

Acronym	Definition
ADT	average daily traffic
dB	decibel
dBA	A-weighted decibel
CEQA	California Environmental Quality Act
CNEL	community noise equivalent level
FHWA	Federal Highway Administration
L_{eq}	equivalent sound level
PPV	peak particle velocity
TNM	Traffic Noise Model
VdB	velocity decibel

INTENTIONALLY LEFT BLANK

SUMMARY

The project applicant (Western Realco) is proposing to construct a single 676,983-square-foot distribution building within an approximately 35-acre property. The site would include two detention basins and landscaping along Cedar Avenue and Jurupa Avenue. There will be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. Truck access will be installed from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, 4 grade level ramps, and 110 dock high doors.

This noise and vibration report summarizes the impact analysis evaluating the potential for significant adverse impacts due to construction, operation and maintenance of the proposed project. Potential noise impacts during construction were found to be potentially significant; with implementation of the recommended mitigation measures, noise impacts would be reduced to a level of less than significant. During operation and maintenance, noise impacts were determined to be less than significant; therefore, no operations noise mitigation would be required.

INTENTIONALLY LEFT BLANK

1 INTRODUCTION

1.1 Purpose

The purpose of this report is to estimate and evaluate the potential noise and vibration impacts associated with construction and operation of the Bloomington Distribution Project (proposed project) relative to the significance thresholds and noise / vibration standards of the County of San Bernardino.

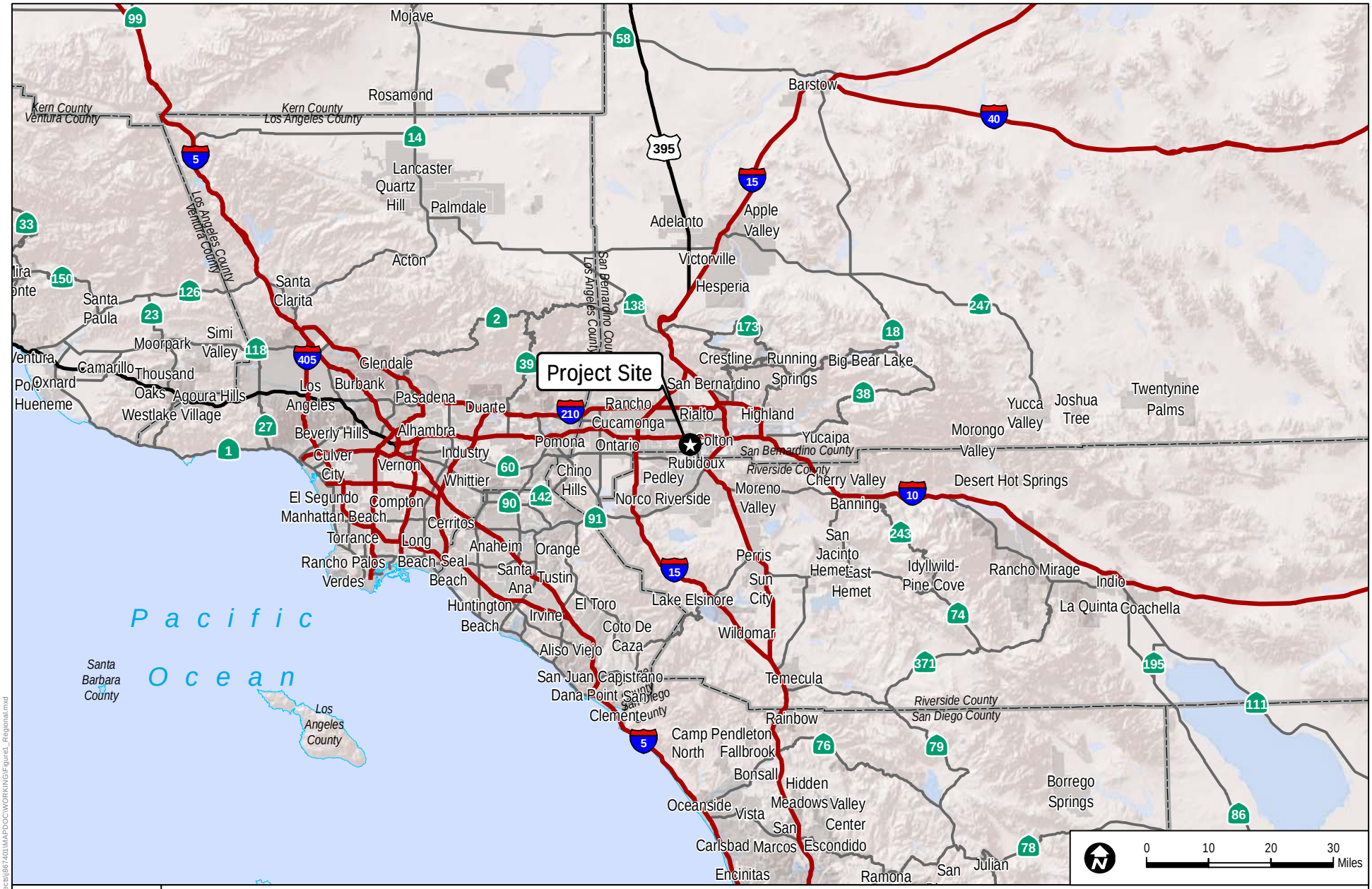
1.2 Project Location

The proposed project would be located north of Jurupa Avenue, east of Linden Avenue, and west of Cedar Avenue in the census-designated place (CDP) of Bloomington, in the County of San Bernardino, California, as shown in Figures 1 and 2.

1.3 Project Description

Western Realco is proposing to construct a single 676,983-square-foot distribution building within an approximately 35-acre property. The site would include two detention basins and landscaping along Cedar Avenue and Jurupa Avenue. There will be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. Truck access will be installed from Cedar Avenue, and the dockyard would include 138 trailer storage stalls, 4 grade level ramps, and 110 dock high doors. A site plan of the project is shown in Figure 3.

INTENTIONALLY LEFT BLANK



DUDEK

8674

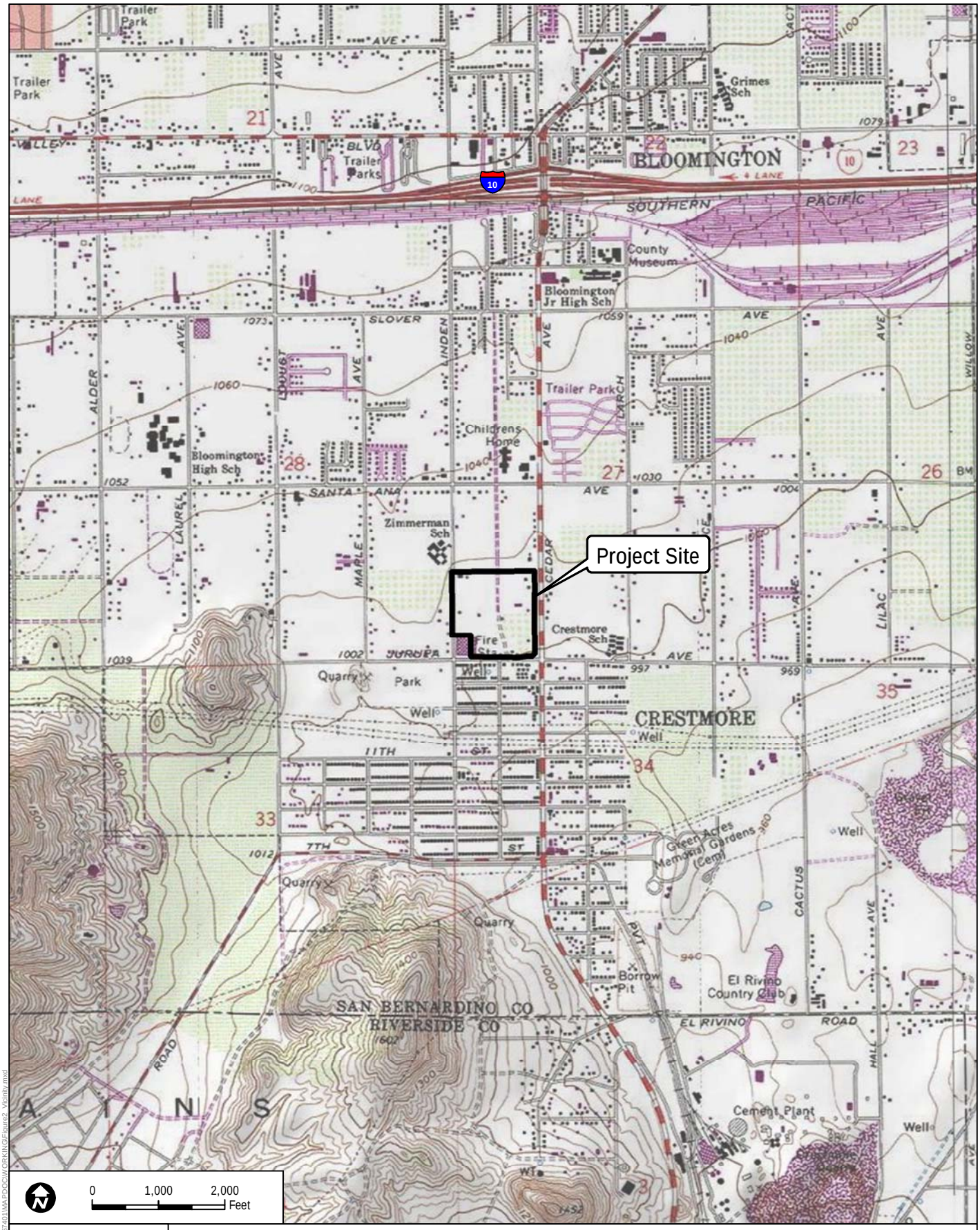
FIGURE 1

Regional Map

WESTERN REALCO - BLOOMINGTON, CA

File: \\dudek-files\GIS\Data\Projects\8674\01\MAPDOC\WORKING\Figure1_Regional.mxd

INTENTIONALLY LEFT BLANK



DUDEK

8674

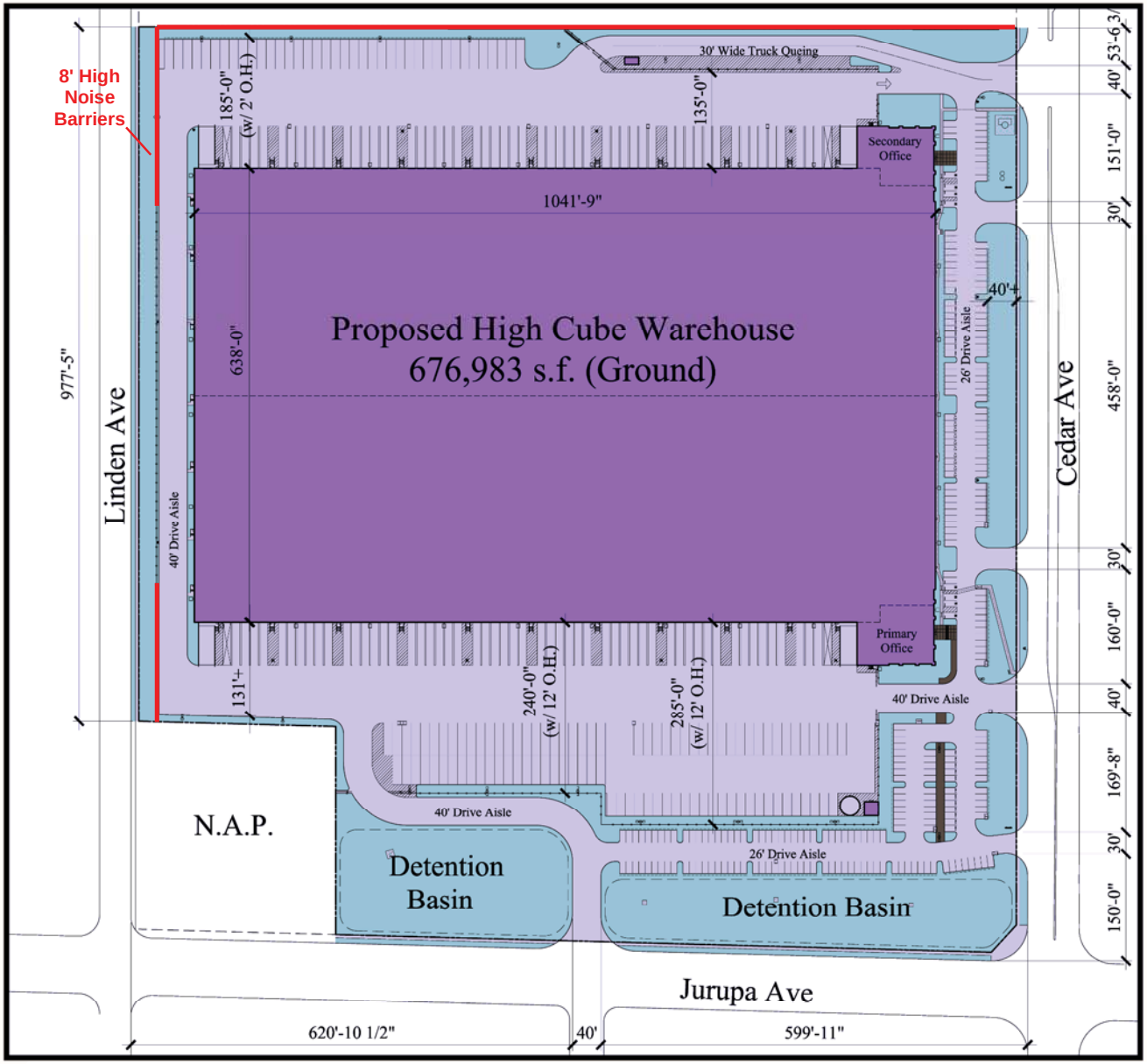
SOURCE: USGS 7.5-Minute Series - Fontana Quadrangle.

FIGURE 2
Vicinity Map

WESTERN REALCO - BLOOMINGTON, CA

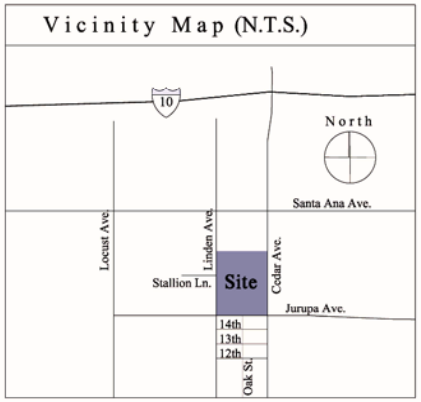
Document Path: Z:\Projects\8674\01\MAP\DOCWORKING\Figure2_Vicinity.mxd

INTENTIONALLY LEFT BLANK



Site Plan Summary

Gross Site Area (To Original Property Lines)	(35.43 Acres)	1,543,291 s.f.
Gross Site Area (To Ultmate Right of Way)	(34.54 Acres)	1,504,407 s.f.
Total Building Area (Ground Floor)		676,983 s.f.
Site Coverage to Ultimate R.O.W. (.45 Max F.A.R)		45.00%
Parking Required (IC Zoning)		267 Spaces
Office	(18,000 s.f. / 1/250)	72 Spaces
WH	(40,000 s.f. / 1/1,000)	40 Spaces
WH	(618,983 s.f. / 1/4,000)	155 Spaces
Parking Provided		267 Spaces
Dock Yard		110 Dock High Doors 4 Grade Level Doors 138 Trailer Storage Stalls
Landscape Provided (15% Required)		17%



Legend

- Property Line (Current)
- Top of Slope (Detension Basin)
- Potential Interior Wall Location
- Fencing
- Parking Overhang (24")
- Solid Hatch Represents Landscape Area
- Shade Represents On-Site Hardscape Materials (Concrete or Ashpalt Paving)
- Dark Shade Represents Enhanced Hardscape Materials
- Diagonal Hatch Represents Painted Stripes

North

CONCEPTUAL SITE PLAN

0 60 120 180 240

Scale: 1" = 60'-0"

DUDEK

SOURCE: BASTIEN AND ASSOCIATES, INC., 2016

FIGURE 3

Site Plan

WESTERN REAL CO - BLOOMINGTONS, CA

Date: 7/14/2016 - Last saved by: cbuttle - Path: Z:\Projects\6670101\MAPDOC\DOCUMENT\Noise\Figure 3 Site Plan.mxd

INTENTIONALLY LEFT BLANK

2 FUNDAMENTALS OF NOISE AND VIBRATION

The following is a brief discussion of fundamental noise concepts and terminology.

2.1 Sound, Noise, and Acoustics

Sound is actually a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound, there is no sound. Similarly, without a medium to transmit sound pressure waves, there is no sound. Finally, sound must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound or noise. In most situations, there are many different sound sources, paths, and receptors rather than just one of each. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired.

2.2 Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

2.3 A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound

measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 1.

Table 1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quite urban, daytime	50	Large business office; dishwasher next room
Quite urban, nighttime	40	Theater; large conference room (background)
Quite suburban, nighttime	30	Library
Quite rural, nighttime	20	Bedroom at night; concert hall (background)
	10	Broadcast/Recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 1998

2.4 Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3

dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level).

2.5 Noise Descriptors

Additional units of measure have been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level, $L_{eq}(h)$, is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the basis for the County of San Bernardino's noise ordinance criteria.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours.

2.6 Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

2.7 Groundborne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The strength of groundborne vibration attenuates fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Several basic

measurement units are commonly used to describe the intensity of ground vibration. The descriptors used by the Federal Transit Administration are peak particle velocity (PPV), in units of inches per second, and velocity decibel (VdB). The calculation to determine PPV at a given distance is as follows:

$$PPV_{distance} = PPV_{ref}*(25/D)^{\wedge}1.5$$

Where:

PPV_{equip} = the peak particle velocity in inches per second of the equipment adjusted for distance

PPV_{ref} = the reference vibration level in inches per second at 25 feet

D = the distance from the equipment to the receiver

The velocity parameter (instead of acceleration or displacement) best correlates with human perception of vibration. Thus, the response of humans, buildings, and sensitive equipment to vibration is described in this section in terms of the root-mean square velocity level in VdB units relative to 1 micro-inch per second. As a point of reference, the average person can just barely perceive vibration velocity levels below 70 VdB (typically in the vertical direction). The calculation to determine the root-mean square at a given distance is as follows:

$$L_v(D) = L_v(25\text{ feet}) - 30*\log(D/25)$$

Where:

$L_v(D)$ = the vibration level at the receiver

$L_v(25\text{ feet})$ = the reference source vibration level

D = the distance from the vibration activity to the receiver

Typical background vibration levels are between 50 and 60 VdB, and the level for minor cosmetic damage to fragile buildings or blasting generally begins at 100 VdB.

3 REGULATORY SETTING

3.1 Federal

Although no federal regulations are directly applicable to the proposed project, the Federal Transit Administration provides guidance related to noise levels from construction activities which is used for this project in the absence of a local agency construction noise standard. The FTA's *Transit Noise and Vibration Impact Assessment* manual (FTA, 2006) Based upon the information provided in Chapter 12 (Noise and Vibration During Construction) of the FTA handbook, adverse community reaction would be anticipated if construction noise levels exceed 90 dBA $L_{eq\ 1\text{-}hour}$ during daytime hours or 80 dBA $L_{eq\ 1\text{-}hour}$ during nighttime hours, or 80 dBA $L_{eq\ 8\text{-}hour}$ during daytime hours or 70 dBA $L_{eq\ 8\text{-}hour}$ during nighttime hours.

3.2 State

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element in a general plan, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources:

1. Highways and freeways
2. Primary arterials and major local streets
3. Passenger and freight on-line railroad operations and ground rapid transit systems
4. Aviation and airport-related operations
5. Local industrial plants
6. Other ground stationary noise sources contributing to the community noise environment.

California Department of Transportation Vibration Standards

The California Department of Transportation (Caltrans) Division of Environmental Analysis created the Transportation and Construction Vibration Guidance Manual, which provides guidance to Caltrans engineers, planners, and consultants in assessing vibration from construction, operation, and maintenance of Caltrans projects. The manual also provides general information on the potential effects and levels of vibration on people and vibration-sensitive land uses. For the purposes of providing a recognized threshold for annoyance from vibration, the

vibration impacts analysis for the proposed project references the Caltrans threshold of approximately 0.10 inches/second peak particle velocity (PPV) as the level at which continuous vibration begins to cause annoyance (Caltrans 2013).

3.3 Local

3.3.1 County of San Bernardino Municipal Code

Noise Standards. The County's Municipal Code (Title 8, Development Code; Division 3, Countywide Development Standards; Chapter 83.01, General Performance Standards, Section 83.01.080, Noise) sets interior and exterior noise standards for specific land uses by type of noise source. Noise standards for stationary noise sources are summarized in Table 2. As shown, the noise standard for residential properties is 55 dB(A) L_{eq} from 7 a.m. to 10 p.m. and 45 dB(A) L_{eq} from 10 p.m. to 7 a.m. For industrial properties the noise standard from stationary noise sources is 70 dB(A) during any time of the day or night. The County's Municipal Code exempts noise from construction noise provided that construction is limited to between the hours of 7 a.m. to 7 p.m. except on Sundays or federal holidays.

Table 2
Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7:00 a.m. - 10:00 p.m. (dBA L_{eq})	10:00 p.m. –7:00 a.m. (dBA L_{eq})
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

Source: County of San Bernardino 2007
Notes: dBA = A-weighted decibel scale
L_{eq} = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.

For noise from mobile sources (such as traffic), the County's standards are summarized in Table 3.

Table 3
Noise Standards for Adjacent Mobile Noise Sources

Categories	Uses	L_{dn} or CNEL, dB(A)	
		Interior	*Exterior*
Residential	Single and multi-family, duplex, mobile homes	45	60
Commercial	Hotel, motel, transient housing	45	60
	Commercial retail, bank, restaurant	50	N/A

Table 3
Noise Standards for Adjacent Mobile Noise Sources

Categories	Uses	L_{dn} or CNEL, dB(A)	
		Interior	*Exterior*
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional / Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Source: County of San Bernardino 2007
Notes: dBA = A-weighted decibel scale
CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.
N/A = not applicable

Vibration Standards. The County's Municipal Code, Section 83.01.090 prohibits the operation of any device that creates vibration that can be felt without the aid of instruments at or beyond the lot line, or which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.

3.3.2 County of San Bernardino 2007 General Plan

The Noise Element of the 2007 General Plan (County of San Bernardino 2007) includes goals and policies, including that "The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits." The Noise Element refers to the Municipal Code for the specific noise standards as they would relate to this project.

INTENTIONALLY LEFT BLANK

4 EXISTING CONDITIONS

The project area is subject to typical suburban noises and semi-rural, such as noise generated by traffic, schoolyard, and day-to-day outdoor activities including occasional noise from roosters. Noise around the project site is the cumulative effect of noise from transportation activities and stationary sources. "Transportation noise" typically refers to noise from automobile use, trucking, airport operations, and rail operations. "Stationary noise" typically refers to noise from sources such as heating, ventilation, and air conditioning (HVAC) systems, compressors, landscape maintenance equipment, or machinery associated with local industrial or commercial activities.

Currently, the project site is disturbed with evidence of recent disking within open areas of the site. Multiple single-family homes and junk yards are present throughout the northern half of the site and three single-family homes are located in the southeastern portion of the site. A dirt road that looks to be an old channel now filled with soil runs north to south through the center of the project site.

The project site is primarily subject to traffic noise on the adjacent arterial roadways such as Cedar Avenue to the east, Jurupa Avenue to the south and Linden Avenue to the west. Table 4 provides the existing daily traffic volumes along the roadway segments that are primarily subject to traffic noise and that have noise-sensitive land uses. The nearest airport in the vicinity of the project site is Flabob Airport (a small local airport), located approximately 4.3 miles to the south. The nearest major commercial airport is Ontario International Airport, located approximately 10.5 miles to the west. Although the project site is within the Influence Area of Ontario International Airport, the project site is outside of the airports 60-65 dBA CNEL noise impact contours and is therefore not located within any airport's noise impact zone (City of Ontario, 2011).

Table 4
Existing Daily Traffic Volumes

Key Roadway Segment	Lanes	Existing Traffic Conditions
		Daily Volume
1. Cedar Avenue north of Jurupa Avenue	4D	20,400
2. Cedar Avenue south of Jurupa Avenue and Santa Ana Avenue	4D	20,800
3. Linden Avenue north of Jurupa Avenue	2U	2,100
4. Linden Avenue south of Jurupa Avenue and Santa Ana Avenue	2U	1,900
5. Jurupa Avenue west of Linden Avenue	2U	2,600
6. Jurupa Avenue between Linden Avenue and Oak Street	2U	2,700
7. Jurupa Avenue between Oak Street and Cedar Avenue	2U	2,900
8. Jurupa Avenue east of Cedar Avenue	2U	3,500

Notes: D = divided, U = undivided

4.1 Ambient Noise Monitoring

Noise measurements were conducted on and near the project site in February 2015 and in August 2016 to document the typical existing noise levels. Table 65 provides the location, date, and time the noise measurements were taken. The noise measurements conducted in February 2015 were short-term in duration (15 minutes each), and the noise measurement conducted in August 2016 was long-term (24 hours duration).

The noise measurements were made using a SoftdB Piccolo Integrating Sound Level Meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 general purpose sound level meter. The sound level meter was calibrated before and after the measurements, and the measurements were conducted with the microphone covered with a windscreen and positioned approximately 5 feet above the ground.

For the short-term measurements, five noise measurement locations that represented key potential sensitive receptors or sensitive land uses were selected adjacent to or near the project site; these locations are depicted as Receptors 1–5 (M1–M5) on Figure 4. Location M1 was taken at a residence on Cedar Avenue, east of the project site; M2 was at a residence on Jurupa Avenue, south of the project site; M3 was at a residence on Linden Avenue, west of the project site; M4 was at the Walter Zimmerman Elementary School on Linden Avenue, northwest of the project sited; and M5 was at the Upland Indonesian Seventh-Day Adventist Church on Cedar Avenue, north of the project site. The measured average, maximum and minimum noise levels and measurement locations are provided in Table 5, and the field noise measurement data sheets are included in Appendix A. As shown, measured average short-term noise levels ranged from 62 dBA L_{eq} at M2 to 71 dBA L_{eq} at M1. The primary noise source at the sites listed in Table 5 was from traffic along the adjacent roads.

Table 5
Short-Term Measurement Noise Levels

Receptors	Location/Address	Date	Time	Description	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)
M1	Residence east of project site; 11169 Cedar Avenue	February 5, 2015	1:16 p.m.–1:31 p.m.	95 feet east of Cedar Avenue and 850 feet north of Jurupa Avenue	71	84	49
M2	Residence south of project site; 18579 Jurupa Avenue	February 5, 2015	1:55 p.m.–2:10 p.m.	65 feet south of Jurupa Avenue and 500 feet east of Linden Avenue	62	75	51
M3	Residence west of project site; 11266 Linden Avenue	February 5, 2015	2:25 p.m.–2:40 p.m.	65 feet west of Linden Avenue and 300 feet north of Jurupa Avenue	65	81	48

Table 5
Short-Term Measurement Noise Levels

Receptors	Location/Address	Date	Time	Description	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)
M4	Elementary School northwest of project site; 11050 Linden Avenue	February 5, 2015	2:56 p.m.–3:11 p.m.	100 feet west of Linden Avenue and 1,500 feet north of Jurupa Avenue	67	87	49
M5	Elementary School north of project site; 11100 Linden Avenue	February 5, 2015	3:38 p.m.–3:53 p.m.	130 feet east of Cedar Avenue and 1,400 feet north of Jurupa Avenue	67	78	48

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval

For the long-term measurement, one on-site noise measurement location was selected; the location is depicted as LT1 on Figure 4. Measurement LT1 was taken adjacent to an existing on-site residence along Cedar Avenue, approximately 55 feet west of the centerline of Cedar Avenue and approximately 270 feet north of the centerline of Jurupa Avenue. The measured hourly average, maximum and minimum noise levels are provided in Table 6, and the detailed data output sheet is included in Appendix A. The primary noise source at LT1, based upon field observations during setup and retrieval of the noise measurement equipment was from traffic along the adjacent roads, particularly heavy truck traffic. As shown in Table 6, hourly noise levels at LT1 ranged from 59 to 68 dBA L_{eq}, the 24-hour average noise level was 65 dBA L_{eq}, and the weighted day-night noise level was 71 dBA L_{dn}.

Table 6
Long-Term Measured Noise Levels

LT1				
Measurement Start Time	*Measurement End Time*	*L_{eq} (dBA)*	*L_{max} (dBA)*	*L_{min} (dBA)*
9:54	10:54	65	87	44
10:54	11:54	65	87	45
11:54	12:54	65	84	45
12:54	13:54	65	83	46
13:54	14:54	65	80	45
14:54	15:54	66	85	48
15:54	16:54	67	89	50
16:54	17:54	65	84	49
17:54	18:54	66	84	50
18:54	19:54	66	86	49
19:54	20:54	64	81	45
20:54	21:54	64	82	46
21:54	22:54	64	85	45

Table 6
Long-Term Measured Noise Levels

LT1				
Measurement Start Time	*Measurement End Time*	*L_{eq} (dBA)*	*L_{max} (dBA)*	*L_{min} (dBA)*
22:54	23:54	61	79	44
23:54	0:54	60	78	43
0:54	1:54	59	80	43
1:54	2:54	59	77	43
2:54	3:54	62	78	43
3:54	4:54	66	83	46
4:54	5:54	67	91	49
5:54	6:54	68	84	50
6:54	7:54	66	85	48
7:54	8:54	66	83	48
8:54	9:54	64	84	46
	Maximum Level	**68**	**91**	**50**
	Minimum Level	**59**	**74**	**43**
	24-Hour Average ($L_{eq\ 24Hr}$)	**65**		
	L_{dn}	**71**		

DUDEK

8674

SOURCE: Bing Maps 2015

FIGURE 4

Noise Measurement and Modeling Locations

WESTERN REALCO - BLOOMINGTON, CA

Path: Z:\Projects\8674\01\MAP\DOC\DOC\DOC\MENT\Noise\Fig 4 Noise Measurements- Modeling.mxd

INTENTIONALLY LEFT BLANK

5 PROJECT IMPACT ANALYSIS

5.1 Methodology

Ambient noise measurements were conducted to quantify the existing daytime noise environment at five sites representative of nearby noise-sensitive land uses. Estimated noise levels resulting from the proposed construction activities were obtained from reports prepared by the Federal Transit Administration (FTA 2006) and field data from files. The noise impact assessment utilized criteria established in the County of San Bernardino General Plan Noise Element and Municipal Code Noise Ordinance. The noise levels associated with selected roadways was determined based the provided traffic impact analysis (Kunzman Associates 2016) and using the Federal Highway Administration's Traffic Noise Model (TNM), Version 2.5 (FHWA 2004).

5.2 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to noise are based on Appendix G of the CEQA Guidelines. According to Appendix G, a significant impact related to noise would occur if the project would:

1. Result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
5. Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and if so, the project would expose people residing or working in the project area to excessive noise levels.

Substantial Changes in Ambient Noise Levels

Some guidance regarding the determination of a substantial permanent increase in ambient noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in

ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn}. The changes in noise exposure that are shown in Table 7 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

Table 7
Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level Without Project (L_{dn})	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dB	+ 5 dB or more
60-65 dB	+ 3 dB or more
>65 dB	+ 2 dB or more

5.3 Construction Noise Impacts

Development activities for project construction would generally involve the following phases: demolition, site preparation, grading, building construction, architectural coatings, and paving. Although specific project construction details and equipment specifications are not available at this time, the following are typical types of construction equipment that would be expected:

- Concrete/industrial saws
- Excavators
- Dozers
- Tractors/loaders/backhoes
- Forklifts
- Welders
- Cement and mortar mixers
- Paving equipment
- Trenching equipment
- Off-highway water trucks
- Materials delivery trucks
- Pneumatic tools
- Graders
- Cranes

- Generator sets
- Air compressors
- Pavers
- Scrapers
- Rollers
- Concrete trucks
- Asphalt trucks.

As demonstrated by this list, construction equipment would include only standard equipment that would be employed for any routine construction project of this scale; construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) would not be necessary for development of any phase of the project.

Equipment that would be in operation during construction would include excavators, backhoes, scrapers, forklifts, compressors, paving equipment, and haul trucks. The typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet are presented in Table 8, Construction Equipment Maximum Noise Levels. Note that the equipment noise levels presented in Table 8 are maximum noise levels. Typically, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities during that time.

Table 8
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jackhammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Roller	74

Table 8
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Saw	76
Truck	88

Source: FTA 2006.

As part of the demolition phase of construction, several structures (including existing on-site residences) would be demolished and removed from the project site, and no residences would exist on-site. The nearest noise sensitive receptors to the project construction work would be the residences to the west, on the west side of Linden Avenue. Residences are also located just to the east and south of the project site, on the other sides of Cedar Avenue and Jurupa Avenue, respectively. Other than the residences, the nearest other noise-sensitive receivers such as the elementary school and the church are located are also located in proximity to the project site. Noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately 6 dBA per doubling of distance from the source (Harris 1979). Therefore, if a particular construction activity generated average noise levels of 88 dBA at 50 feet, the L_{eq} would be 82 dBA at 100 feet, 76 dBA at 200 feet, 70 dBA at 400 feet, and so on. Intervening structures that block the line of sight, such as buildings, would further decrease the resultant noise level by a minimum of 5 dBA. The effects of molecular air absorption and anomalous excess attenuation would reduce the noise level from construction activities at more distant locations at the rates of 0.7 dBA and 1.0 dBA per 1,000 feet, respectively.

The closest point of construction activities to the nearest nose-sensitive receivers would be approximately 60 feet (during grading and landscaping of the site boundaries) and the furthest would be approximately 1,250 feet. Actual building construction activities would be approximately 150 feet away or further. The nearest noise-sensitive receivers are located approximately 400 feet away from the acoustic center of construction activity (the idealized point from which the energy sum of all construction activity noise near and far would be centered).

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest occupied noise-sensitive land uses. Although the model was funded and promulgated by the FHWA, the RCNM is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are also used for other project types. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. No topographical or structural

shielding was assumed in the modeling. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

Using the FHWA's RCNM construction noise model and construction information (types and number of construction equipment by phase), the estimated noise levels from construction were calculated for a representative range of distances, as presented in Table 9, Construction Noise Model Results Summary. The RCNM inputs and outputs are provided in Appendix B.

Table 9
Construction Noise Model Results Summary

Construction Phase	Construction Noise at Representative Receiver Distances (dBA L_{eq})	
	Nearest Construction Work - 60 Feet (Approx.)	*Typical Construction Work - 400 Feet (Approx.)*
Demolition	81	68
Site Preparation	82	67
Grading	84	69
Building Construction	80	65
Paving	83	68
Architectural Coatings	73	58

L_{eq} = equivalent continuous sound level

As presented in Table 9 the highest noise levels are predicted to occur during grading activities when noise levels from construction activities would be as high as 84 dBA equivalent continuous sound level (L_{eq}) at the nearest existing residential property boundaries, approximately 60 feet away. At more typical distances of approximately 400 feet, construction noise would range from approximately 58 to 69 dBA L_{eq}. Nearby noise-sensitive land uses would be exposed to elevated construction noise levels; the exposure would be short-term, and would cease upon project construction. It is anticipated that construction activities associated with the proposed project would take place between 7:00 a.m. and 7:00 p.m., and would not take place on Sundays or federal holidays, and would therefore not violate County of San Bernardino Municipal Code or General Plan standards for construction. However, construction noise levels are predicted to exceed FTA guidance related to noise levels from construction activities and adverse community reaction (see Section 3.1). During periods of nearest construction work, noise levels would exceed the FTA's guideline of 80 dBA $L_{eq\ 8\text{-}hour}$ during daytime hours. Additionally, the predicted noise levels would be substantially higher than existing ambient daytime noise levels (as shown in Table 5)[1]. Therefore, noise impacts from construction are considered significant. The implementation of mitigation measures **MM NOI-1** and **MM NOI-2** would reduce construction noise substantially.

[1] Existing ambient noise levels ranging from 62 to 71 dBA L_{eq} were measured whereas "nearest construction work" noise levels ranging from 73 to 84 dBA L_{eq} are predicted.

Therefore, temporary construction-related noise impacts would be **less than significant with mitigation incorporated**.

Temporary noise from construction would be readily audible at the nearest sensitive receptors and at times could represent a substantial temporary increase. Impacts are considered **less than significant with mitigation incorporated** (please see Section 4.10.6).

5.4 Operational Noise Impacts

Long-term operational noise from the project would consist of noise associated with typical office and warehousing activities. Noise would be generated by truck and passenger vehicle trips to and from the site on adjacent roadways; trucks backing up, starting up, and idling; fork lifts; and mechanical plant (heating, ventilation, and air conditioning [HVAC]) noise. Predicted noise levels from each of these noise sources are addressed in the following sections. Long-term operational noises also include project-generated traffic and overall traffic noise at the site.

5.4.1 Off-Site Traffic Noise

The project would generate traffic along adjacent roads including Cedar Avenue, Jurupa Avenue and Linden Avenue. Traffic noise modeling was conducted for the proposed project using the traffic volumes from the project's traffic impact analysis report and the FHWA's TNM model. The TNM noise model accepts as input the number and types of vehicles on the roadway, vehicle speeds, and receiver locations. The modeled traffic speeds used were the posted speed limits in the project vicinity; 45 miles per hour (mph) on Cedar Avenue; 40 mph on Jurupa Avenue; and 25 mph on Linden Avenue. The noise modeling input and output files, and the Non-Passenger Car Equivalent traffic volumes provided by Kunzman Associates are included in Appendix C.

The information provided from this modeling was compared to the noise impact significance criteria in the County's Municipal Code for adjacent mobile noise sources (i.e., a 60 dBA CNEL/L_{dn} noise standard for noise-sensitive land uses) and the FICON thresholds for noise increase (i.e., a 5 dBA increase in an ambient noise environment of less than 60 dBA L_{dn}, a 3 dBA noise increase in an ambient noise environment of 60 - 65 dBA L_{dn} and a 2 dBA increase in an ambient noise environment of more than 65 dBA L_{dn}) to assess whether project traffic noise would cause a significant impact and, if so, where. The results of the traffic noise analysis are shown in Table 10 for the existing and existing plus project scenarios and in Table 11 for the year 2018 and year 2018 plus project scenarios.

As shown in Table 10, the existing plus project traffic noise would generate a noise level increase of 1 dBA CNEL or less (rounded to whole numbers) along the studied roads in the vicinity of the site. The additional traffic volume along the adjacent roads would not substantially increase the existing

noise level in the project vicinity and the traffic noise level increase is considered less than significant; no mitigation measures are necessary.

Table 10
Project-Related Traffic Noise: Existing

Modeled Receptor	Key Roadway Segment	Existing ADT[1] Volume	Existing + Project ADT[1] Volume	Existing Noise Level (dBA CNEL)	Existing + Project Noise Level (dBA CNEL)	Noise Level Increase (dB)
M1 - Residences east of Project	Cedar Avenue: Jurupa Avenue to Santa Ana Avenue	20,500	21,200	68	69	1
M2 - Residences south of Project	Jurupa Avenue: Linden Avenue to Cedar Avenue	5,000	5,200	65	65	0
M3 - Residences on Linden Ave west of Project	Linden Avenue: Jurupa Avenue to Santa Ana Avenue	2,700	2,700	58	58	0
M4 - School northwest of Project	Linden Avenue: Jurupa Avenue to Santa Ana Avenue	2,700	2,700	53	53	0
M5 - Church north of Project	Cedar Avenue: Jurupa Avenue to Santa Ana Avenue	20,500	21,200	66	67	1
R1 - Residences south of Project	Linden Avenue: 11th Street to Jurupa Avenue	2,100	2,100	56	56	0
R2 - Residences south of Project	Cedar Avenue: 11th Street to Jurupa Avenue	20,200	20,400	68	69	1
R3 - Residences southwest of Project	Jurupa Avenue: west of Linden Avenue	4,100	4,100	65	65	0
R4 - Residences on Jurupa Ave southeast of Project	Jurupa Avenue: east of Cedar Avenue	5,700	5,800	67	67	0

Source: Kunzman Associates 2016 (Traffic Volumes).
Note: [1] ADT = Average Daily Traffic (non Passenger-Car-Equivalents)

The project's traffic study analyzed project Average Daily Traffic (ADT) to Year 2018, the year of planned project completion. With the project, the Year 2018 (i.e., existing plus ambient growth plus cumulative plus project ADT) traffic noise would generate a noise level increase of approximately 1 dB or less compared to the Year 2018 without project scenario. The noise level increases associated with the Year 2018 conditions are depicted in Table 11. The additional project traffic volume along the adjacent roads in Year 2018 would not substantially increase the

existing noise level in the project vicinity and the traffic noise level increase is considered less than significant; no mitigation measures are necessary.

Table 11
Project-Related Traffic Noise: Future (Year 2018)

Modeled Receptor	Key Roadway Segment	Future (Year 2018) ADT[1] Volume	Future (Year 2018) + Project ADT[1] Volume	Future (Year 2018) Noise Level (dBA CNEL)	Future (Year 2018) + Project Noise Level (dBA CNEL)	Noise Level Increase (dB)
M1 - Residences east of Project	Cedar Avenue: Jurupa Avenue to Santa Ana Avenue	21,500	22,200	69	69	0
M2 - Residences south of Project	Jurupa Avenue: Linden Avenue to Cedar Avenue	5,100	5,300	65	65	0
M3 - Residences on Linden Ave west of Project	Linden Avenue: Jurupa Avenue to Santa Ana Avenue	2,800	2,800	58	58	0
M4 - School northwest of Project	Linden Avenue: Jurupa Avenue to Santa Ana Avenue	2,800	2,800	54	54	0
M5 - Church north of Project	Cedar Avenue: Jurupa Avenue to Santa Ana Avenue	21,500	22,200	66	67	1
R1 - Residences south of Project	Linden Avenue: 11th Street to Jurupa Avenue	2,100	2,100	56	56	0
R2 - Residences south of Project	Cedar Avenue: 11th Street to Jurupa Avenue	21,300	22,500	69	69	0
R3 - Residences southwest of Project	Jurupa Avenue: west of Linden Avenue	4,200	4,200	65	65	0
R4 - Residences on Jurupa Ave southeast of Project	Jurupa Avenue: east of Cedar Avenue	6,300	6,400	68	68	0

Source: Kunzman Associates 2016 (Traffic Volumes).
Note: [1] ADT = Average Daily Traffic (non Passenger-Car-Equivalents)

5.4.2 On-Site Operations Noise

Trucks, passenger vehicles, and ancillary equipment such as forklifts and HVAC equipment would create noise during on-site operations. Based on information from the Project applicant, operations in the proposed industrial building may be conducted 24 hours a day. The operations will be typical of warehouse / distribution center use. The nearest residences in the vicinity of the

proposed Project site are located approximately 700 feet from the center and approximately 150 feet from the nearest side of the proposed industrial building, to the west. Refrigerated trucks (which have an additional auxiliary cooling system which could result in higher individual truck noise levels) are not anticipated as part of this project.

In order to ensure that noise from on-site operations meets noise standards contained in the San Bernardino County Municipal Code, predictive noise modeling was conducted. The estimated maximum number of trucks per hour (17) during the peak morning and evening hours was used for the worst-case hourly noise calculations, based upon the Traffic Impacts Analysis in which this is listed as the highest hourly truck volume from the project. Also taken into account were the planned 8-foot high solid masonry walls on the northern and the northwestern and southwestern project boundaries, as well as shielding which would be provided by the proposed building for equipment inside or otherwise screened by the building. Using standard noise propagation rates (i.e., 6 decibels per doubling of distance) and reference noise emission data[2], the noise levels from activities such as trucks maneuvering in and out of loading docks, trucks driving by, forklifts, HVAC noise and passenger vehicle parking lot activities were calculated for the five nearest noise-sensitive receiver locations (residences to the west, south and east, the school to the northwest and the church to the north). Also accounted for were the typical duration of each noise "event" and the number of noise events per hour anticipated during the peak hour. These assumptions were based upon the trip generation data provided in the projects Traffic Impacts Analysis, as well as the above-referenced noise measurements and observations for a similar project. These data were compiled in a computer spreadsheet program; the spreadsheet input and output data are contained in Appendix D. The results of the noise analysis from on-site operations are summarized in Table 12. As Table 12 shows, noise levels from Project activities would range from 38 dBA L_{eq} to 45 dBA L_{eq}, and thus would not exceed the San Bernardino County noise municipal code noise ordinance. The noise levels would also be well below existing ambient noise levels, based upon the noise measurement data summarized in Section 4.1 On-site noise from the proposed project would thus be less than significant.

Table 12
Noise from On-Site Activities

Representative Noise-Sensitive Land Uses	Estimated Noise Level (dBA L_{eq})	San Bernardino County Noise Ordinance Standard (45 dBA L_{eq}) Exceeded?
Linden Avenue Residences West of Project Site	45	No
Jurupa Avenue Residences South of Project Site	44	No
Cedar Avenue Residences East of Project Site	42	No

[2] Reference noise data based upon noise measurements conducted by Jim Wilder, URS Corporation, 2000 for a similar type of facility and shown in Appendix D

Table 12
Noise from On-Site Activities

Representative Noise-Sensitive Land Uses	Estimated Noise Level (dBA L_{eq})	San Bernardino County Noise Ordinance Standard (45 dBA L_{eq}) Exceeded?
Elementary School Northwest of Project Site	38	No
Church North of Project Site	39	No

5.5 Vibration Impacts

The heavier pieces of construction equipment used at the project site could include dozers, graders, cranes, loaded trucks, water trucks, and pavers. Groundborne vibration information related to construction activities has been collected by the California Department of Transportation (Caltrans). Information from Caltrans indicates that continuous vibrations with a PPV of approximately 0.10 inches/second begin to cause annoyance (Caltrans 2013). Ground-borne vibration is typically attenuated over short distances (typically on the order of 25 feet). The closest homes would be approximately 60 feet or more from the nearest construction area. At this distance and with the anticipated construction equipment, the PPV is estimated to be 0.024 inches/second or lower, which would be well below 0.10 inches/second at the adjacent sensitive receptors mentioned in the Caltrans guidance, and well below the County's vibration standard of 0.20 inches/second. Therefore, construction activities are not anticipated to result in continuous vibration levels that typically annoy people, and the vibration impact would be less than significant. Operational vibration would also be less than significant; no major equipment that would be capable of transmitting vibrations beyond the property boundaries is envisioned, and the rubber-tired heavy and medium trucks and automobiles associated with project operations would not create vibration levels higher than already experienced along the adjacent arterial roadways.

6 MITIGATION MEASURES

The following mitigation measures would reduce temporary noise levels from construction activities.

6.1 Construction Noise Mitigation Measures

Construction noise is potentially significant and could adversely affect nearby residents during construction. However, the noise would be temporary and limited to the duration of the construction. The following measures should be incorporated into the Project contract specifications to minimize construction noise impacts:

1. All noise-producing Project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
2. All mobile or fixed noise-producing equipment used on the Project that are regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of Project activity.
3. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
4. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
5. Construction site and access road speed limits shall be established and enforced during the construction period.
6. Construction operations shall not occur between 7:00 p.m. and 7:00 a.m. Monday through Saturday, or at any time on Sunday or on federal holidays. The hours of construction, including noisy maintenance activities and all spoils and material transport, shall be restricted to the periods and days permitted by the local noise or other applicable ordinance.
7. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
8. No Project-related public address or music system shall be audible at any adjacent receptor.
9. The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner shall be established

prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.

Effectiveness of these mitigation measures would vary from several decibels (which in general is a relatively small change) to ten or more decibels (which subjectively would be perceived as a substantial change), depending upon the specific equipment and the original condition of that equipment, the specific locations of the noise sources and the receivers, etc. Relocation of equipment to a more distant location, for example, could range from 1 decibel or less to over 15 decibels, depending upon the location of the equipment before and after relocation. Installation of more effective silencers could range from several decibels to well over 10 decibels. Reduction of idling equipment could reduce overall noise levels from barely any reduction to several decibels. Cumulatively, however, these measures would result in substantial decreases in the noise from construction. With implementation of these measures, short-term construction impacts associated with exposure of persons to or generation of noise levels in excess of established standards would be less than significant.

6.2 Level of Significance After Mitigation

With implementation of the listed mitigation measures, temporary construction noise would be reduced to a level below significance. Project-related noise impacts would be less than significant.

7 REFERENCES

California Department of Transportation (Caltrans). September, 2013. Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. Sacramento, California.

City of Ontario. 2011. LA/Ontario International Airport Land Use Compatibility Plan. Adopted April 19, 2011.

County of San Bernardino. 2007a. Noise Element. In San Bernardino County 2007 General Plan.

County of San Bernardino. 2007b. Noise Standards. County of San Bernardino Municipal Code (Title 8, Development Code; Division 3, Countywide Development Standards; Chapter 83.01, General Performance Standards, Section 83.01.080, Noise.

FHWA (Federal Highway Administration). 2004. FHWA Traffic Noise Model, Version 2.5. Released April 2004.

Federal Highway Administration. December 8, 2008. Roadway Construction Noise Model (RCNM), Software Version 1.1. U.S. Department of Transportation, Research and Innovative Technology Administration, John A. Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division. Washington, D.C.

FTA (Federal Transit Administration). 2006. Transit Noise and Vibration Impact Assessment. July 1, 2006.

Kunzman Associates, Inc. 2016. Bloomington Option C Traffic Impact Analysis.

Wilder. 2000. Noise survey of commercial loading dock operations.

INTENTIONALLY LEFT BLANK

APPENDIX A

Field Noise Measurement Data Sheets

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: Western Realco
PROJECT #: 8674
SITE ID: Single Family Residential
SITE ADDRESS: 11169 Cedar Avenue Bloomington, CA 92316
OBSERVER(S): Stephanie Tang
START DATE: 2/5/15 END DATE: 2/5/15
START TIME: 116PM END TIME: 131PM

METEOROLOGICAL CONDITIONS
TEMP: 78° F HUMIDITY: 21 % R.H. WIND: CALM (LIGHT) MODERATE
WINDSPD: 4 MPH DIR. N (NE) S SE S SW W NW VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: Piccolo SLM TYPE 1 (2) SERIAL #: 130625008
CALIBRATOR: BSWA CA114 SERIAL #: 490151
CALIBRATION CHECK PRE-TEST: 94.0 dBA SPL POST-TEST: 94.0 dBA SPL WINDSCRN: ✓

SETTINGS: A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
M1	116pm	131pm	70.6	83.8	49.0				

COMMENTS

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Cedar Avenue DIST. TO RDWY C/L OR EOP: ~95'
TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	145	166		
MED TRKS	6	3		
HVY TRKS	9	14		
BUSES	2	1		
MOTRCLS	0	0		

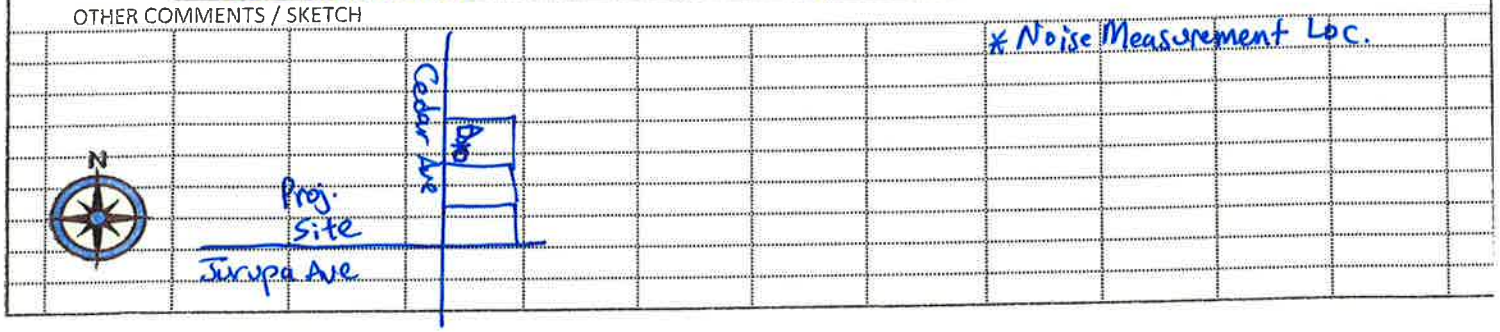
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 45 mph

OTHER NOISE SOURCES (BACKGROUND): (DIST. AIRCRAFT) RUSTLING LEAVES (DIST. BARKING DOGS) (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING (DIST. CONVRSTNS) YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Rooster noises, horse passing through; dist. music; clanking on-site; vehicles passing along Cedar Ave.

DESCRIPTION / SKETCH
TERRAIN: (HARD) SOFT MIXED (FLAT) OTHER: Driveway
PHOTOS: See Attached
OTHER COMMENTS / SKETCH



MI - 11169 Cedar Avenue Bloomington, CA 92316

Photo Taken: 2/5/15

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: Western Realco — PROJECT #: 8674
SITE ID: Single Family Residential
SITE ADDRESS: 18579 Jurupa Ave Bloomington, CA 92316 — OBSERVER(S): Stephanie Tang
START DATE: 2/5/15 — END DATE: 2/5/15
START TIME: 1:55 pm — END TIME: 2:10 pm

METEOROLOGICAL CONDITIONS
TEMP: 79° F — HUMIDITY: 20 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 4 MPH — DIR. N (NE) S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: Piccolo SLM — TYPE 1 (2) — SERIAL # 130625008
CALIBRATOR: B&SWA CA 114 — SERIAL # 490151
CALIBRATION CHECK — PRE-TEST: 94.0 dBA SPL — POST-TEST: 94.0 dBA SPL — WINDSCRN: ✓

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
M2	1:55pm	2:10pm	61.8	74.8	50.6				

COMMENTS

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Jurupa Avenue — DIST. TO RDWY C/L OR EOP: ~65'
TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	32	33		
MED TRKS	0	2		
HVY TRKS	0	0		
BUSES	1	0		
MOTRCLS	0	0		

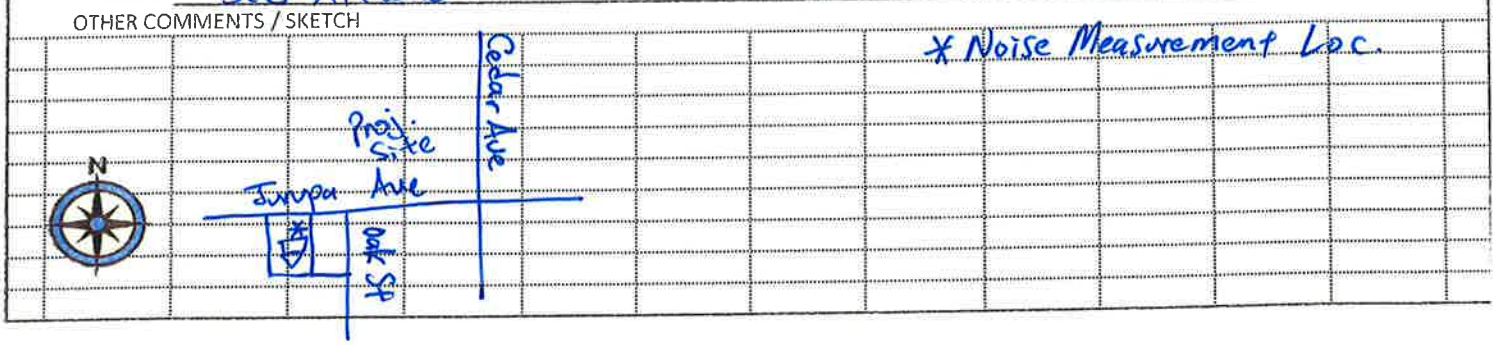
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ____

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 40mph

OTHER NOISE SOURCES (BACKGROUND): (DIST. AIRCRAFT) RUSTLING LEAVES (DIST. BARKING DOGS) (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING (DIST. CONVRSTNS) YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Neighbor - Const. veh. hauling soils, ~~excavator~~ operation; rooster noises
Vehicles traveling along Jurupa Avenue and Oak Street;
Car honking

DESCRIPTION / SKETCH
TERRAIN: (HARD) SOFT MIXED (FLAT) OTHER: Walkway
PHOTOS: See Attached
OTHER COMMENTS / SKETCH



M2 - 18579 Jurupa Avenue Bloomington, CA 92316
Photo Taken: 2/5/15

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: Western Realco — PROJECT #: 8674
SITE ID: Single Family Residential
SITE ADDRESS: 11266 Linden Avenue Bloomington, CA 92316 — OBSERVER(S): Stephanie Tang
START DATE: 2/5/15 — END DATE: 2/5/15
START TIME: 225pm — END TIME: 240pm

METEOROLOGICAL CONDITIONS
TEMP: 79° F — HUMIDITY: 20 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 4 MPH — DIR. N (NE) S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: Piccolo SLM — TYPE 1 (2) — SERIAL # 130625008
CALIBRATOR: BSWA CA 114 — SERIAL # 490151
CALIBRATION CHECK — PRE-TEST: 94.0 dBA SPL — POST-TEST: 94.0 dBA SPL — WINDSCRN: ✓

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
M3	225pm	240pm	64.6	80.4	48.2				

COMMENTS

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Linden Avenue — DIST. TO RDWY C/L OR EOP: ~65'
TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	35	32		
MED TRKS	1	0		
HVY TRKS	1	0		
BUSES	0	0		
MOTRCLS	0	0		

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE

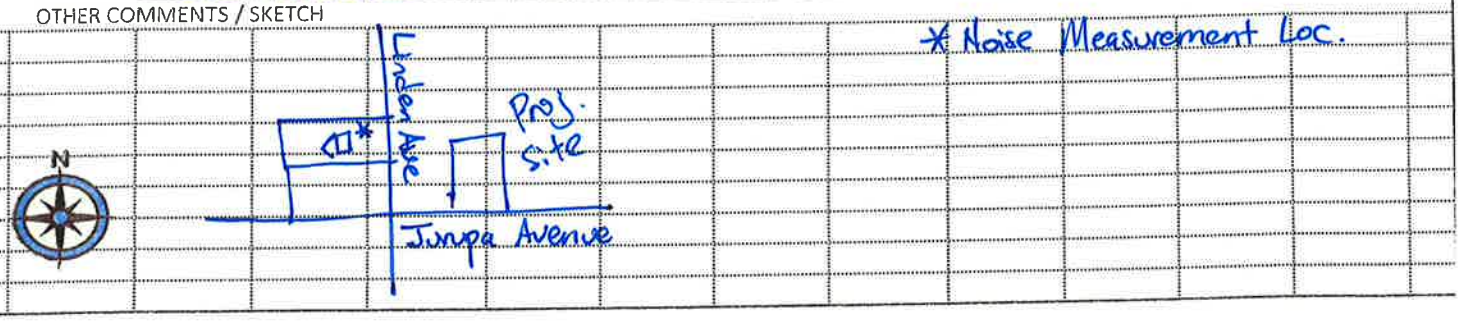
COUNT 2 (OR RDWY 2) — ___ MIN

NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 25mph

OTHER NOISE SOURCES (BACKGROUND): (DIST. AIRCRAFT) (RUSTLING LEAVES) (DIST. BARKING DOGS) BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) (DISTD GARDENERS/LANDSCAPING NOISE)
OTHER: Vehicles traveling along Linden Avenue and Jurupa Avenue

DESCRIPTION / SKETCH
TERRAIN: HARD SOFT MIXED FLAT OTHER: Front Yard Grass Area
PHOTOS: See Attached
OTHER COMMENTS / SKETCH



M3 - 11266 Linden Avenue Bloomington, CA 92316

Photo Taken: 2/5/15

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: Western Realco — PROJECT #: 8674
SITE ID: Zimmerman Elementary School
SITE ADDRESS: 11050 Linden Avenue Bloomington, CA 92316 — OBSERVER(S): Stephanie Tang
START DATE: 2/5/15 — END DATE: 2/5/15
START TIME: 256pm — END TIME: 311pm

METEOROLOGICAL CONDITIONS
TEMP: 77° F — HUMIDITY: 21 % R.H. — WIND: CALM (LIGHT) MODERATE
WINDSPD: 4 MPH — DIR. N NE S SE S SW W (NW) — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: Piccolo SLM — TYPE 1 (2) — SERIAL # 130625008
CALIBRATOR: BSWA CA 114 — SERIAL # 490151
CALIBRATION CHECK — PRE-TEST: 94.0 dBA SPL — POST-TEST: 94.0 dBA SPL — WINDSCRN: ✓

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
M4	256pm	311pm	66.6	87.4	49.0				

COMMENTS

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Linden Avenue — DIST. TO RDWY C/L OR EOP: ~100'
TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	68	34		
MED TRKS	0	0		
HVY TRKS	0	1		
BUSES	1	0		
MOTRCLS	1	0		

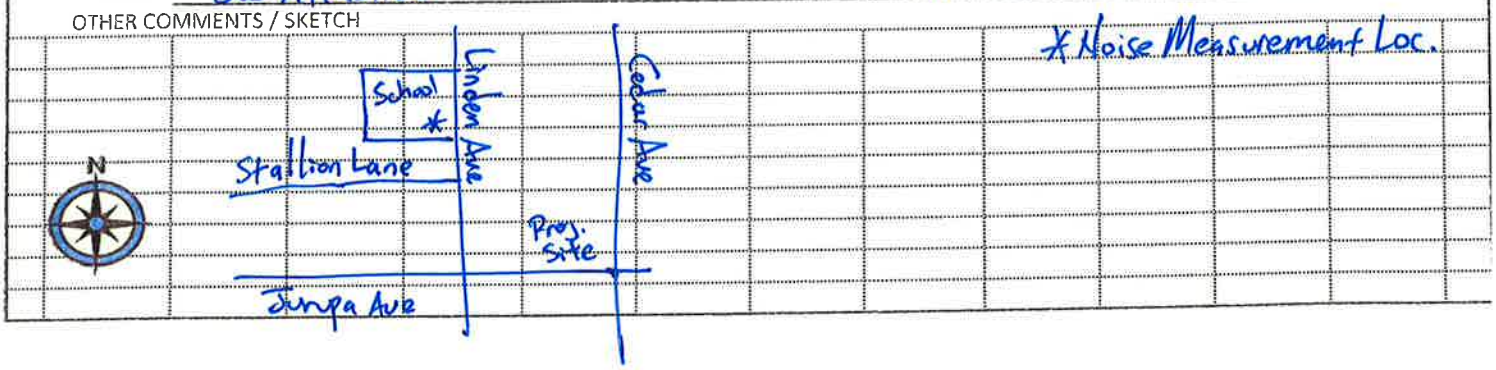
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ____

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	MIN SPEED NB/EB	MIN SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 25mph

OTHER NOISE SOURCES (BACKGROUND): (DIST. AIRCRAFT) (RUSTLING LEAVES) DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING (DIST. CONVRSTNS / YELLING) DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Skateboarding; Students playing at School; Car Engine Start

DESCRIPTION / SKETCH
TERRAIN: (HARD) SOFT MIXED (FLAT) OTHER: School Walkway
PHOTOS: See Attached
OTHER COMMENTS / SKETCH



M4 - 11050 Linden Avenue Bloomington, CA 92316

Photo Taken: 2/5/15

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: Western Realco — PROJECT #: 8674
SITE ID: Upland Indonesian Seventh-Day Adventist Church
SITE ADDRESS: 11190 Cedar Avenue Bloomington, CA 92316 — OBSERVER(S): Stephanie Tang
START DATE: 2/5/15 — END DATE: 2/5/15
START TIME: 338pm — END TIME: 353pm

METEOROLOGICAL CONDITIONS

TEMP: 75 F — HUMIDITY: 25 % R.H. — WIND: CALM / (LIGHT) / MODERATE / VARIABLE / STEADY / GUSTY
WINDSPD: 5 MPH — DIR. N NE S SE S SW W (NW)
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: Piccolo SLM — TYPE 1 (2) — SERIAL #: 130625008
CALIBRATOR: BSWA CA 114 — SERIAL #: 490151
CALIBRATION CHECK — PRE-TEST: 94.0 dBA SPL — POST-TEST: 94.0 dBA SPL — WINDSCRN: ✓

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
M5	338pm	353pm	67.2	77.9	47.7				

COMMENTS

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Cedar Avenue — DIST. TO RDWY C/L OR EOP: ~130'

TRAFFIC COUNT DURATION: 15 MIN

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	253	209		
MED TRKS	10	6		
HVY TRKS	5	10		
BUSES	~~0~~	1		
MOTRCLS	3	1		

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ___

COUNT 2 (OR RDWY 2) ___ MIN

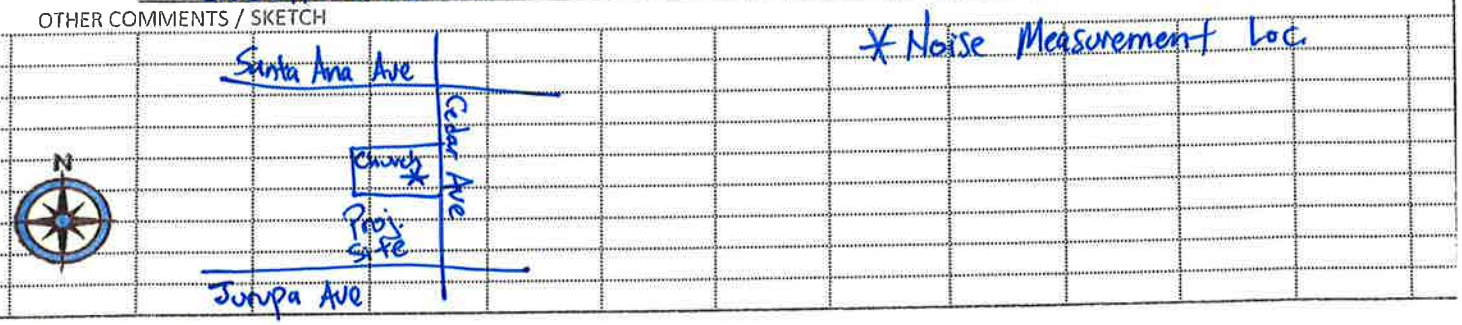
NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 45 mph

OTHER NOISE SOURCES (BACKGROUND): (DIST. AIRCRAFT) (RUSTLING LEAVES) DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS/LANDSCAPING NOISE
OTHER: Vehicles traveling along Cedar Avenue

DESCRIPTION / SKETCH

TERRAIN: (HARD) SOFT MIXED (FLAT) OTHER: Church Walkway
PHOTOS: See Attached
OTHER COMMENTS / SKETCH



M5 - 11100 Cedar Avenue Bloomington, CA 92316
Photo Taken: 2/5/15

Site 1 (LT1 Noise Measurement Data)

Rec 1 to 25	Slow Response		dBA weighting		2.0 dB resolution stats														
Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	Lmedian	Lmean	StdDev	L2%	L8%	L25%	
8/9/2016 9:54	1.0 hour	65.2	100.8	86.6	43.8	73	69	67	59	51	49	47	59	59.5	6.42	73	69	65	
8/9/2016 10:54	1.0 hour	65.2	100.8	86.9	44.5	73	69	67	57	51	49	47	57	58.3	6.36	71	67	63	
8/9/2016 11:54	1.0 hour	64.8	100.4	83.8	45.3	75	69	67	59	51	49	45	59	58.9	6.55	73	69	63	
8/9/2016 12:54	1.0 hour	65	100.6	82.9	46	73	69	69	59	51	49	47	59	59.5	6.37	73	69	65	
8/9/2016 13:54	1.0 hour	64.7	100.3	79.9	45.2	75	69	67	59	51	51	47	59	59.4	6.05	73	69	63	
8/9/2016 14:54	1.0 hour	65.7	101.3	84.6	47.8	75	69	67	61	53	53	49	61	60.4	5.51	73	67	65	
8/9/2016 15:54	1.0 hour	66.7	102.3	89.4	49.5	75	69	69	61	55	53	51	61	61.5	5.11	73	69	65	
8/9/2016 16:54	1.0 hour	65.4	101	84.4	48.7	73	71	67	61	55	53	51	61	61.1	5.24	73	69	65	
8/9/2016 17:54	1.0 hour	65.5	101.1	84.2	49.8	73	69	69	61	55	53	51	61	61.3	5.26	71	69	65	
8/9/2016 18:54	1.0 hour	66.1	101.7	85.7	49.4	75	71	67	61	55	53	51	61	61.3	5.35	73	69	65	
8/9/2016 19:54	1.0 hour	64.4	100	81.3	45.4	73	69	67	59	53	51	49	59	59.7	5.61	71	67	63	
8/9/2016 20:54	1.0 hour	63.8	99.4	82.4	46	71	69	67	59	51	49	47	59	59	5.92	71	67	63	
8/9/2016 21:54	1.0 hour	63.6	99.2	84.7	45.4	73	69	67	57	47	47	45	57	57.3	6.89	71	67	63	
8/9/2016 22:54	1.0 hour	61.4	97	79.1	43.7	71	67	65	55	47	45	45	55	55.1	6.69	69	65	59	
8/9/2016 23:54	1.0 hour	60.3	95.9	77.8	43.2	71	65	63	51	45	43	43	51	52.3	7.34	69	63	59	
8/10/2016 0:54	1.0 hour	59	94.6	80.3	42.9	69	65	61	49	43	43	43	49	50.7	7.17	67	63	55	
8/10/2016 1:54	1.0 hour	59.3	94.9	76.5	42.7	69	65	63	49	43	43	43	49	51.2	7.49	67	63	57	
8/10/2016 2:54	1.0 hour	61.6	97.2	77.6	43.1	71	67	65	53	45	43	43	53	53.8	7.66	71	65	59	
8/10/2016 3:54	1.0 hour	66.1	101.7	83.1	46.1	75	71	69	59	51	49	47	59	59.9	7.01	73	71	65	
8/10/2016 4:54	1.0 hour	67.1	102.7	91.1	49.1	75	71	71	61	53	51	49	61	61.5	6.45	73	71	67	
8/10/2016 5:54	1.0 hour	67.6	103.2	83.9	50.3	75	71	71	63	55	53	51	63	63.1	5.79	73	71	67	
8/10/2016 6:54	1.0 hour	66	101.6	84.5	47.6	73	71	69	61	55	53	49	61	61.7	5.6	73	69	67	
8/10/2016 7:54	1.0 hour	65.6	101.2	82.7	48	73	71	69	61	53	51	49	61	60.8	5.88	71	69	65	
8/10/2016 8:54	1.0 hour	64.1	99.7	83.5	45.6	73	69	67	59	51	49	47	59	59.1	5.97	71	67	63	
8/10/2016 9:54	3.5 min	65.1	88.4	74.2	48	73	69	69	61	51	51	47	61	60.7	6.13	71	69	65	

APPENDIX B

Construction Noise Model Input / Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Demolition

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest fro	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	80	0
Excavator	No	40		80.7	80	0
Excavator	No	40		80.7	120	0
Excavator	No	40		80.7	200	0
Dozer	No	40		81.7	80	0
Dozer	No	40		81.7	120	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	85.5	78.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	76.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	74.1	70.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.5	81.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Concrete Saw	No	20	89.6	400	0
Excavator	No	40	80.7	400	0
Excavator	No	40	80.7	400	0
Excavator	No	40	80.7	400	0
Dozer	No	40	81.7	400	0
Dozer	No	40	81.7	400	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.5	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Site Preparation

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest ap	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	60	0
Dozer	No	40		81.7	80	0
Dozer	No	40		81.7	150	0
Backhoe	No	40		77.6	60	0
Front End Loader	No	40		79.1	80	0
Tractor	No	40	84		80	0
Backhoe	No	40		77.6	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	80.1	76.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	72.1	68.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	76	72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	75	71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	79.9	75.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.1	81.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0
Backhoe	No	40		77.6	400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.9	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Grading

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest ap	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	60	0
Excavator	No	40		80.7	80	0
Grader	No	40	85		60	0
Dozer	No	40		81.7	100	0
Scraper	No	40		83.6	80	0
Scraper	No	40		83.6	100	0
Backhoe	No	40		77.6	150	0
Front End Loader	No	40		79.1	60	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	76.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	83.4	79.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	75.6	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	79.5	75.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	77.5	73.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	83.4	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Grader	No	40	85		400	0
Dozer	No	40		81.7	400	0
Scraper	No	40		83.6	400	0
Scraper	No	40		83.6	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	66.9	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.9	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Building Construction

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest ap	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	60	0
Man Lift	No	20		74.7	80	0
Man Lift	No	20		74.7	60	0
Man Lift	No	20		74.7	100	0
Generator (<25KVA, VMS sig	No	50		72.8	80	0
Backhoe	No	40		77.6	100	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		60	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	79	71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	70.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	73.1	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	68.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS sig	68.7	65.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	82.4	78.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	82.4	80.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	400	0
Man Lift	No	20		74.7	400	0
Man Lift	No	20		74.7	400	0
Man Lift	No	20		74.7	400	0
Generator (<25KVA, VMS sig	No	50		72.8	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator (<25KVA, VMS sig	54.7	51.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.9	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Paving

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest ap	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	60	0
Paver	No	50		77.2	80	0
All Other Equipment > 5 HP	No	50	85		60	0
All Other Equipment > 5 HP	No	50	85		100	0
Roller	No	20		80	60	0
Roller	No	20		80	80	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	75.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	73.1	70.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	83.4	80.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	79	76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	78.4	71.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	75.9	68.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	83.4	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Paver	No	50		77.2	400	0
Paver	No	50		77.2	400	0
All Other Equipment > 5 HP	No	50	85		400	0
All Other Equipment > 5 HP	No	50	85		400	0
Roller	No	20		80	400	0
Roller	No	20		80	400	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	59.2	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	66.9	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	66.9	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.9	68.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 8/31/2016
Case Descr Bloomington Dist'n Center - Architectural Coatings

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest ap	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	60	0
Pickup Truck	No	40		75	80	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	76.1	72.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	70.9	66.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.1	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Ce	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	400	0
Pickup Truck	No	40		75	400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	59.6	55.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	56.9	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	59.6	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX C

Traffic Noise Modeling Input and Output Files

Traffic Noise Model (TNM®)

Input/Output

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **8674**
RUN: **Blmngtn Wstn RlcoDistCntr Ex 062316**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Cedar Ave N of Jurupa Ave	70.0	point2	2	4,000.0	3,010.0	100.00				Average	
		point1	1	4,000.0	5,000.0	100.00					
Cedar Ave S of Jurupa Ave	70.0	point4	4	4,000.0	100.0	100.00				Average	
		point3	3	4,000.0	2,990.0	100.00					
Linden Ave N of Jurupa Ave	40.0	point6	6	3,000.0	3,010.0	100.00				Average	
		point5	5	3,000.0	5,000.0	100.00					
Linden Ave S of Jurupa Ave	40.0	point8	8	3,000.0	100.0	100.00				Average	
		point7	7	3,000.0	2,990.0	100.00					
Jurupa Ave W of Linden Ave	25.0	point9	9	1,000.0	3,000.0	100.00				Average	
		point10	10	3,000.0	3,000.0	100.00					
Jurupa Ave btwn Linden Ave and Cedar	25.0	point11	11	3,010.0	3,000.0	100.00				Average	
		point12	12	4,000.0	3,000.0	100.00					
Jurupa Ave E of Cedar Ave	25.0	point13	13	4,010.0	3,000.0	100.00				Average	
		point14	14	6,000.0	3,000.0	100.00					

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 8674
RUN: Blmngtn Wstn RlcoDistCntr Ex 062316

Roadway	Points		Segment										
Name	Name	No.											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Cedar Ave N of Jurupa Ave	point2	2	2050	92	45	3	45	5	45	0	0	0	0
	point1	1											
Cedar Ave S of Jurupa Ave	point4	4	2020	92	45	3	45	5	45	0	0	0	0
	point3	3											
Linden Ave N of Jurupa Ave	point6	6	270	97	25	1	25	2	25	0	0	0	0
	point5	5											
Linden Ave S of Jurupa Ave	point8	8	210	97	25	1	25	2	25	0	0	0	0
	point7	7											
Jurupa Ave W of Linden Ave	point9	9	410	84	40	4	40	12	40	0	0	0	0
	point10	10											
Jurupa Ave btwn Linden Ave and Cedar	point11	11	500	84	40	4	40	12	40	0	0	0	0
	point12	12											
Jurupa Ave E of Cedar Ave	point13	13	570	84	40	4	40	12	40	0	0	0	0
	point14	14											

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8674
RUN: Blmngtn Wstn RlcoDistCntr Ex 062316

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	4,100.0	3,800.0	100.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	3,500.0	2,930.0	100.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	2,950.0	3,300.0	100.00	5.00	0.00	66	10.0	8.0	Y
M4	4	1	2,900.0	4,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
M5	5	1	3,850.0	4,400.0	100.00	5.00	0.00	66	10.0	8.0	Y
R1	7	1	3,050.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R2	8	1	4,100.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R3	10	1	2,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y
R4	11	1	4,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 14 July 2016
M Greene TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8674
RUN: Blmngtn Wstn RlcoDistCntr Ex 062316
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
M2	2	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
M3	3	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
M4	4	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
M5	5	1	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0	8	-8.0
R1	7	1	0.0	56.3	66	56.3	10	----	56.3	0.0	8	-8.0
R2	8	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
R3	10	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
R4	11	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **8674**
RUN: **BlmngtnRlcoDistCntr Ex w Prj 062316**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Cedar Ave N of Jurupa Ave	70.0	point2	2	4,000.0	3,010.0	100.00				Average	
		point1	1	4,000.0	5,000.0	100.00					
Cedar Ave S of Jurupa Ave	70.0	point4	4	4,000.0	100.0	100.00				Average	
		point3	3	4,000.0	2,990.0	100.00					
Linden Ave N of Jurupa Ave	40.0	point6	6	3,000.0	3,010.0	100.00				Average	
		point5	5	3,000.0	5,000.0	100.00					
Linden Ave S of Jurupa Ave	40.0	point8	8	3,000.0	100.0	100.00				Average	
		point7	7	3,000.0	2,990.0	100.00					
Jurupa Ave W of Linden Ave	25.0	point9	9	1,000.0	3,000.0	100.00				Average	
		point10	10	3,000.0	3,000.0	100.00					
Jurupa Ave btwn Linden Ave and Cedar	25.0	point11	11	3,010.0	3,000.0	100.00				Average	
		point12	12	4,000.0	3,000.0	100.00					
Jurupa Ave E of Cedar Ave	25.0	point13	13	4,010.0	3,000.0	100.00				Average	
		point14	14	6,000.0	3,000.0	100.00					

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 8674
RUN: BlmngtnRlcoDistCntr Ex w Prj 062316

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Cedar Ave N of Jurupa Ave	point2	2	2120	91	45	3	45	6	45	0	0	0	0
	point1	1											
Cedar Ave S of Jurupa Ave	point4	4	2040	92	45	3	45	5	45	0	0	0	0
	point3	3											
Linden Ave N of Jurupa Ave	point6	6	270	97	25	1	25	2	25	0	0	0	0
	point5	5											
Linden Ave S of Jurupa Ave	point8	8	210	97	25	1	25	2	25	0	0	0	0
	point7	7											
Jurupa Ave W of Linden Ave	point9	9	410	84	40	4	40	12	40	0	0	0	0
	point10	10											
Jurupa Ave btwn Linden Ave and Cedar	point11	11	520	84	40	4	40	12	40	0	0	0	0
	point12	12											
Jurupa Ave E of Cedar Ave	point13	13	580	84	40	4	40	12	40	0	0	0	0
	point14	14											

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 8674
RUN: BlmngtnRlcoDistCntr Ex w Prj 062316

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	4,100.0	3,800.0	100.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	3,500.0	2,930.0	100.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	2,950.0	3,300.0	100.00	5.00	0.00	66	10.0	8.0	Y
M4	4	1	2,900.0	4,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
M5	5	1	3,850.0	4,400.0	100.00	5.00	0.00	66	10.0	8.0	Y
R1	7	1	3,050.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R2	8	1	4,100.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R3	10	1	2,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y
R4	11	1	4,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 14 July 2016
M Greene TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8674
RUN: BlmngtnRlcoDistCntr Ex w Prj 062316
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
M2	2	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
M3	3	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0
M4	4	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
M5	5	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
R1	7	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
R2	8	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
R3	10	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
R4	11	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **8674**
RUN: **BlmngtnRealco Dist Fut wo Prj 062316**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Cedar Ave N of Jurupa Ave	70.0	point2	2	4,000.0	3,010.0	100.00				Average	
		point1	1	4,000.0	5,000.0	100.00					
Cedar Ave S of Jurupa Ave	70.0	point4	4	4,000.0	100.0	100.00				Average	
		point3	3	4,000.0	2,990.0	100.00					
Linden Ave N of Jurupa Ave	40.0	point6	6	3,000.0	3,010.0	100.00				Average	
		point5	5	3,000.0	5,000.0	100.00					
Linden Ave S of Jurupa Ave	40.0	point8	8	3,000.0	100.0	100.00				Average	
		point7	7	3,000.0	2,990.0	100.00					
Jurupa Ave W of Linden Ave	25.0	point9	9	1,000.0	3,000.0	100.00				Average	
		point10	10	3,000.0	3,000.0	100.00					
Jurupa Ave btwn Linden Ave and Cedar	25.0	point11	11	3,010.0	3,000.0	100.00				Average	
		point12	12	4,000.0	3,000.0	100.00					
Jurupa Ave E of Cedar Ave	25.0	point13	13	4,010.0	3,000.0	100.00				Average	
		point14	14	6,000.0	3,000.0	100.00					

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 8674
RUN: BlmngtnRealco Dist Fut wo Prj 062316

Roadway	Points		Segment										
Name	Name	No.											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Cedar Ave N of Jurupa Ave	point2	2	2150	92	45	3	45	5	45	0	0	0	0
	point1	1											
Cedar Ave S of Jurupa Ave	point4	4	2130	92	45	3	45	5	45	0	0	0	0
	point3	3											
Linden Ave N of Jurupa Ave	point6	6	280	97	25	1	25	2	25	0	0	0	0
	point5	5											
Linden Ave S of Jurupa Ave	point8	8	210	97	25	1	25	2	25	0	0	0	0
	point7	7											
Jurupa Ave W of Linden Ave	point9	9	420	84	40	4	40	12	40	0	0	0	0
	point10	10											
Jurupa Ave btwn Linden Ave and Cedar	point11	11	510	84	40	4	40	12	40	0	0	0	0
	point12	12											
Jurupa Ave E of Cedar Ave	point13	13	630	84	40	4	40	12	40	0	0	0	0
	point14	14											

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: RECEIVERS
PROJECT/CONTRACT: **8674**
RUN: **BlmngtnRealco Dist Fut wo Prj 062316**

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	4,100.0	3,800.0	100.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	3,500.0	2,930.0	100.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	2,950.0	3,300.0	100.00	5.00	0.00	66	10.0	8.0	Y
M4	4	1	2,900.0	4,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
M5	5	1	3,850.0	4,400.0	100.00	5.00	0.00	66	10.0	8.0	Y
R1	7	1	3,050.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R2	8	1	4,100.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R3	10	1	2,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y
R4	11	1	4,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 14 July 2016
M Greene TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8674
RUN: BlmngtnRealco Dist Fut wo Prj 062316
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
M2	2	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
M3	3	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
M4	4	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
M5	5	1	0.0	66.4	66	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
R1	7	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
R2	8	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
R3	10	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
R4	11	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **8674**
RUN: **Blmngtn RealcoDistCntr Ft w Prj 062316**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Cedar Ave N of Jurupa Ave	70.0	point2	2	4,000.0	3,010.0	100.00				Average	
		point1	1	4,000.0	5,000.0	100.00					
Cedar Ave S of Jurupa Ave	70.0	point4	4	4,000.0	100.0	100.00				Average	
		point3	3	4,000.0	2,990.0	100.00					
Linden Ave N of Jurupa Ave	40.0	point6	6	3,000.0	3,010.0	100.00				Average	
		point5	5	3,000.0	5,000.0	100.00					
Linden Ave S of Jurupa Ave	40.0	point8	8	3,000.0	100.0	100.00				Average	
		point7	7	3,000.0	2,990.0	100.00					
Jurupa Ave W of Linden Ave	25.0	point9	9	1,000.0	3,000.0	100.00				Average	
		point10	10	3,000.0	3,000.0	100.00					
Jurupa Ave btwn Linden Ave and Cedar	25.0	point11	11	3,010.0	3,000.0	100.00				Average	
		point12	12	4,000.0	3,000.0	100.00					
Jurupa Ave E of Cedar Ave	25.0	point13	13	4,010.0	3,000.0	100.00				Average	
		point14	14	6,000.0	3,000.0	100.00					

Dudek 14 July 2016
M Greene TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 8674
RUN: Blmngtn RealcoDistCntr Ft w Prj 062316

Roadway	Points		Segment										
Name	Name	No.	Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Cedar Ave N of Jurupa Ave	point2	2	2220	91	45	3	45	6	45	0	0	0	0
	point1	1											
Cedar Ave S of Jurupa Ave	point4	4	2150	92	45	3	45	5	45	0	0	0	0
	point3	3											
Linden Ave N of Jurupa Ave	point6	6	280	97	25	1	25	2	25	0	0	0	0
	point5	5											
Linden Ave S of Jurupa Ave	point8	8	210	97	25	1	25	2	25	0	0	0	0
	point7	7											
Jurupa Ave W of Linden Ave	point9	9	420	84	40	4	40	12	40	0	0	0	0
	point10	10											
Jurupa Ave btwn Linden Ave and Cedar	point11	11	530	84	40	4	40	12	40	0	0	0	0
	point12	12											
Jurupa Ave E of Cedar Ave	point13	13	640	84	40	4	40	12	40	0	0	0	0
	point14	14											

Dudek **14 July 2016**
M Greene **TNM 2.5**

INPUT: RECEIVERS
PROJECT/CONTRACT: **8674**
RUN: **Blmngtn RealcoDistCntr Ft w Prj 062316**

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
M1	1	1	4,100.0	3,800.0	100.00	5.00	0.00	66	10.0	8.0	Y
M2	2	1	3,500.0	2,930.0	100.00	5.00	0.00	66	10.0	8.0	Y
M3	3	1	2,950.0	3,300.0	100.00	5.00	0.00	66	10.0	8.0	Y
M4	4	1	2,900.0	4,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
M5	5	1	3,850.0	4,400.0	100.00	5.00	0.00	66	10.0	8.0	Y
R1	7	1	3,050.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R2	8	1	4,100.0	2,500.0	100.00	5.00	0.00	66	10.0	8.0	Y
R3	10	1	2,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y
R4	11	1	4,500.0	2,950.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 14 July 2016
M Greene TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 8674
RUN: Blmngtn RealcoDistCntr Ft w Prj 062316
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
M1	1	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
M2	2	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
M3	3	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
M4	4	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
M5	5	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
R1	7	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
R2	8	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
R3	10	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
R4	11	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

APPENDIX D

On-Site Noise Modeling Files

Noise Level Predictions from On-Site Activities

Linden Avenue Residences West of Project Site

Noise Source	Reference Noise Level (dBA)[1]	Reference distance (ft)	Distance to Receiver	Noise Level at Receiver (dBA)	Shielding Atten (dBA)	Excess Attenuation (dBA)	Noise Level at Receiver with Attenuation (dBA)	Level of Activity	Duration of Activity (Fraction of Hour)	Occurences / Hr.	Duration (min.s / hour) Total	Leq Calculation (t/60)10^(L/10)*n
S-1, Loading Dock Back-In	66.0	50	466	46.6	6.2	0.7	39.7	50% of 12 trucks/hr@ 90 seconds	0.03	6	9.00	31.4
S-2, Loading Dock Pull-Out	73.2	50	466	53.8	6.2	0.7	46.9	50% of 5 trucks/hr@ 25 seconds	0.01	2.5	1.04	29.3
S-3, Trash Compactor - Near	68.0	3	188	32.1	6.2	0.3	25.6	2 hours/day	0.08	1	5.00	14.8
S-4, Forklift (inside)	73.8	50	454	54.6	10.0	0.7	43.9	50% of 40 forklifts/hr @45 seconds	0.01	20	15.00	37.9
S-5, Truck Drive-By - Near	73.2	50	112	66.2	0.0	0.2	66.0	10% of 17 trucks/hr @ 10 seconds	0.003	1.7	0.28	42.8
S-6, Rooftop Ventilation	80.0	3	903	30.4	11.5	1.4	17.4	Continuous during the day and night	1.00	1	60.00	17.4
S-7, Trash Compactor - Far	68.0	3	1105	16.7	6.2	1.8	8.7	2 hours/day	0.08	1	5.00	-2.1
S-8, Truck Drive-By - Far	73.2	50	1115	46.2	6.2	1.8	38.3	50% of 17 trucks/hr @ 25 seconds	0.01	8.5	3.54	26.0
S-9, Passenger Car Parking Noise	49.0	100	690	32.3	0.0	1.1	31.2	25% of Peak-Hour Passenger Trips (65 Total)	1.00	1	15.00	25.1
								Leq (dBA) - Worst-Case				**44.5**

1 - Source: Wilder, 2000. Noise survey of commercial loading dock operations.

Noise Level Predictions from On-Site Activities

Jurupa Avenue Residences South of Project Site

Noise Source	Reference Noise Level (dBA)[1]	Reference distance (ft)	Distance to Receiver	Noise Level at Receiver (dBA)	Shielding Atten (dBA)	Excess Attenuation (dBA)	Noise Level at Receiver with Attenuation (dBA)	Level of Activity	Duration of Activity (Fraction of Hour)	Occurences / Hr.	Duration (min.s / hour) Total	Leq Calculation (t/60)10^(L/10)*n
S-1, Loading Dock Back-In	66.0	50	500	46.0	0.0	0.8	45.2	50% of 12 trucks/hr@ 90 seconds	0.03	6	9.00	37.0
S-2, Loading Dock Pull-Out	73.2	50	500	53.2	0.0	0.8	52.4	50% of 5 trucks/hr@ 25 seconds	0.01	2.5	1.04	34.8
S-3, Trash Compactor - Near	68.0	3	530	23.1	0.0	0.8	22.2	2 hours/day	0.08	1	5.00	11.4
S-4, Forklift (inside)	73.8	50	540	53.1	10.0	0.9	42.3	50% of 40 forklifts/hr @45 seconds	0.01	20	15.00	36.2
S-5, Truck Drive-By - Near	73.2	50	270	58.6	0.0	0.4	58.1	25% of 17 trucks/hr @ 10 seconds	0.003	4.25	0.71	38.8
S-6, Rooftop Ventilation	80.0	3	850	31.0	11.5	1.4	18.0	Continuous during the day and night	1.00	1	60.00	18.0
S-7, Trash Compactor - Far	68.0	3	950	18.0	0.0	1.5	16.5	2 hours/day	0.08	1	5.00	5.7
S-8, Truck Drive-By - Far	73.2	50	884	48.3	0.0	1.4	46.8	50% of 17 trucks/hr @ 25 seconds	0.01	8.5	3.54	34.5
S-9, Passenger Car Parking Noise	49.0	100	285	39.9	0.0	0.5	39.5	25% of Peak-Hour Passenger Trips (65 Total)	1.00	1	15.00	33.5
								Leq (dBA) - Worst-Case				**44.0**

1 - Source: Wilder, 2000. Noise survey of commercial loading dock operations.

Noise Level Predictions from On-Site Activities

Cedar Avenue Residences East of Project Site												
Noise Source	Reference Noise Level (dBA)[1]	Reference distance (ft)	Distance to Receiver	Noise Level at Receiver (dBA)	Shielding Atten (dBA)	Excess Attenuation (dBA)	Noise Level at Receiver with Attenuation (dBA)	Level of Activity	Duration of Activity (Fraction of Hour)	Occurences / Hr.	Duration (min.s / hour) Total	Leq Calculation (t/60)10^(L/10)*n
S-1, Loading Dock Back-In	66.0	50	500	46.0	10.0	0.8	35.2	50% of 12 trucks/hr@ 90 seconds	0.03	6	9.00	27.0
S-2, Loading Dock Pull-Out	73.2	50	500	53.2	10.0	0.8	42.4	50% of 5 trucks/hr@ 25 seconds	0.01	2.5	1.04	24.8
S-3, Trash Compactor - Near	68.0	3	530	23.1	10.0	0.8	12.2	2 hours/day	0.08	1	5.00	1.4
S-4, Forklift (inside)	73.8	50	540	53.1	10.0	0.9	42.3	50% of 40 forklifts/hr @45 seconds	0.01	20	15.00	36.2
S-5, Truck Drive-By - Near	73.2	50	270	58.6	0.0	0.4	58.1	25% of 17 trucks/hr @ 10 seconds	0.003	4.25	0.71	38.8
S-6, Rooftop Ventilation	80.0	3	850	31.0	11.5	1.4	18.0	Continuous during the day and night	1.00	1	60.00	18.0
S-7, Trash Compactor - Far	68.0	3	950	18.0	10.0	1.5	6.5	2 hours/day	0.08	1	5.00	-4.3
S-8, Truck Drive-By - Far	73.2	50	884	48.3	10.0	1.4	36.8	50% of 17 trucks/hr @ 10 seconds	0.003	8.5	1.42	20.6
S-9, Passenger Car Parking Noise	49.0	100	185	43.7	0.0	0.3	43.4	20% of Peak-Hour Passenger Trips (65 Total)	1.00	1	12.00	36.4
								Leq (dBA) - Worst-Case				**42.4**

Noise Level Predictions from On-Site Activities

1 - Source: Wilder, 2000. Noise survey of commercial loading dock operations.

Noise Level Predictions from On-Site Activities

Elementary School Northwest of Project Site

Noise Source	Reference Noise Level (dBA) [1]	Reference distance (ft)	Distance to Receiver	Noise Level at Receiver (dBA)	Shielding Atten (dBA)	Excess Attenuation (dBA)	Noise Level at Receiver with Attenuation (dBA)	Level of Activity	Duration of Activity (Fraction of Hour)	Occurences / Hr.	Duration (min.s / hour) Total	Leq Calculation (t/60)10^(L/10)*n
S-1, Loading Dock Back-In	66.0	50	594	44.5	6.2	1.0	37.4	50% of 12 trucks/hr@ 90 seconds	0.03	6	9.00	29.1
S-2, Loading Dock Pull-Out	73.2	50	594	51.7	6.2	1.0	44.6	50% of 5 trucks/hr@ 25 seconds	0.01	2.5	1.04	27.0
S-3, Trash Compactor - Near	68.0	3	288	28.4	6.2	0.5	21.7	2 hours/day	0.08	1	5.00	10.9
S-4, Forklift (inside)	73.8	50	582	52.5	10.0	0.9	41.5	50% of 40 forklifts/hr @45 seconds	0.01	20	15.00	35.5
S-5, Truck Drive-By - Near	73.2	50	212	60.7	5.0	0.3	55.3	10% of 17 trucks/hr @ 10 seconds	0.003	1.7	0.28	32.0
S-6, Rooftop Ventilation	80.0	3	1007	29.5	11.5	1.6	16.3	Continuous during the day and night	1.00	1	60.00	16.3
S-7, Trash Compactor - Far	68.0	3	1205	15.9	6.2	1.9	7.8	2 hours/day	0.08	1	5.00	-3.0
S-8, Truck Drive-By - Far	73.2	50	1215	45.5	6.2	1.9	37.4	50% of 17 trucks/hr @ 10 seconds	0.003	8.5	1.42	21.1
S-9, Passenger Car Parking Noise	49.0	100	1300	26.8	10.0	2.1	14.7	20% of Peak-Hour Passenger Trips (65 Total)	1.00	1	12.00	7.7
								Leq (dBA) - Worst-Case				**38.2**

1 - Source: Wilder, 2000. Noise survey of commercial loading dock operations.

Noise Level Predictions from On-Site Activities

Church North of Project Site												
Noise Source	Reference Noise Level (dBA)[1]	Reference distance (ft)	Distance to Receiver	Noise Level at Receiver (dBA)	Shielding Atten (dBA)	Excess Attenuation (dBA)	Noise Level at Receiver with Attenuation (dBA)	Level of Activity	Duration of Activity (Fraction of Hour)	Occurences / Hr.	Duration (min.s / hour) Total	Leq Calculation (t/60)10^(L/10)*n
S-1, Loading Dock Back-In	66.0	50	727	42.7	6.2	1.2	35.4	50% of 12 trucks/hr@ 90 seconds	0.03	6	9.00	27.2
S-2, Loading Dock Pull-Out	73.2	50	727	49.9	6.2	1.2	42.6	50% of 5 trucks/hr@ 25 seconds	0.01	2.5	1.04	25.0
S-3, Trash Compactor - Near	68.0	3	420	25.1	6.2	0.7	18.2	2 hours/day	0.08	1	5.00	7.4
S-4, Forklift (inside)	73.8	50	704	50.8	10.0	1.1	39.7	50% of 40 forklifts/hr @45 seconds	0.01	20	15.00	33.7
S-5, Truck Drive-By - Near	73.2	50	336	56.7	5.0	0.5	51.1	50% of 17 trucks/hr @ 10 seconds	0.003	8.5	1.42	34.8
S-6, Rooftop Ventilation	80.0	3	320	39.4	11.5	0.5	27.4	Continuous during the day and night	1.00	1	60.00	27.4
S-7, Trash Compactor - Far	68.0	3	1250	15.6	6.2	2.0	7.4	2 hours/day	0.08	1	5.00	-3.4
S-8, Truck Drive-By - Far	73.2	50	590	51.8	5.0	0.9	45.8	25% of 17 trucks/hr @ 10 seconds	0.003	4.25	0.71	26.5
S-9, Passenger Car Parking Noise	49.0	100	240	41.4	6.2	0.4	34.8	20% of Peak-Hour Passenger Trips (65 Total)	1.00	1	12.00	27.9
								Leq (dBA) - Worst-Case				**38.9**

1 - Source: Wilder, 2000. Noise survey of commercial loading dock operations.

Parking Lot Noise Sources at 100 Feet						
Source	**Level (dBA)**	**Assumed duration (seconds) per car**	**Quantity per Hour**	**Total Duration (seconds)**	**Fraction of Hour**	**Leq (dBA)**
Autos at 14 mph	44	60	65	3900	1.00	44.3
Car Alarm Signal	63	10	1	10	0.00	37.4
Car Alarm Chirp	48	0.1	65	6.5	0.00	20.6
Car Horns	63	2	2	4	0.00	33.5
Door Slams	58	0.1	98	9.75	0.00	32.3
Talking	30	60	33	1950	0.54	27.3
Radios	58	15	16	243.75	0.07	46.3

Source: Gordon Bricken & Associates, 1996. Estimates based on actual noise measurements taken at various parking lots.

Total **49.0**

RAY-TRACE PROGRAM (FOR A POINT-SOURCE)

Uses the Equation: $(A_{e4})_{point}=20*\log[(2*pi*N)^{1/2}/\tanh(2*pi*N)^{1/2}]+5dB$

(Ref. Pg.174, Noise and Vibration Control, L.L. Beranek Editor, 1971 Ed.

Project: Western Realco - Bloomington
Date: 7/11/16
By: MGG

Please Enter: Using English (E) units or Metric (M) units ? **E**

Ray Trace Number/Description	Source-Receiver Distance (ft. or m)	Source Base Elev. (ft. or m)	Source Height above Ground (ft. or m)	Receiver Base Elev. (ft. or m)	Receiver Height above Ground (ft. or m)	Horizontal Barrier Dist. (in ref. to source) (ft. or m)	Barrier Base Elev. (ft. or m)	Barrier Height (ft. or m)	Dominant Freq.(Hz)	Source-Rcvr Straight-Line Dist. (ft. or m)	Source-Top-of-Barrier Dist. (ft. or m)	Receiver-Top-of-Barrier Dist. (ft. or m)	Lambda	N_{max}	$AE_{(barriers)}$ (dB)
1. Source Truck Drive By Near	336.0	100.0	8.0	100.0	5.0	63.0	100.0	**8.0**	500.0	336.0	63.0	273.0	2.3	0.0	**5.0**
2. Source Truck Back in / Pull out	466.2	95.0	8.0	100.0	5.0	380.0	100.0	**8.0**	500.0	466.2	380.0	86.2	2.3	0.1	**6.2**
3. Rooftop Ventilation Typ	850.0	133.0	5.0	100.0	5.0	320.0	133.0	**10.0**	500.0	850.6	320.0	531.4	2.3	0.7	**11.5**
4. Source Shielding from Building for Eastern Receivers	500.0	100.0	8.0	100.0	5.0	200.0	100.0	**40.0**	500.0	500.0	202.5	302.0	2.3	4.1	**19.1**

APPENDIX E

Resume

Mike Greene, INCE

Environmental Specialist/Acoustician

Mike Greene is an environmental specialist/acoustician with more than 26 years' professional experience in acoustical analysis and noise control engineering. He has conducted and participated in noise and vibration analyses for hundreds of transportation, commercial, industrial, and residential developments throughout California and the United States.

EDUCATION

University of California, San Diego
BS, Applied Mechanics, 1985

CERTIFICATIONS

Board Certified, Institute of Noise Control Engineering (INCE Bd. Cert.)

County of San Diego–Approved

PROFESSIONAL AFFILIATIONS

Transportation Research Board, ADC40 Subcommittee

As a project or task manager, Mr. Greene has conducted noise studies for industrial and commercial facilities, ranging from power generation projects to hospitals and super-speedway facilities. He is experienced in the modeling of existing and future roadway noise impacts using the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM®) and is experienced with the use of both SoundPLAN and CadnaA, computer software programs for prediction and assessment of noise levels in the vicinity of industrial facilities and other noise sources such as roadways, railways and airports.

Project Experience

Development

Sunroad East Harbor Island Hotel Draft Environmental Impact Report (EIR) and Port Master Plan Amendment, Port of San Diego, California. Served as task manager to conduct a noise analysis that included noise measurements, on-site and off-site traffic and construction noise impact assessment, in addition to other on-site operational noises, such as heating, ventilation, and air conditioning (HVAC), parking lots, etc., and effects from nearby San Diego International Airport. The results of the analysis were summarized in a technical report and in the noise section of the EIR.

Rider Distribution Warehouse Technical Studies and EIR, Aiere Property Group, Riverside County, California. Responsible for noise measurement, analysis, and reporting of potential effects on the noise environment from the project. Construction noise (which included potential rock blasting) and operational noise from warehouse and truck operations were addressed for this project which was located near a nature preserve area and residences.

Tejon Mountain Village EIR, Tejon Ranch Company, Tejon, California. Conducted the noise analysis for the EIR for Tejon Mountain Village, a proposed resort community located near the Grapevine in northern Los Angeles County. Noise measurements of existing ambient noise levels were conducted in the vicinity of the Interstate (I-) 5 freeway as well as in the more remote portions of the project site. Traffic noise was modeled using the TNM® noise model. Additionally, potential for noise impacts from a distant sand and gravel mine was assessed, as well as from construction noise of the project itself.

Coronado Yacht Club Redevelopment and Expansion EIR, Port of San Diego, California. Served as noise task manager to provide guidance and oversight of the noise analysis and reporting of results for the proposed improvements to the Coronado Yacht Club.

San Diego Convention Center EIR, Port of San Diego, California. Served as noise task manager to provide guidance and oversight of the noise analysis and reporting of results for the proposed expansion of the San Diego Convention Center. Issues included potential noise effects from construction activities as well as proposed outdoor events overlooking the harbor and Coronado Island residents.

San Pedro Waterfront EIS (Environmental Impact Statement)/EIR, Port of Los Angeles, California. As noise task manager, was responsible for the successful completion of the noise analysis. Managed and supervised the noise measurements, modeling, analysis and results reporting. Primary issues of concern included potential effects from traffic and construction noise.

Wilmington Waterfront EIR, Port of Los Angeles, California. Responsible for the successful completion of the noise analysis for this complex project. Conducted and supervised the noise measurements, modeling, analysis and results reporting, which involved analysis of potential effects from traffic, freight rail, light rail, industrial and construction noise.

Education

EIR for Campus Master Plan and Student Housing, California State University, Dominguez Hills, Carson, California. Responsible for the completion of the noise analysis and reporting for the project. Supervised the noise measurements, modeling, analysis and results reporting, which involved analysis of potential effects from traffic, on-campus facilities, and operations and construction noise.

Multiple School Projects, Los Angeles Unified School District, California. Noise analyses were conducted for several proposed school construction projects as part of an on-call environmental consulting contract for the district. Noise studies were conducted for L.A. Unified School District High Schools 13, 9, and 12. The analyses included noise measurements of ambient conditions and traffic noise impact analysis to estimate potential noise effects at both existing noise-sensitive land uses and proposed on-site receptors. Additionally, noise during construction and operation (such as from school athletic fields and stadiums) was assessed. The results of the noise studies were summarized in noise technical reports.

Energy

Haynes Generating Station Units 3–6 Demolition Project, Los Angeles Department of Water and Power (LADWP), Long Beach, California. The LADWP proposes to remove the existing Haynes Generating Station electrical generation Units 3–6 from the Haynes facility site, making space for a potential future repowering project. The proposed project would include the demolition of the units and ancillary facilities. Dudek is preparing the noise analysis of potential noise and vibration impacts during the demolition process, which is anticipated to be a 4-year endeavor.

Scattergood Generating Station Project, LADWP, El Segundo, California. Preparing the noise section of the EIR for the final phase of the ongoing repower project**.** In conjunction with this work, Dudek has also been providing direct support to LADWP staff in evaluating and conducting noise measurements of the current noise environment, specifically relating to the recent installation of several new units and any resultant noise increase in the noise levels at adjacent noise-sensitive land uses.

El Segundo Power Redevelopment Project, NRG/Dynegy, El Segundo, California. Conducted the noise analysis for a proposed 630-megawatt (MW) power plant. Project would replace two aging power units with a newer, more efficient combined-cycle (combustion turbines and steam turbine) plant.

Responsible for the preparation of the noise analysis, a section of the project's Application for Certification, response to comments, and oral and written testimony before the California Energy Commission.

Weymouth Filtration Plant Solar Project, Metropolitan Water District, La Verne, California. Conducted the noise study for the Initial Study/Mitigated Negative Declaration (IS/MND) for this project. The primary issue with respect to noise from the project was potential effects at nearby residences and other land uses from construction activities associated with the proposed project.

Lake Skinner Solar Project, Metropolitan Water District, Riverside County, California. Conducted the noise study for the IS/MND for this project, located in Riverside County. The primary issue with respect to noise was potential effects at adjacent residences from construction activities associated with the proposed project.

OceanWay Secure Energy Project EIS/EIR for Woodside Natural Gas Deepwater Port, Amec Foster Wheeler, Los Angeles County, California. Responsible for the noise and vibration section of the EIS/EIR of this proposed liquefied natural gas (LNG) project. The potential noise/vibration effects of onshore construction and operations were assessed with respect to local, state and federal standards.

Transportation

Meadowpass Road Extension EIR, City of Walnut, California. Responsible for the measurement, analysis, and reporting. The primary issue for this project with respect to noise was potential effects from traffic at nearby residences as a result of the construction of the road extension.

1-15 Widening from San Bernardino to 1-215 EIR/EIS, Transportation Commission, County of Riverside, California. Potential noise increases at adjacent noise-sensitive land uses were addressed pursuant to the FHWA and California Department of Transportation (Caltrans) guidelines. Noise measurements were conducted at representative noise-sensitive land uses along the 43.5-mile project alignment. Noise modeling (TNM® Version 2.5) was conducted in order to assess the changes in future traffic noise levels resulting from the proposed improvements, to determine existing and future traffic noise impacts and to provide noise abatement design guidance as needed. The results of the noise study were summarized in a noise study report and noise abatement decision report pursuant to Caltrans Technical Noise Supplement (TeNS) and noise protocol guidance.

State Route (SR-) 2 Freeway Terminus IS/Environmental Assessment (EA), Metro, Los Angeles, California. As part of this joint National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) document, the project was analyzed at an equal level of detail for the No Action alternative and all five project alternatives. The analyses were conducted in accordance with guidelines set forth in the Caltrans Traffic Noise Protocol and TeNS handbooks. The study included noise measurements of ambient conditions adjacent to the project alignment, traffic noise impact analysis (using TNM® Version 2.5) to estimate potential noise effects at existing noise-sensitive receptors, and noise during construction. Results were summarized in a noise study report pursuant to Caltrans TeNS guidance.

Northern Canoga Extension of the Orange Line EIR, Metro, Reseda, California. Project entailed noise measurements and subsequent noise analysis of Metro bus operations on rubberized asphalt concrete (RAC) and non-RAC busway pavement to determine the benefit provided by RAC. Because differences in the noise levels were not expected to be substantial and because of site conditions, the design of the measurement setups was crucial. Site selection and details of the measurement procedures, including

coordination of a dedicated test bus and driver, was an important part of the study. Simultaneous measurements at multiple locations were conducted from approximately 1 a.m. to 4 a.m. to reduce the influence of background noise. Noise measurement methodology, analysis results, and conclusions were summarized in a technical memorandum to the client.

Busway and Bus Rapid Transit Projects, Massachusetts Bay Transportation Authority, Boston. Conducted and participated in noise analyses for Busway and Bus-Rapid Transit (BRT) projects using Federal Transit Administration (FTA) methodologies and standards. The project involved the construction of a proposed BRT project in downtown Boston. Analyzed potential noise and vibration impacts at adjacent sensitive receptors from construction and operation using FTA methodologies. In addition, worked on similar projects in Portland, Oregon, and near Dallas, Texas.

Water/Wastewater

New Evans Reservoir IS/MND, City of Riverside Public Utilities Department, California. Responsible for the measurement, analysis, and reporting of noise for this IS/MND. The primary issue for this project with respect to noise was construction (trenching) along the pipeline alignment adjacent to noise-sensitive land receptors.

Recycled Water System Capital Improvement Project EIR, Otay Water District, Otay Mesa, California. Responsible for the noise analysis for this ongoing project involving the construction of three recycled water pipelines by the Otay Water District. The potential effect of noise from construction activities was the primary issue with regard to noise for this project. Noise levels at adjacent noise-sensitive uses were predicted and compared with relevant thresholds of significance, and mitigation measures were recommended as necessary to reduce noise to a level below significance.

Publications

Burge, P., Martin, C., Greene, M. 2016. Greene, M. 2011. "Review and Comparison of State-Wide Policies Across the U.S." New England Noise-Con 2016. Institute of Noise Control Engineering.

Greene, M. 2015. "Infrasound and Low-Frequency Noise Measurements at a Solar Plant." Inter-Noise 2015. Institute of Noise Control Engineering

Greene, M., Hardie, P. 2015. "Rail Crossing Quiet Zones: Life-Cycle of a Project from the Noise Perspective." Inter-Noise 2015. Institute of Noise Control Engineering

Greene, M. 2011. "Noise Assessment of an Aquatics Facility in a Residential Area." Joint Institute of Noise Control Engineering/Transportation Research Board ADC 40 Annual Summer Conference.

Greene, M. 2011. "Shake, Rattle & Roll Revisited: Results of Two Vibration Measurement Studies Near Large, Heavily-Traveled Freeways." Joint Institute of Noise Control Engineering/Transportation Research Board ADC 40 Annual Summer Conference.

Greene, M. 2009. "Shake, Rattle and Roll: Results of a Vibration Study Near a Large, Heavily-Traveled Freeway." Transportation Research Board ADC 40 Annual Summer Conference.

Greene, M. 2008. "Case Study and Lessons Learned: Preliminary Determination of Quiet Zone Benefitted Area." Transportation Research Board ADC 40 Annual Summer Conference.

Greene, M. 2008. "Does Installation of a Traffic Signal Cause Increased Traffic Noise? Pre- and Post-Installation Noise Measurement Results." Transportation Research Board ADC 40 Annual Summer Conference.

Greene, M. 2004. "Multiple Analysis and Measurement Methods to Confirm the Absence of Noise Impacts from a Power Plant." Transportation Research Board and the National Conference on Noise Control Engineering (NOISE-CON 2004).

Greene, M. 2002. "Typical Diurnal Traffic Noise Patterns for a Variety of Roadway Types." Proceedings of the 2002 International Congress and Exposition on Noise Control Engineering (Inter-Noise 2002).

Greene, M. 2002. "Comparison of Pile-Driver Noise from Various Pile-Driving Methods and Pile Types." Proceedings of the 2002 International Congress and Exposition on Noise Control Engineering (Inter-Noise 2002).

Greene, M. 2000. "Determination of Insertion Loss for Classrooms at a High School." Proceedings of the 140th Meeting of the Acoustical Society of America and the National Conference on Noise Control Engineering (NOISE-CON 2000).

Greene, M. 1997. "Case Study: Noise Analysis of Operations from an Existing Mine at a Nearby Proposed Residential/Recreational Development." Proceedings of the 1997 National Conference on Noise Control Engineering (NOISE-CON 1997).

Greene, M. 1991. "P.C. Based Program for Air Quality Calculations." Proceedings of the Institute of Environmental Sciences Technical Meeting.

Appendix F
Traffic

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

KUNZMAN ASSOCIATES, INC.

BLOOMINGTON INDUSTRIAL FACILITY

TRAFFIC IMPACT ANALYSIS

August 31, 2016

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

KUNZMAN ASSOCIATES, INC.

BLOOMINGTON INDUSTRIAL FACILITY

TRAFFIC IMPACT ANALYSIS

August 31, 2016

Prepared by:

Robert Kunzman
Carl Ballard, LEED GA
William Kunzman, P.E.

William Kunzman

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. KUNZMAN
No. TR0056
TRAFFIC
STATE OF CALIFORNIA

1111 Town & Country Road, Suite 34
Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

5737a

TABLE OF CONTENTS

I. INTRODUCTION 1
- A. Project Description 1
- B. Study Area 1
- C. Analysis Methodology 2
- D. Definition of Deficiency and Significant Impact 3
  - 1. Definition of Deficiency 3
  - 2. Definition of Significant Impact 4

II. EXISTING CONDITIONS 7
- A. Existing Roadway System 7
- B. Existing Volumes 7
- C. Existing Level of Service 7
- D. Planned Transportation Improvements and Relationship to General Plan 8

III. PROJECT TRIPS 16
- A. Project Description 16
- B. Trip Generation 16
- C. Trip Distribution 16
- D. Trip Assignment 16
- E. Trip Contribution Test 17

IV. FUTURE CONDITIONS 30
- A. Future Volumes 30
  - 1. Existing Plus Project 30
  - 2. Opening Year (2018) With Ambient 30
  - 3. Opening Year (2018) With Ambient and Project 30
  - 4. Opening Year (2018) With Ambient and Cumulative and Project 30
- B. Existing Plus Project 31
- C. Future Levels of Service 31
  - 1. Opening Year (2018) With Ambient 31
  - 2. Opening Year (2018) With Ambient and Project 32
  - 3. Opening Year (2018) With Ambient and Cumulative and Project 32
- D. Traffic Signal Warrant Analysis 33

V. PROJECT MITIGATION 61
- A. Required Improvements and Costs 61
- B. Project Contribution and Fair Share Costs 61

VI. CONCLUSIONS AND RECOMMENDATIONS 64
- A. Summary 64
- B. Existing Conditions 64
- C. Project Trips 65
- D. Future Conditions 65
  - 1. Existing Plus Project 65
  - 2. Opening Year (2018) With Ambient 66
  - 3. Opening Year (2018) With Ambient and Project 66
  - 4. Opening Year (2018) With Ambient and Cumulative and Project 66

E. Cost Summary 67
F. Recommendations 68
1. On-Site Improvements 68
2. Off-Site Improvements 68

APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – Traffic Count Worksheets

Appendix C – Passenger Car Equivalent Calculation Worksheets

Appendix D – Explanation and Calculation of Intersection Delay

Appendix E – Traffic Signal Warrant Worksheet

Appendix F – Preliminary Construction Cost Estimates for Congestion Management Program

LIST OF TABLES

Table 1. Existing Intersection Delay and Level of Service 9

Table 2. Project Trip Generation 18

Table 3. Existing Residential Trip Generation 19

Table 4. Cumulative Development Trip Generation 34

Table 5. Existing Plus Project Intersection Delay and Level of Service 35

Table 6. Opening Year (2018) With Ambient Intersection Delay and Level of Service 36

Table 7. Opening Year (2018) With Ambient and Project Intersection Delay and Level of Service 37

Table 8. Opening Year (2018) With Ambient and Cumulative and Project Intersection Delay and Level of Service 38

Table 9. Summary of Intersection Improvements and Costs 62

Table 10. Project Fair Share Intersection Traffic Contribution 63

Table 11. Intersection Delay and Level of Service Summary 70

LIST OF FIGURES

Figure 1. Project Location Map 5
Figure 2. Site Plan 6
Figure 3. Existing Through Travel Lanes and Intersection Controls 10
Figure 4. Existing Average Daily Traffic Volumes 11
Figure 5. Existing Morning Peak Hour Intersection Turning Movement Volumes 12
Figure 6. Existing Evening Peak Hour Intersection Turning Movement Volumes 13
Figure 7. County of San Bernardino General Plan Circulation Element 14
Figure 8. County of San Bernardino General Plan Roadway Cross-Sections 15
Figure 9. Project Outbound Trip Distribution - Cars 20
Figure 10. Project Inbound Trip Distribution - Cars 21
Figure 11. Project Outbound Trip Distribution - Trucks 22
Figure 12. Project Inbound Trip Distribution - Trucks 23
Figure 13. Existing Residential Outbound Trip Distribution 24
Figure 14. Existing Residential Inbound Trip Distribution 25
Figure 15. Project Average Daily Traffic Volumes 26
Figure 16. Project Morning Peak Hour Intersection Turning Movement Volumes 27
Figure 17. Project Evening Peak Hour Intersection Turning Movement Volumes 28
Figure 18. Project Trip Contribution Test Volumes 29
Figure 19. Cumulative Development Traffic Analysis Zone Map 39
Figure 20. Cumulative Development Traffic Analysis Zone 1 Trip Distribution 40
Figure 21. Cumulative Development Traffic Analysis Zone 2 Trip Distribution 41
Figure 22. Cumulative Development Traffic Analysis Zone 3 Trip Distribution 42
Figure 23. Cumulative Development Traffic Analysis Zone 4 Trip Distribution 43
Figure 24. Cumulative Development Traffic Analysis Zone 5 Trip Distribution - Cars 44
Figure 25. Cumulative Development Traffic Analysis Zone 5 Trip Distribution - Trucks 45
Figure 26. Cumulative Development Average Daily Traffic Volumes 46
Figure 27. Cumulative Development Morning Peak Hour Intersection Turning Movement Volumes 47
Figure 28. Cumulative Development Evening Peak Hour Intersection Turning Movement Volumes 48
Figure 29. Existing Plus Project Average Daily Traffic Volumes 49
Figure 30. Opening Year (2018) With Ambient Average Daily Traffic Volumes 50

Figure 31. Opening Year (2018) With Ambient and Project Average Daily Traffic Volumes 51
Figure 32. Opening Year (2018) With Ambient and Cumulative and Project Average Daily Traffic Volumes 52
Figure 33. Existing Plus Project Morning Peak Hour Intersection Turning Movement Volumes ... 53
Figure 34. Existing Plus Project Evening Peak Hour Intersection Turning Movement Volumes 54
Figure 35. Opening Year (2018) With Ambient Morning Peak Hour Intersection Turning Movement Volumes 55
Figure 36. Opening Year (2018) With Ambient Evening Peak Hour Intersection Turning Movement Volumes 56
Figure 37. Opening Year (2018) With Ambient and Project Morning Peak Hour Intersection Turning Movement Volumes 57
Figure 38. Opening Year (2018) With Ambient and Project Evening Peak Hour Intersection Turning Movement Volumes 58
Figure 39. Opening Year (2018) With Ambient and Cumulative and Project Morning Peak Hour Intersection Turning Movement Volumes 59
Figure 40. Opening Year (2018) With Ambient and Cumulative and Project Evening Peak Hour Intersection Turning Movement Volumes 60
Figure 41. Circulation Recommendations 71

I. INTRODUCTION

The purpose of this report is to provide an assessment of the traffic impacts resulting from the proposed development of the Bloomington Industrial project, and to identify the traffic mitigation measures necessary to maintain the established Level of Service standard for the elements of the impacted roadway system. The traffic issues related to the proposed land uses and development have been evaluated in the context of the California Environmental Quality Act.

The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with the California Environmental Quality Act authorizing legislation. This report analyzes traffic impacts for the anticipated opening date with full occupancy of the development in Year 2018, at which time it will be generating trips at its full potential.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

A. Project Description

The proposed development is located north of Jurupa Avenue between Linden Avenue and Cedar Avenue in the County of San Bernardino. A vicinity map showing the project location is provided on Figure 1.

The project site is proposed to be developed with 676,983 square feet of high-cube warehouse distribution center. Access will be provided to Cedar Avenue and Jurupa Avenue. Figure 2 illustrates the project site plan.

B. Study Area

Regional access to the project site is provided by the I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways expected to provide local access include Slover Avenue, Santa Ana Avenue, and Jurupa Avenue. The north-south roadways expected to provide local access include Linden Avenue, Oak Street, and Cedar Avenue.

A series of scoping discussions were conducted with the County of San Bernardino to define the desired analysis locations for each future analysis year. In addition, staff from the County of San Bernardino has also been contacted to discuss the project and its associated travel patterns.

No analysis is required further than 5 miles from the project site. The roadway elements that must be analyzed are dependent on the analysis year and project generated traffic volumes. The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments have been included in the analysis when the anticipated project volume equals or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways.

The project does not contribute trips greater than the freeway threshold volume of 100 two-way peak hour trips.

C. Analysis Methodology

The analysis of the traffic impacts from the proposed development and the assessment of the required mitigation measures were based on an evaluation of the existing and forecast traffic conditions in the vicinity of the site with and without the project. The following analysis years are considered in this report:

- Existing Conditions (2016)
- Existing Plus Project Conditions[1]
- Opening Year Conditions (2018)

Existing intersection traffic conditions were established through morning and evening peak hour traffic counts obtained by Kunzman Associates, Inc. in April 2016 (see Appendix B). In addition, truck classification counts were conducted at the study area intersections. The existing percent of trucks were used in the conversion of trucks to Passenger Car Equivalent's.

Project traffic volumes for all future projections were estimated using the manual approach. Trip generation has been estimated based on the Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012 and the City of Fontana, Truck Trip Generation Study, August 2003.

Based on discussions with the County of San Bernardino Transportation Department, cumulative projects have been obtained from the County of San Bernardino Planning Department and the City of Rialto Planning Department. An annual growth rate of one (1) percent has been added to existing traffic volumes and then the projected trip generation and distribution for the cumulative projects have been added.

The technique used to assess the capacity needs of an intersection is known as the Intersection Delay Method (see Appendix C) based on the Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection. It should be noted that the signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined Level of Service standard. The volume to capacity ratio is defined as the critical volumes divided by the intersection capacity. A volume to capacity ratio greater than 1.0 implies that the traffic volume demand is greater than the capacity of the intersection and as a result traffic may begin to queue during the analyzed peak hour.

[1] The existing plus project conditions has been analyzed to comply with the Sunnyvale West Neighborhood Association v. City of Sunnyvale CEQA court case. This scenario assumes the full development of the proposed project and full absorption of the proposed project trips on the circulation system at the present time.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis. The following formula has been used to calculate the pedestrian minimum times for all Highway Capacity Manual runs:

[(Curb to curb distance) / (3.5 feet/second)] + 7 seconds.

For existing/existing plus project/Opening Year (2018) traffic conditions, saturation flow rates of 1,800 vehicles per hour of green for through and right turn lanes and 1,700 vehicles per lane for single left turn lanes, 1,600 vehicles per lane for dual left turn lanes and 1,500 vehicles per lane for triple left turn lanes have been assumed for the capacity analysis.

The peak hour traffic volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed.

D. Definition of Deficiency and Significant Impact

The following definitions of deficiencies and significant impacts have been developed in accordance with the County of San Bernardino requirements.

1. Definition of Deficiency

The definition of an intersection deficiency has been obtained from the County of San Bernardino General Plan. The General Plan states that peak hour intersection operations of Level of Service D or better are generally acceptable. Therefore, any intersection operating at Level of Service E or F will be considered deficient.

For freeway facilities, the Congestion Management Program controls the definition of deficiency for purposes of this study. The Congestion Management Program definition of deficiency is based on maintaining a Level of Service standard of Level of Service E or better, except where an existing Level of Service F condition is identified in the Congestion Management Program document (San Bernardino County Congestion Management Program Table 2-1). A Congestion Management Program deficiency is, therefore, defined as any freeway segment operating or projected to operate at Level of Service F, unless the segment is identified explicitly in the Congestion Management Program document.

The identification of a Congestion Management Program deficiency requires further analysis in satisfaction of Congestion Management Program requirements, including:

- Evaluation of the mitigation measures required to restore traffic operations to an acceptable level with respect to Congestion Management Program Level of Service standards.

- Calculation of the project share of new traffic on the impacted Congestion Management Program facility during peak hours of traffic.

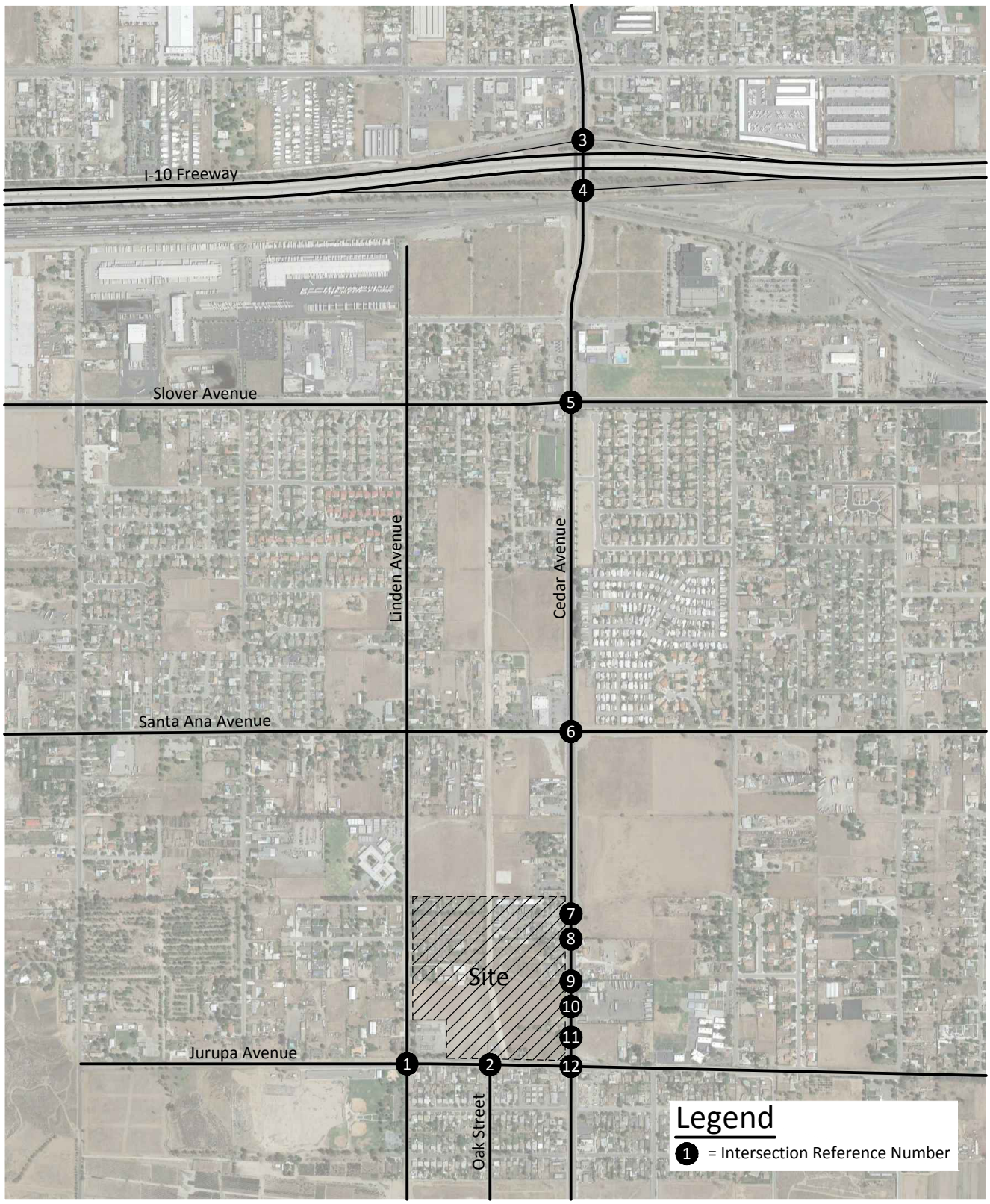
- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable Level of Service as described above.

This study incorporates each of these aspects for all locations where a Congestion Management Program deficiency is identified.

2. Definition of Significant Impact

According to the County of San Bernardino's traffic impact analysis standards, a project's impacts are considered significant for purposes of the California Environmental Quality Act ("CEQA") where the project contributes 50 or more peak hour trips to an intersection that exceeds the allowable level of service. As explained in Section I.D.1 above, for purposes of this report, the allowable levels of service are those above level of service D.

Figure 1
Project Location Map

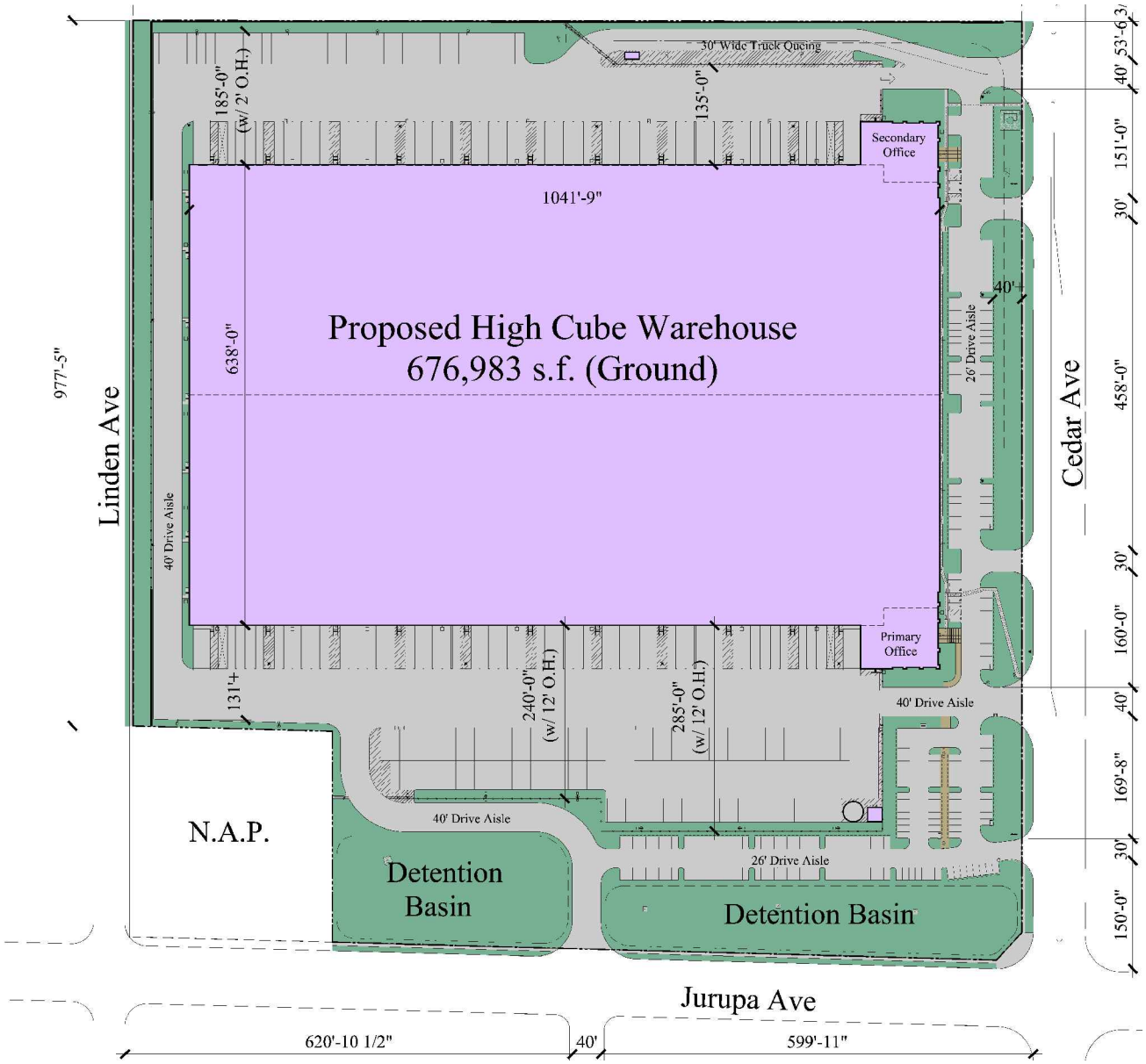


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 2
Site Plan



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

II. EXISTING CONDITIONS

A. Existing Roadway System

Figure 3 identifies the existing conditions for study area roadways. The number of through lanes for existing roadways and the existing intersection controls are identified.

Regional access to the project site is provided by the I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways expected to provide local access include Slover Avenue, Santa Ana Avenue, and Jurupa Avenue. The north-south roadways expected to provide local access include Linden Avenue, Oak Street, and Cedar Avenue.

B. Existing Volumes

Figure 4 depicts the existing average daily traffic volumes. The existing average daily traffic volumes were obtained from the 2014 Traffic Volumes on California State Highways by the California Department of Transportation and factored from peak hour counts (see Appendix B) by Kunzman Associates, Inc. using the following formula for each intersection leg:

PM Peak Hour (Approach + Exit Volume) x 11.5 = Daily Leg Volume.

This is a conservative estimate and may over estimate the average daily traffic volumes.

Existing intersection traffic conditions were established through morning and evening peak hour traffic counts obtained by Kunzman Associates, Inc. from April 2016 (see Appendix B) and shown on Figures 5 and 6, respectively. Explicit peak hour factors have been calculated using the data collected for this effort as well. The morning and evening peak hour traffic volumes were identified by counting the two-hour periods from 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM.

In addition, truck classification counts were conducted at the study area intersections. The existing percent of trucks were used in the conversion of trucks to Passenger Car Equivalent's (see Appendix B and C).

C. Existing Level of Service

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 1. For Existing traffic conditions, the study area intersections currently operate within acceptable Levels of Service during the peak hours, except for the following study area intersection that is currently operating at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
- I-10 Freeway WB Ramps (EW) - #3

Existing delay worksheets are provided in Appendix D.

It is important to note that Intersection #3 operates at an unacceptable level of service without the proposed project. The proposed project is not the direct cause of this deficiency. As will be explained later in this report, the proposed project does not cause a significant impact to Intersection #3 because it does not exceed the County's threshold of significance (i.e., adding 50 or more peak hour trips to an intersection that already exceeds allowable level of service).

D. Planned Transportation Improvements and Relationship to General Plan

The County of San Bernardino General Plan Circulation Element is shown on Figure 7. Existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 7. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The County of San Bernardino General Plan roadway cross-sections are shown on Figure 8.

Table 1

Existing Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Linden Avenue (NS) at:																
Jurupa Avenue (EW) - #1	County of San Bernardino	AWS	0	1	0	0.5	0.5	d	0.5	0.5	1	0.5	0.5	1	12.6-B	9.6-A
Project Access/Oak Street (NS) at:																
Jurupa Avenue (EW) - #2	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.0-B	10.7-B
Cedar Avenue (NS) at:																
I-10 Freeway WB Ramps (EW) - #3	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.33	0.33	1.33	99.9-F[4]	19.6-B
I-10 Freeway EB Ramps (EW) - #4	California Department of Transportation	TS	0	3	1	1	2	0	1.33	0.33	0.33	0	0	0	32.2-C	21.8-C
Slover Avenue (EW) - #5	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1	1>	32.5-C	29.1-C
Santa Ana Avenue (EW) - #6	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0	1	0	0.5	0.5	d	22.9-C	22.0-C
Jurupa Avenue (EW) - #12	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0.5	0.5	d	0.5	0.5	d	20.8-C	21.6-C

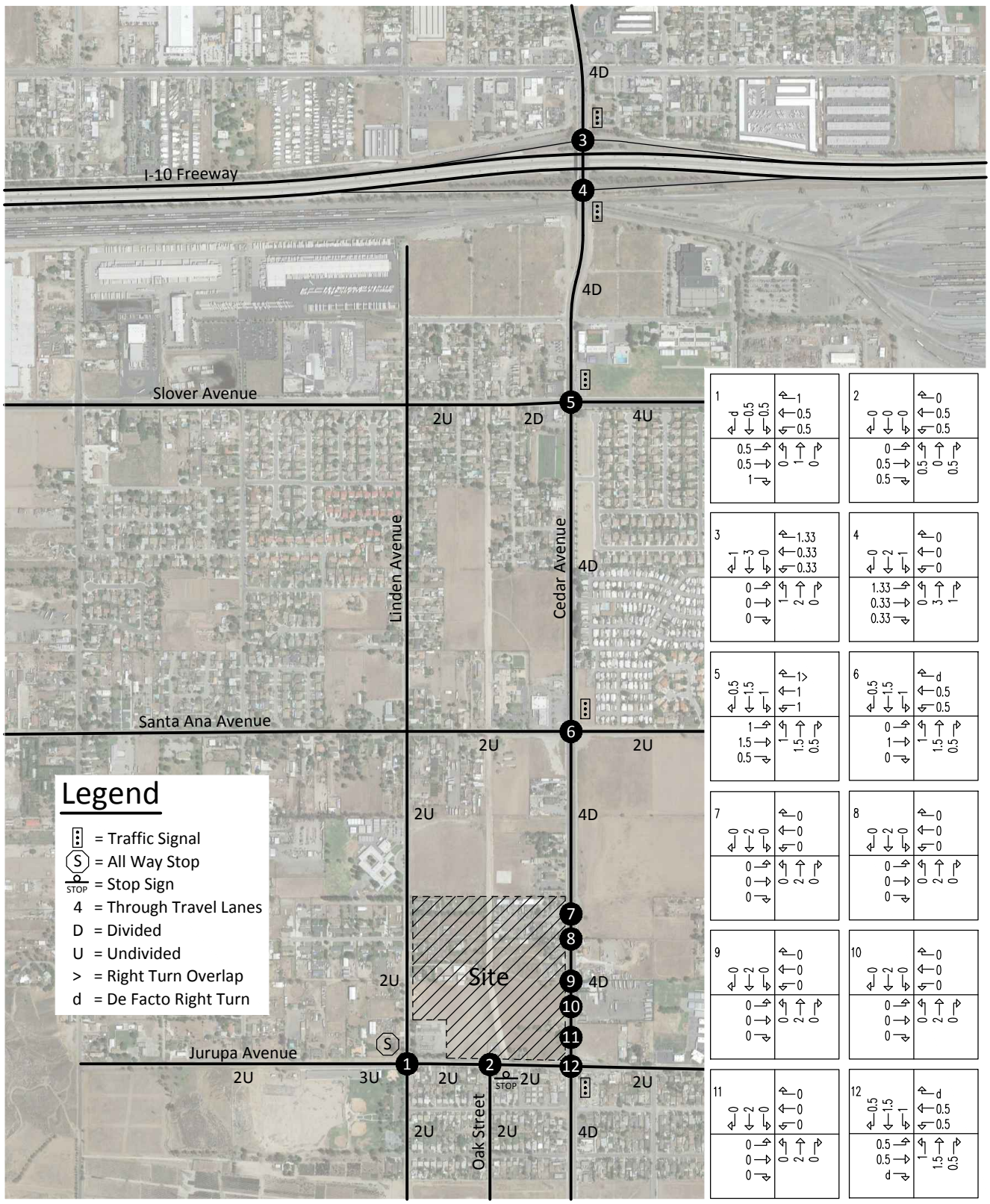
[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; > = Right Turn Overlap

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

[4] 99.9-F - Delay High, Intersection Unstable, Level of Service F

Figure 3
Existing Through Travel Lanes and Intersection Controls

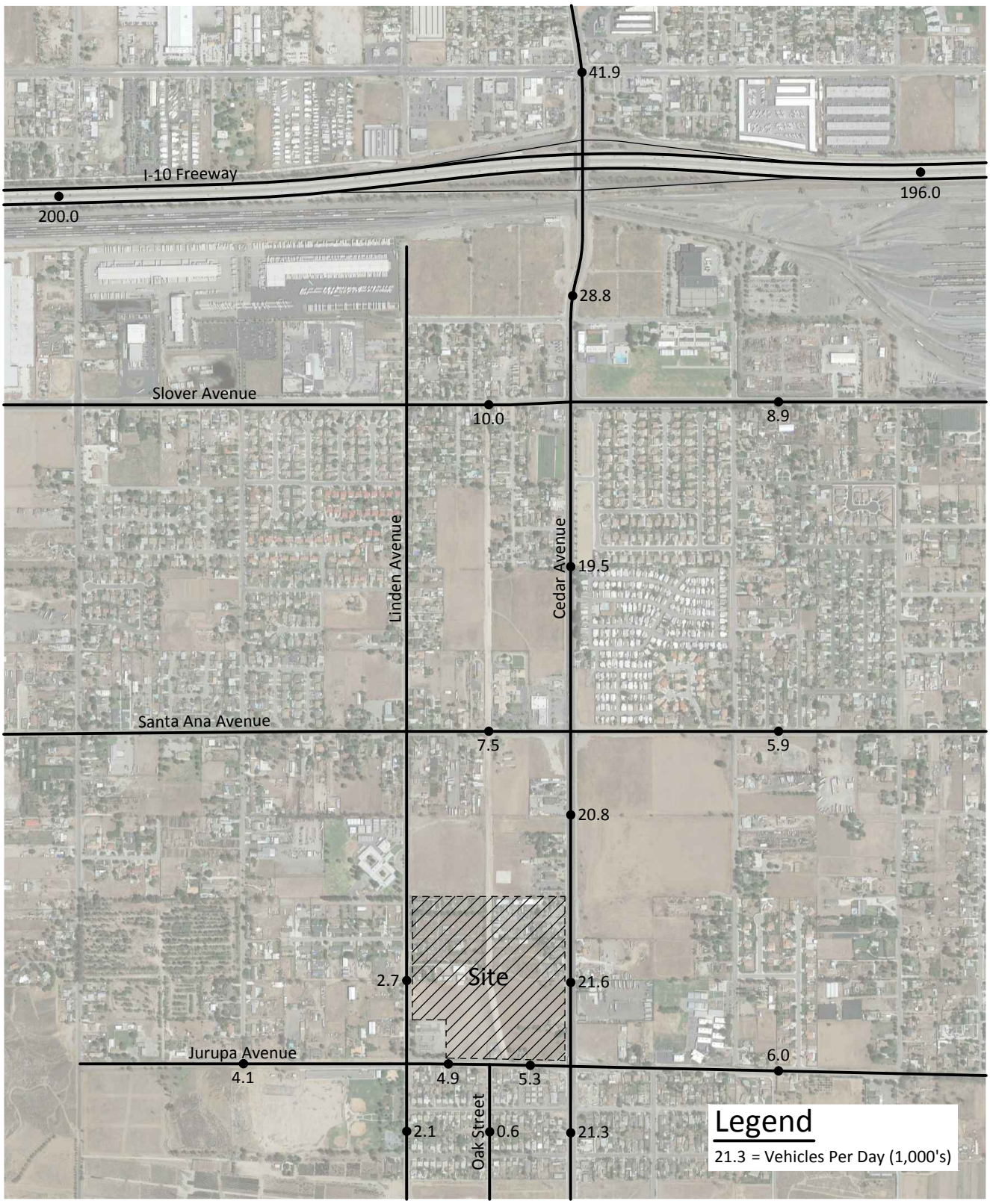


5737/3

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 35 YEARS OF EXCELLENT SERVICE

Figure 4
Existing Average Daily Traffic Volumes

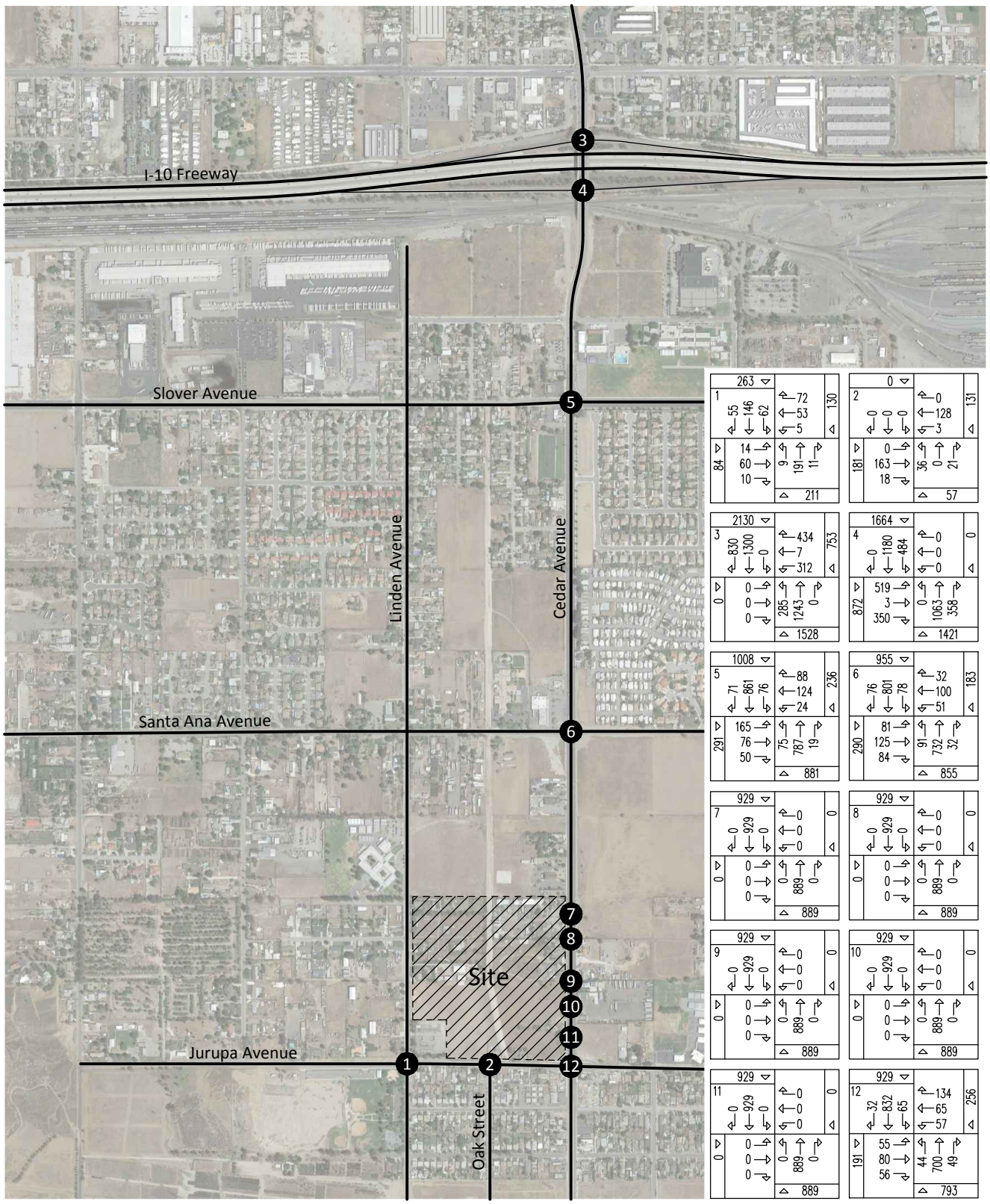


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 5
Existing Morning Peak Hour Intersection Turning Movement Volumes

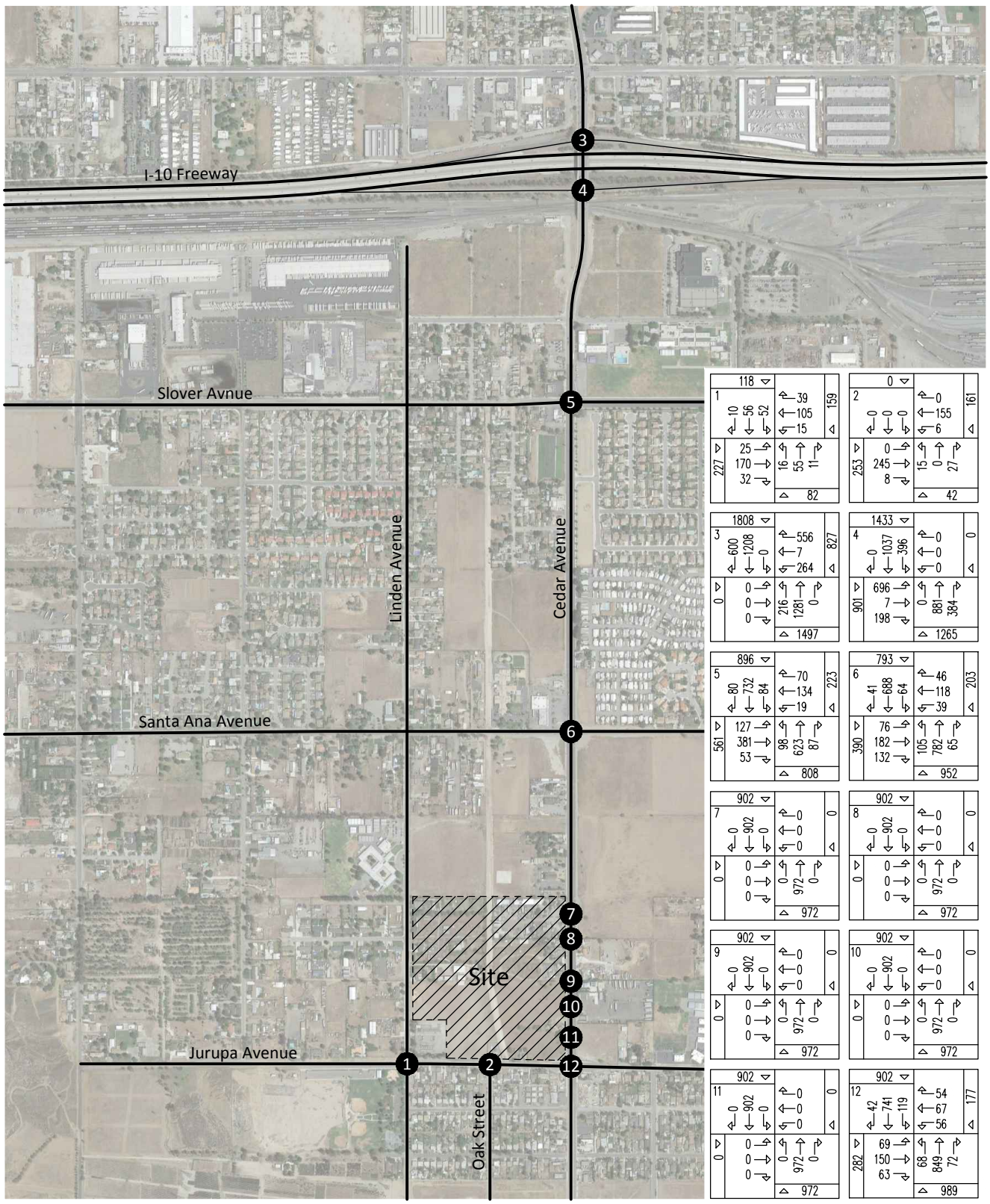


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 6
Existing Evening Peak Hour Intersection Turning Movement Volumes

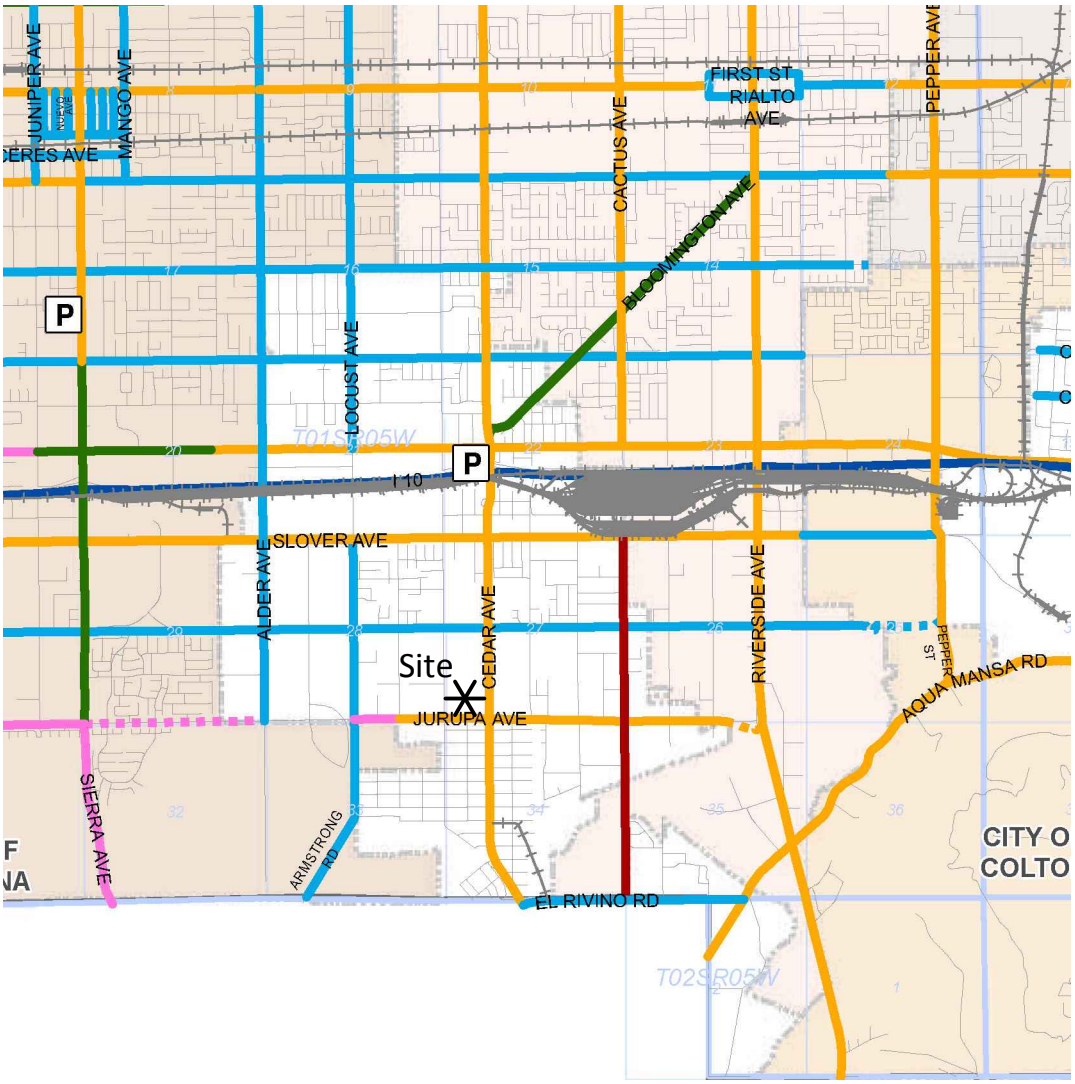


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 7
County of San Bernardino General Plan Circulation Element



Legend

Existing	Proposed	
		Freeway
		Major Divided Highway
		Major Arterial Highway
		Major Highway
		Secondary Highway
		Controlled/Limited Access Collector
		Mountain Major Highway
		Mountain Secondary Highway
		State Highway (Special Standards or Conditions)

P Park & Ride Railroad Airport / Airfield

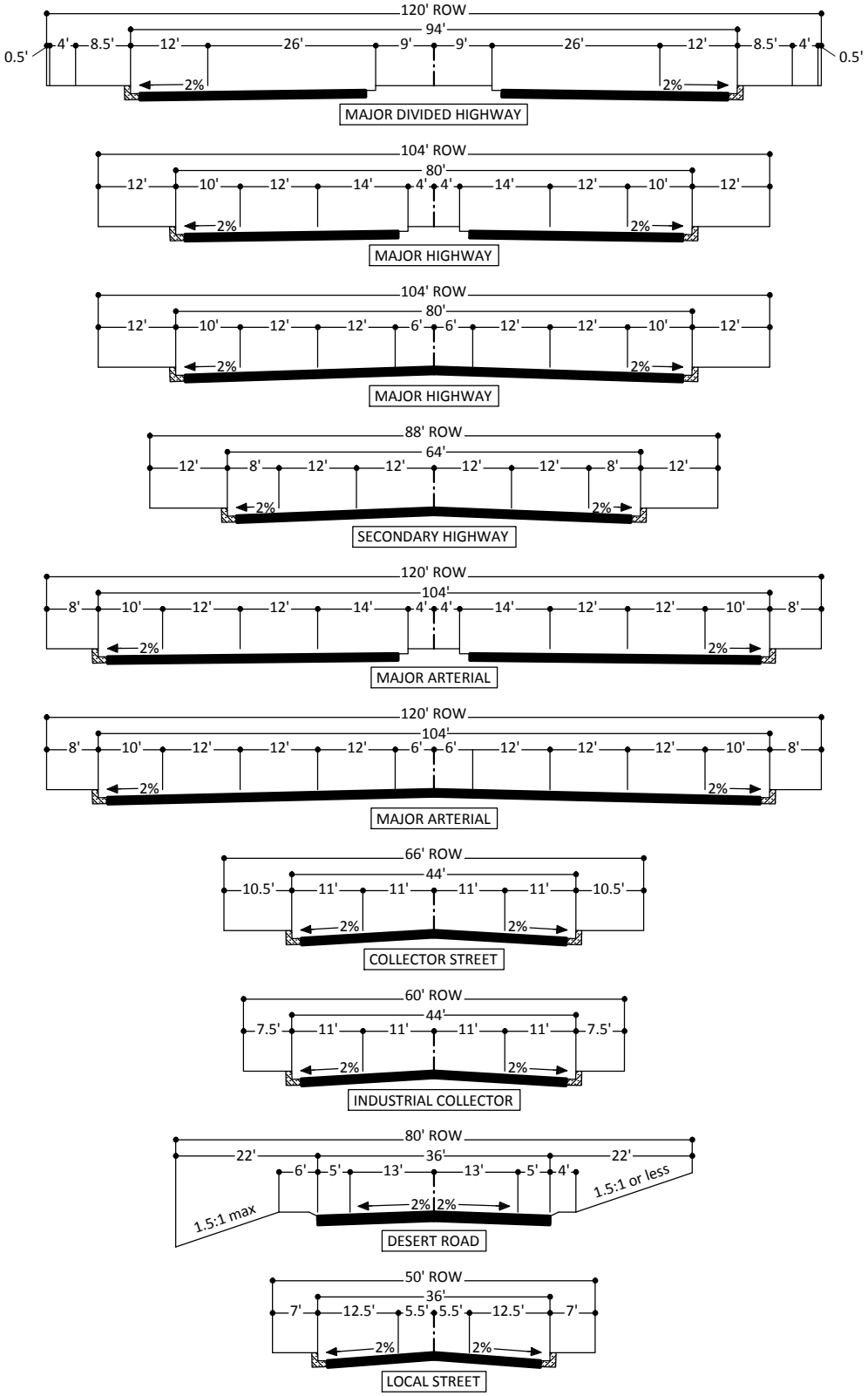
Source: County of San Bernardino

KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 8
County of San Bernardino General Plan Roadway Cross-Sections



Source: County of San Bernardino

III. PROJECT TRIPS

A. Project Description

The project site is proposed to be developed with 676,983 square feet of high-cube warehouse distribution center. Access will be provided to Cedar Avenue and Jurupa Avenue.

B. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily trips, morning peak hour inbound and outbound trips, and evening peak hour inbound and outbound trips for the proposed land use. By multiplying the trip generation rates by the land use quantity, the traffic volumes are determined. Tables 2 and 3 show the project trip generation based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012 and truck type split percentages have been obtained from the City of Fontana, Truck Trip Generation Study, August 2003. The Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012 is the most current and trusted trip generation rate source in the United States. The City of Fontana, Truck Trip Generation Study, August 2003 is the most adopted truck type split percentage source in Southern California.

As shown in Table 2, the proposed development is projected to generate approximately 1,490 daily vehicle trips in passenger car equivalents, 102 of which will occur during the morning peak hour and 108 of which will occur during the evening peak hour.

As shown in Table 3, the existing residential development currently generates a total of approximately 114 daily vehicle trips, 9 of which will occur during the morning peak hour and 12 of which will occur during the evening peak hour.

C. Trip Distribution

Figures 9 to 12 contain the directional distributions of the project trips for the proposed land use. Figures 13 and 14 contain the existing residential trip distributions.

D. Trip Assignment

Based on the identified trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 15. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 16 and 17, respectively.

E. Trip Contribution Test

No analysis is required further than 5 miles from the project site. The roadway elements that must be analyzed are dependent on the analysis year. The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments have been included in the analysis when the anticipated project volume equals or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways. Figure 18 graphically depicts the project trip contribution test volumes on all of the roadway segments adjacent to the potential intersection analysis locations until the project volume contribution has clearly dropped below the 50 trip threshold and 100 trip threshold.

The project does not contribute trips greater than the freeway threshold volume of 100 two-way peak hour trips.

Table 2

Project Trip Generation[1]

Descriptor		Quantity	Units[2]	Type of Vehicle: Passenger Car	2 Axle Truck	3 Axle Truck	4+ Axle Truck	Total Trucks	Total
Land Use: High Cube		676.983	TSF	79.6%	3.5%	4.6%	12.3%	20.4%	100%
Traffic Generation Rates in trips per TSF									
Daily				1.337	0.058	0.078	0.207	0.343	1.68
Morning Peak Hour				0.088	0.004	0.005	0.014	0.023	0.11
Evening Peak Hour				0.096	0.004	0.006	0.015	0.025	0.12
Traffic Generation in Vehicles									
Daily				905	39	53	140	232	1,137
Morning Peak Hour									
	Inbound			43	2	3	7	12	55
	Outbound			16	1	1	3	5	21
	Total			59	3	4	10	17	76
Evening Peak Hour									
	Inbound			22	1	1	3	5	27
	Outbound			43	2	3	7	12	55
	Total			65	3	4	10	17	82
Passenger Car Equivalent's (PCE'S) Factor[3]				1.00	1.50	2.00	3.00		
Traffic Generation in PCE's									
Daily				905	59	106	420	585	1,490
Morning Peak Hour									
	Inbound			43	3	6	21	30	73
	Outbound			16	2	2	9	13	29
	Total			59	5	8	30	43	102
Evening Peak Hour									
	Inbound			22	2	2	9	13	35
	Outbound			43	3	6	21	30	73
	Total			65	5	8	30	43	108

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012, Land Use Category 152 and City of Fontana, Truck Trip Generation Study, August 2003.

[2] TSF = Thousand Square Feet

[3] Passenger Car Equivalent factors are recommended by San Bernardino Associated Governments.

Table 3

Existing Trip Generation[1]

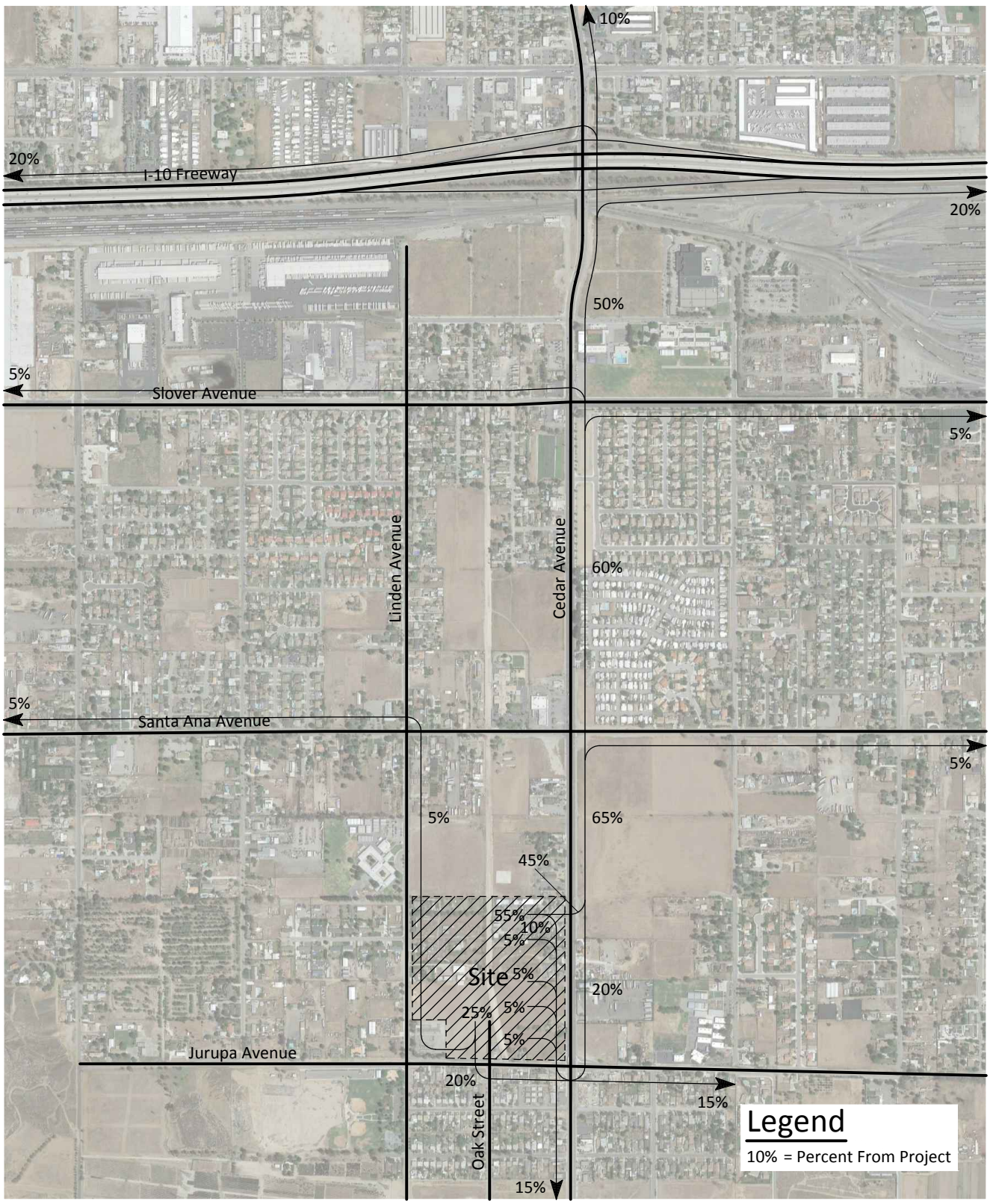
Land Use[2]	Quantity	Units[3]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Single-Family Detached Residential		DU	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Trips Generated									
Single-Family Detached Residential	-12	DU	-2	-7	-9	-8	-4	-12	-114

[1] Source: Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012, Land Use Category 210.

[2] It should be noted that there are other land uses present but based on discussions with the County of San Bernardino, only the approved residential land uses are being accounted for.

[2] DU = Dwelling Unit

Figure 9
Project Outbound Trip Distribution - Cars

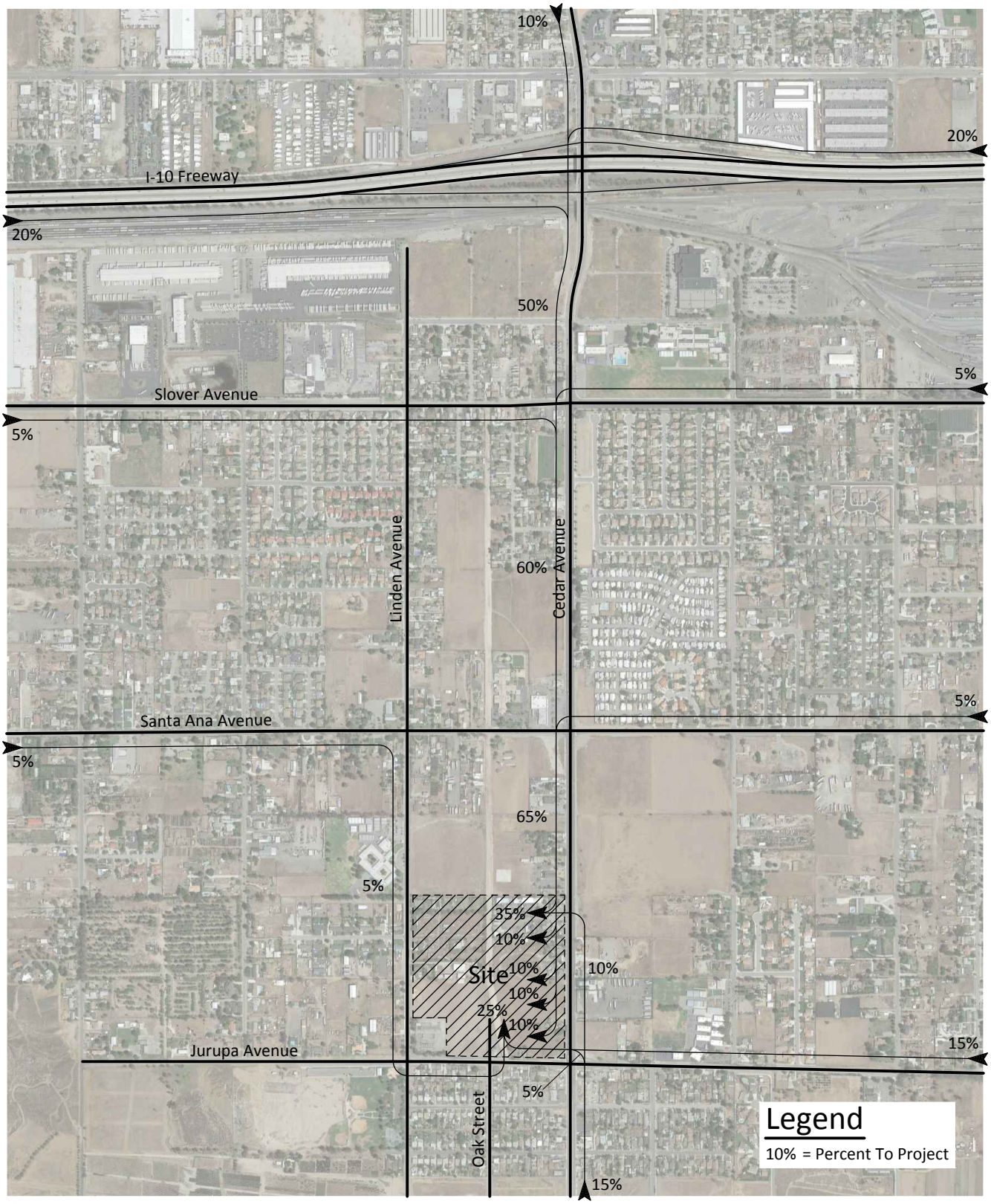


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 10
Project Inbound Trip Distribution - Cars

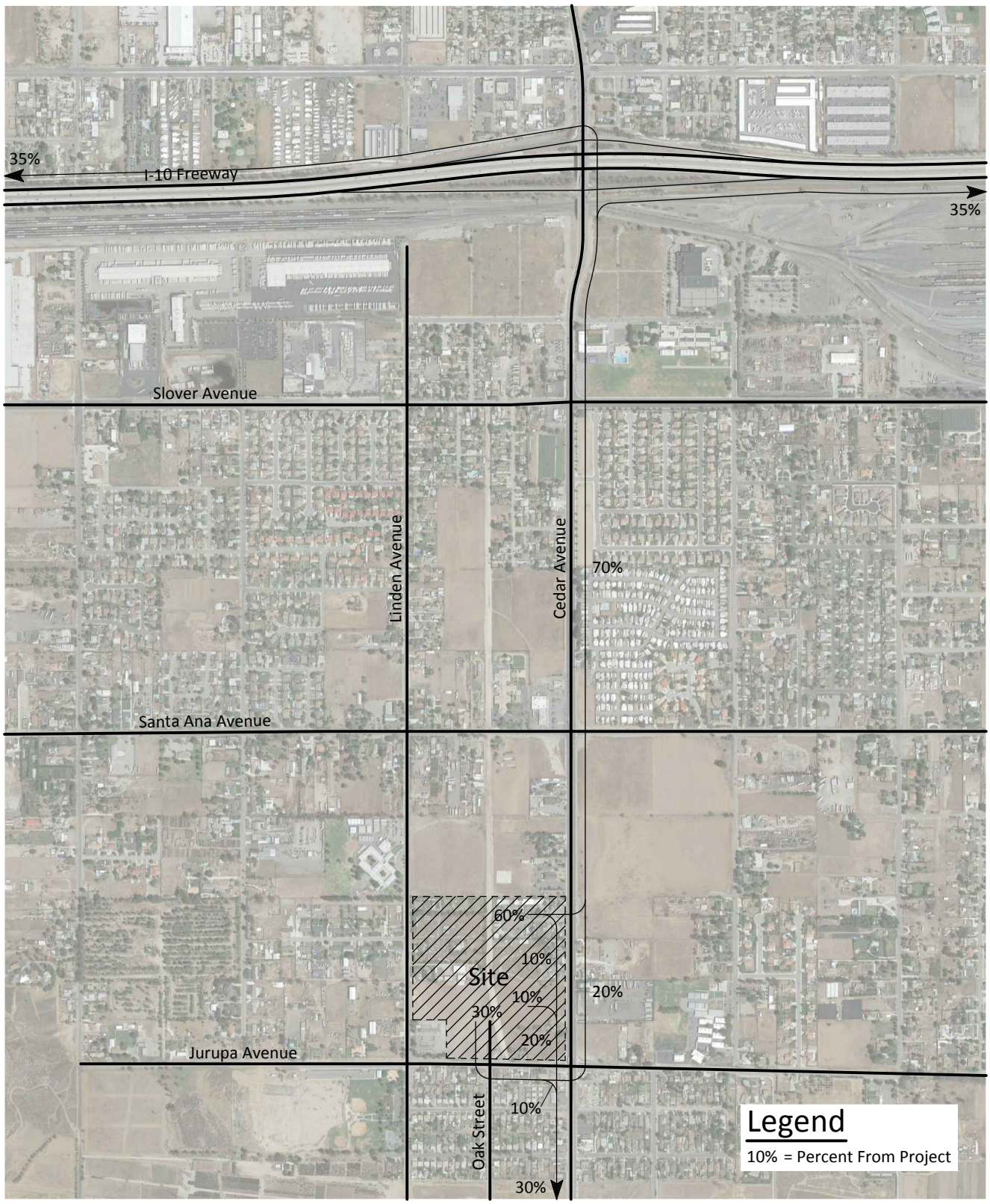


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 11
Project Outbound Trip Distribution - Trucks

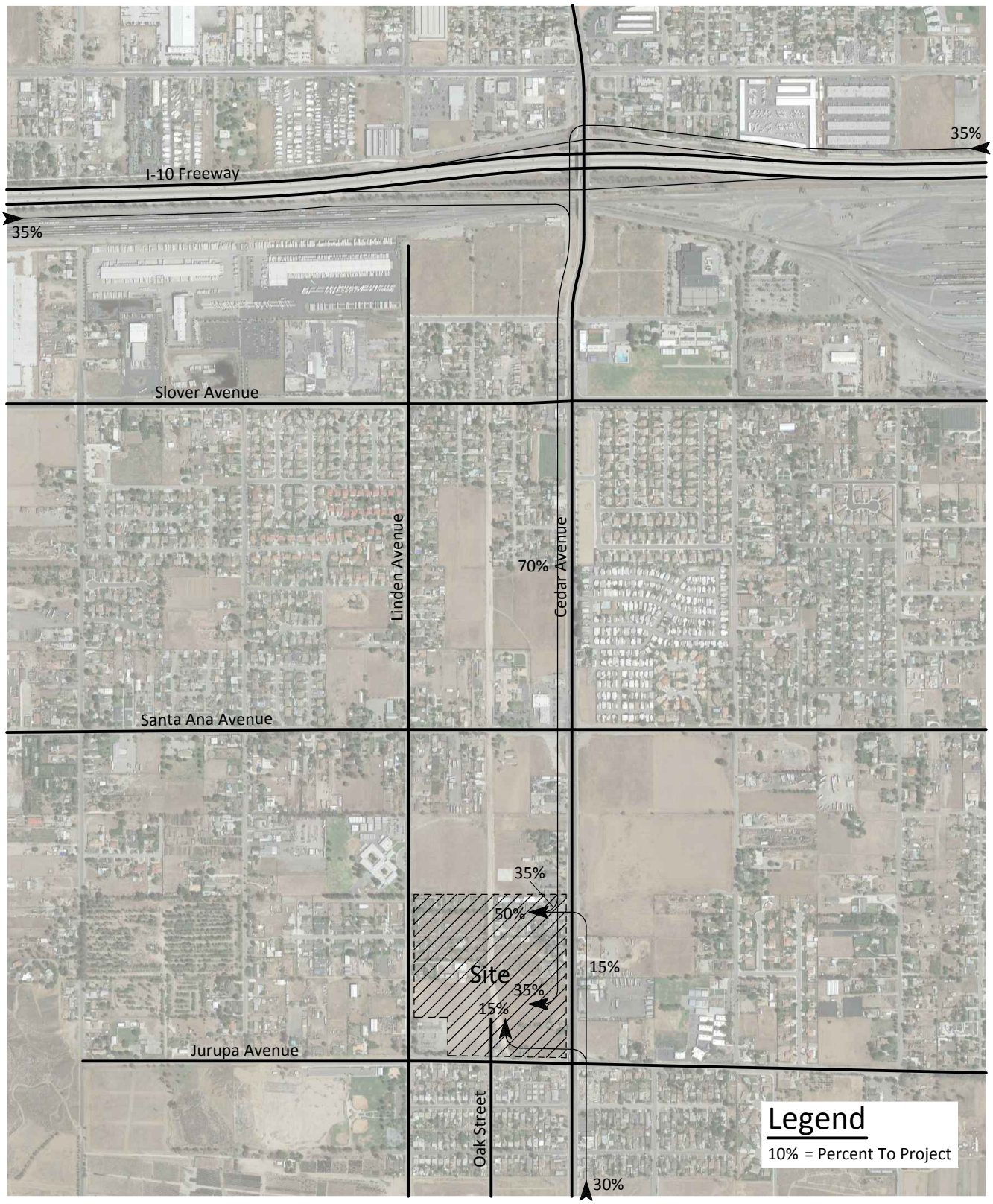


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 12
Project Inbound Trip Distribution - Trucks

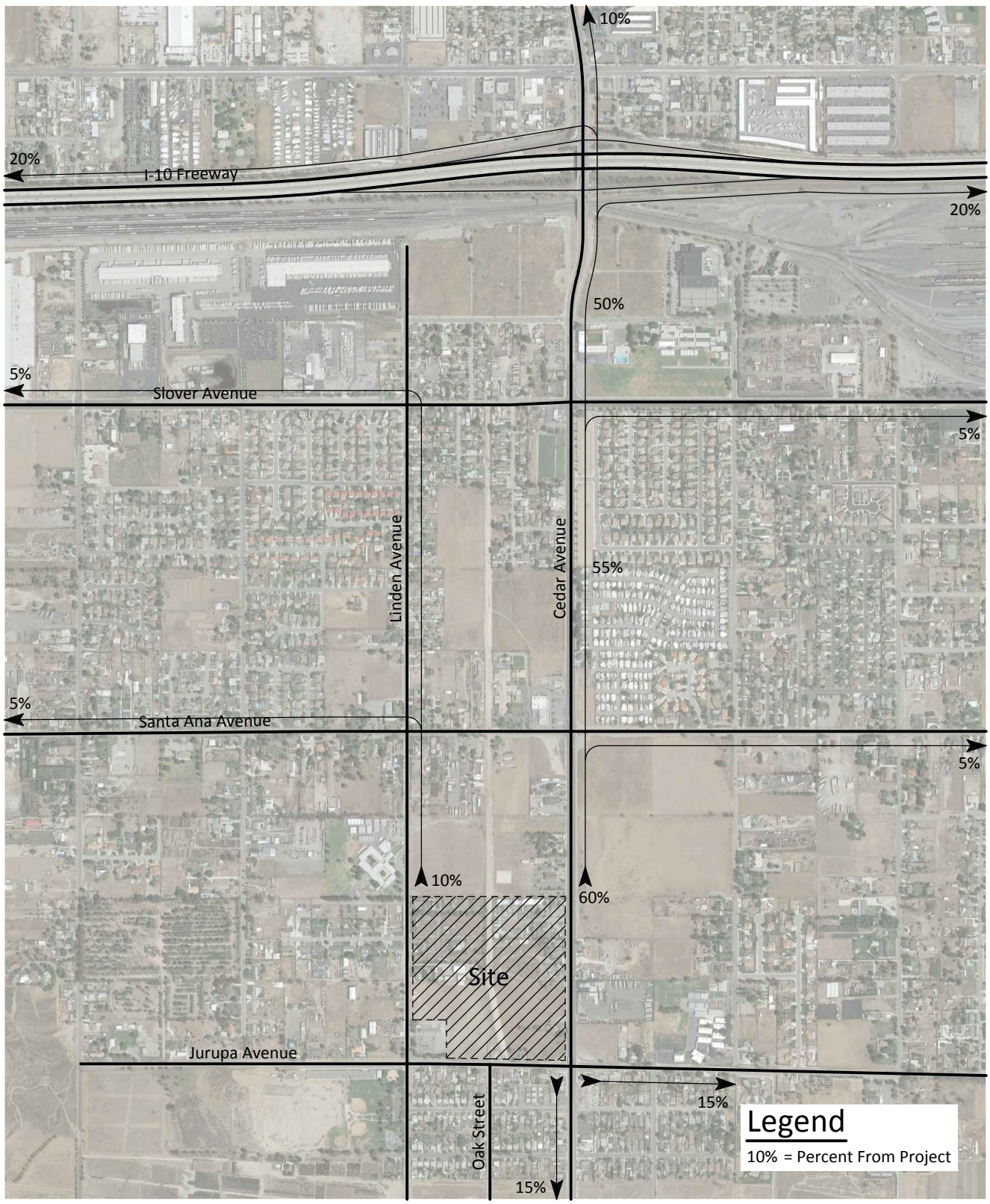


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 13
Existing Residential Outbound Trip Distribution

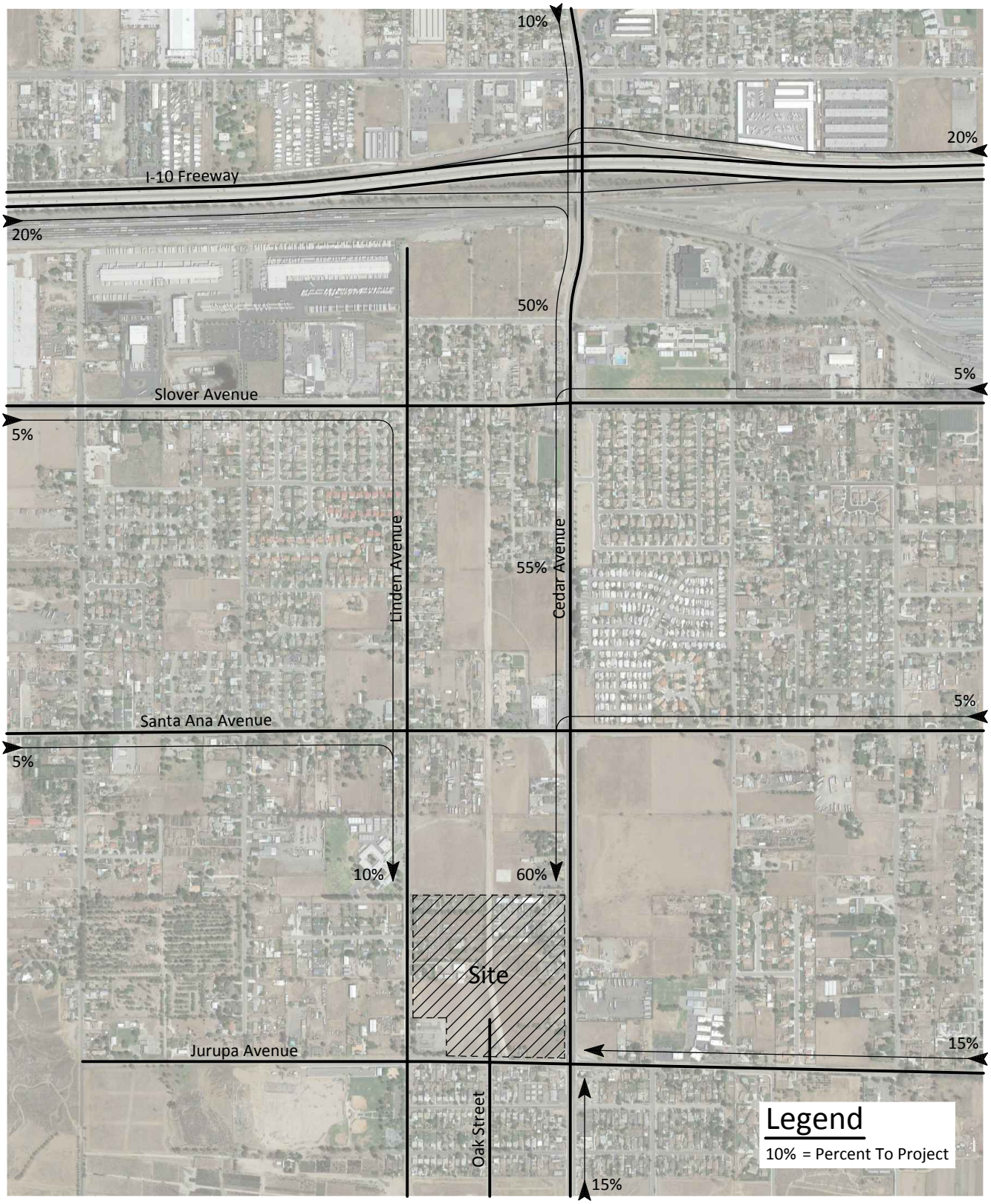


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 14
Existing Residential Inbound Trip Distribution

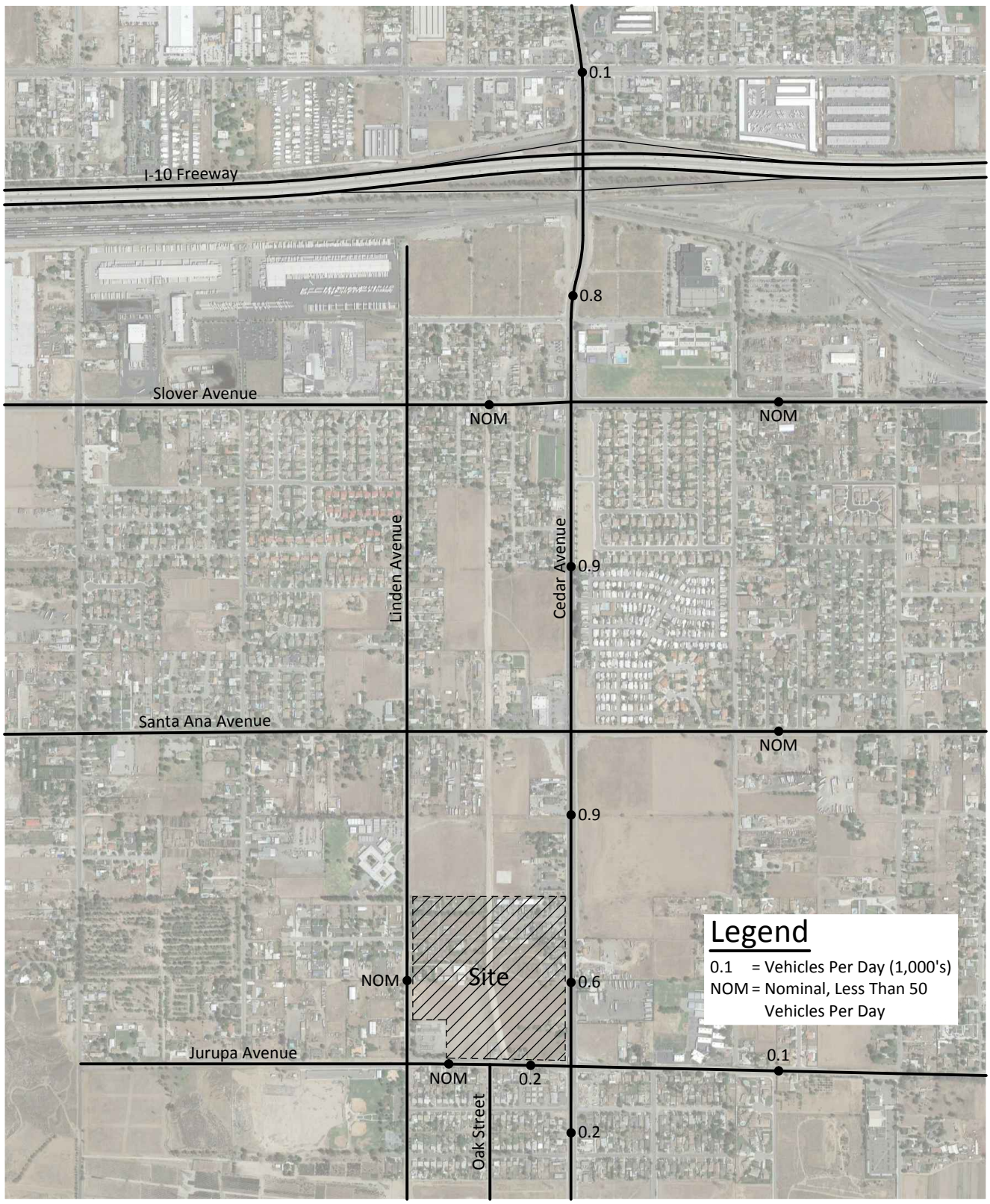


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 15
Project Average Daily Traffic Volumes

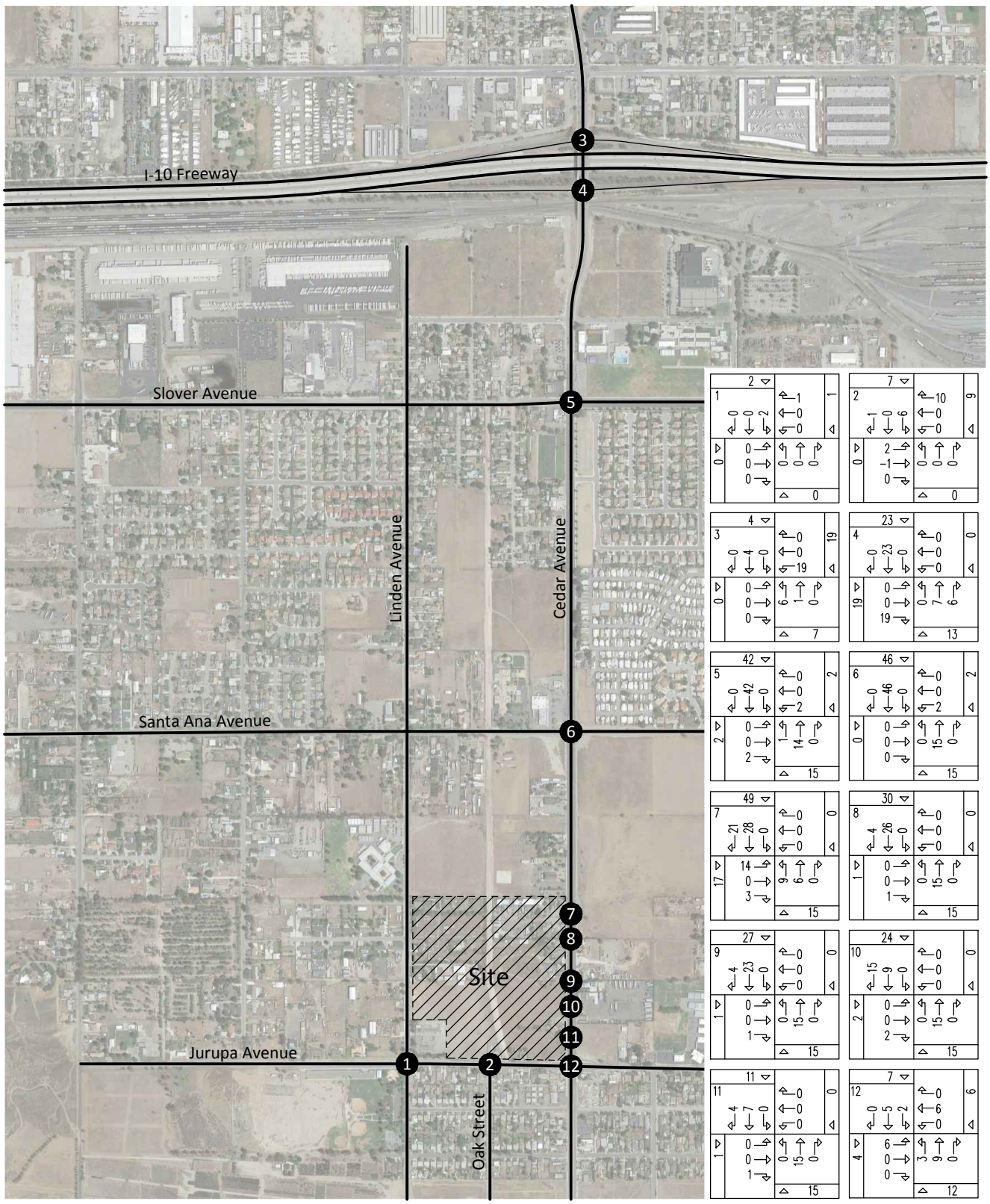


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 16
Project Morning Peak Hour Intersection Turning Movement Volumes

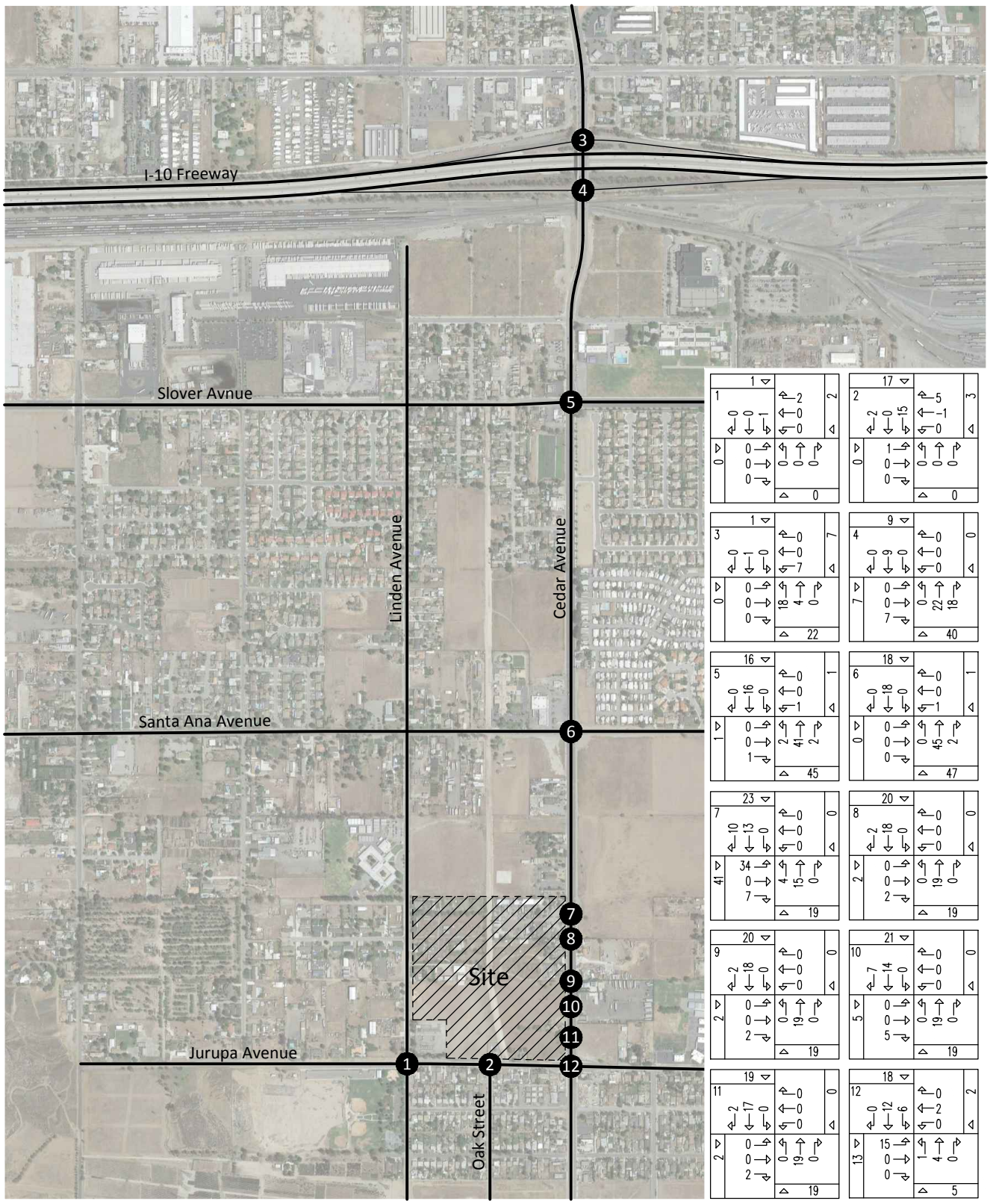


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 17
Project Evening Peak Hour Intersection Turning Movement Volumes

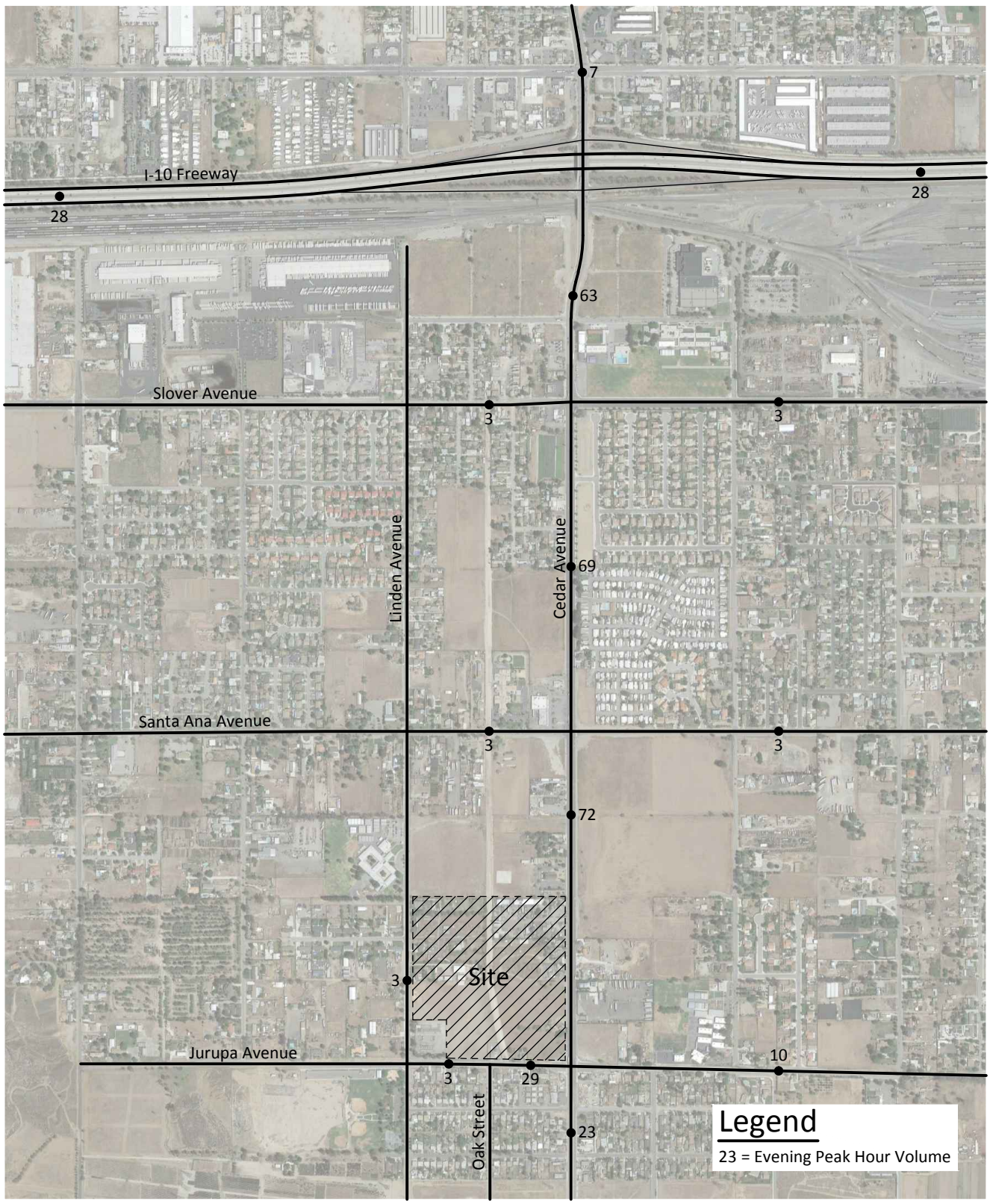


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 18
Project Trip Contribution Test Volumes



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

IV. FUTURE CONDITIONS

A. Future Volumes

Based on discussions with the County of San Bernardino Transportation Department, cumulative projects have been obtained from the County of San Bernardino Planning Department and the City of Rialto Planning Department. The City of Fontana was also contacted but was unable to provide any cumulative project information within our study area. An annual growth rate of one (1) percent has been added to existing traffic volumes and then the projected trip generation and distribution for the cumulative projects has been added.

Cumulative development has been added to Opening Year (2018) traffic conditions. Table 4 shows the cumulative development daily and peak hour trip generation. Figure 19 provides the traffic analysis zone location map. Figures 20 to 25 show the cumulative development trip distributions. Figure 26 shows the cumulative development average daily traffic volumes. Cumulative development morning and evening peak hour intersection turning movement volumes are shown on Figures 27 and 28, respectively.

1. Existing Plus Project

   The average daily traffic volumes for Existing Plus Project traffic conditions have been determined. Existing Plus Project average daily traffic volumes are shown on Figure 29.

2. Opening Year (2018) With Ambient

   The average daily traffic volumes for Opening Year (2018) With Ambient traffic conditions have been determined. Opening Year (2018) With Ambient average daily traffic volumes are shown on Figure 30.

3. Opening Year (2018) With Ambient and Project

   The average daily traffic volumes for Opening Year (2018) With Ambient and Project traffic conditions have been determined. Opening Year (2018) With Ambient and Project average daily traffic volumes are shown on Figure 31.

4. Opening Year (2018) With Ambient and Cumulative and Project

   The average daily traffic volumes for Opening Year (2018) With Ambient and Cumulative and Project traffic conditions have been determined. Opening Year (2018) With Ambient and Cumulative and Project average daily traffic volumes are shown on Figure 32.

B. Existing Plus Project

The Existing Plus Project delay and Level of Service for the study are roadway network are shown in Table 5. Table 5 shows delay values based on the geometrics at the study area intersections without and with improvements. Existing Plus Project delay calculation worksheets are provided in Appendix D. Existing Plus Project morning and evening peak hour intersection turning movement volumes are shown on Figures 33 and 34, respectively.

For Existing Plus Project traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue(NS) at:
I-10 Freeway WB Ramps (EW) - #3

As indicated in Section IV.B of this report above, Intersection #3 operates at a deficient level of service without the project. Applying the County's CEQA significance threshold, a significant impact would result at this intersection if the proposed project would add 50 or more peak hour trips to the intersection. According to Figures 16 and 17, the proposed project is projected to add approximately 30 vehicle trips during the morning peak hour and 30 vehicle trips during the evening peak hour to Intersection #3. Thus, the proposed project would not have a significant impact at Intersection #3.

All other study area intersections are projected to operate within acceptable levels of service for the Existing Plus Project scenario.

C. Future Levels of Service

1. Opening Year (2018) With Ambient

The Opening Year (2018) With Ambient delay and Level of Service for the study area roadway network are shown in Table 6. Table 6 shows delay values based on the geometrics at the study area intersections without and with improvements. Opening Year (2018) With Ambient delay calculation worksheets are provided in Appendix D. Opening Year (2018) With Ambient morning and evening peak hour intersection turning movement volumes are shown on Figures 35 and 36, respectively.

For Opening Year (2018) With Ambient traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3

For Opening Year (2018) With Ambient traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

It is important to note that the proposed project is not the cause of the study area intersection that is projected to continue to operate at an unacceptable Level of Service. The project doesn't cause any study area intersections to be directly significantly impacted.

2. Opening Year (2018) With Ambient and Project

The Opening Year (2018) With Ambient and Project delay and Level of Service for the study area roadway network are shown in Table 7. Table 7 shows delay values based on the geometrics at the study area intersections without and with improvements. Opening Year (2018) With Ambient and Project delay calculation worksheets are provided in Appendix D. Opening Year (2018) With Ambient and Project morning and evening peak hour intersection turning movement volumes are shown on Figures 37 and 38, respectively.

For Opening Year (2018) With Ambient and Project traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
- I-10 Freeway WB Ramps (EW) - #3
- I-10 Freeway EB Ramps (EW) - #4

For Opening Year (2018) With Ambient and Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

It is important to note that the proposed project is not the cause of the study area intersections that are projected to operate and/or continue to operate at unacceptable Levels of Service. The project doesn't cause any study area intersections to be directly significantly impacted.

In the County of San Bernardino an intersection operating at Level of Service E or F needs to be mitigated to Level of Service D or better. The study area intersections have been mitigated to an acceptable Level of Service. The project is responsible for paying its fair share for the improvements. All required improvements are included in the NEXUS fee program. The project is not required to pay above and beyond their development fees for these scheduled and funded improvements. From a CEQA perspective the project doesn't directly impact any study area intersections, the project does contribute towards mitigation measures to make the significantly impacted intersections less than significant.

3. Opening Year (2018) With Ambient and Cumulative and Project

The Opening Year (2018) With Ambient and Cumulative and Project delay and Level of Service for the study area roadway network are shown in Table 8. Table 8 shows delay values based on the geometrics at the study area intersections without and with improvements. Opening Year (2018) With Ambient and Cumulative and Project delay

calculation worksheets are provided in Appendix D. Opening Year (2018) With Ambient and Cumulative and Project morning and evening peak hour intersection turning movement volumes are shown on Figures 39 and 40, respectively.

For Opening Year (2018) With Ambient and Cumulative and Project traffic conditions, the following study area intersections are projected to operate at unacceptable Levels of Service during the peak hours:

Cedar Avenue (NS) at:
- I-10 Freeway WB Ramps (EW) - #3
- I-10 Freeway EB Ramps (EW) - #4

For Opening Year (2018) With Ambient and Cumulative and Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

It is important to note that the proposed project is not the cause of the study area intersections that are projected to operate and/or continue to operate at unacceptable Levels of Service. The project doesn't cause any study area intersections to be directly significantly impacted.

In the County of San Bernardino an intersection operating at Level of Service E or F needs to be mitigated to Level of Service D or better. The study area intersections have been mitigated to an acceptable Level of Service. The project is responsible for paying its fair share for the improvements. All required improvements are included in the NEXUS fee program. The project is not required to pay above and beyond their development fees for these scheduled and funded improvements. From a CEQA perspective the project doesn't directly impact any study area intersections, the project does contribute towards mitigation measures to make the significantly impacted intersections less than significant.

D. Traffic Signal Warrant Analysis

A traffic signal is not projected to be warranted at the following study area intersection for Opening Year (2018) With Ambient and Cumulative and Project traffic conditions (see Appendix E):

Cedar Avenue (NS) at:
- Project Access #1 (EW) - #7

The unsignalized intersection has been evaluated for a traffic signal using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual of Uniform Traffic Control Devices.

Based on discussions with the applicant and the County of San Bernardino Transportation Department, a traffic signal is required at this intersection to allow the median break which allows slow moving trucks to exit the site desiring to travel north along Cedar Avenue towards the I-10 Freeway.

Table 4

Cumulative Development Trip Generation[1]

Traffic Analysis Zone	Cumulative	Land Use	Type	Peak Hour						Daily
				Morning			Evening			
				Inbound	Outbound	Total	Inbound	Outbound	Total	
1	252041580000	Church - Recreation Room	Cars	18	9	27	18	19	37	456
		Church - Worship Area	Cars	60	7	67	60	7	67	671
	252051060000	Single-Family Residential	Cars	36	107	143	120	70	190	1,809
		Community Center	Cars	17	9	26	17	18	35	433
		Subtotal	PCE	131	132	263	215	114	329	3,369
2	25215116000	Warehouse	Cars	41	16	57	21	41	62	869
			Trucks	25	10	35	13	25	38	564
	252151670000	Warehouse	Cars	39	15	54	19	39	58	816
			Trucks	25	10	35	13	25	38	527
	252173280000	Warehouse	Cars	4	1	5	1	4	5	57
			Trucks	0	0	0	0	0	0	32
	252173670000	Warehouse	Cars	45	17	62	23	45	68	947
			Trucks	30	13	43	13	30	43	613
	25604101000	Warehouse	Cars	22	8	30	11	22	33	460
			Trucks	13	3	16	8	13	21	297
		Subtotal	PCE	244	93	337	122	244	366	5,182
3	P201200375	Shopping Center	Cars	27	30	57	10	13	23	369
	P201400139	Gas Station	Cars	61	61	122	81	81	162	1,954
		Subtotal	PCE	88	91	179	91	94	185	2,323
4	259154130000	Auto Repair	Cars	0	0	0	11	9	20	200
	260121070000	Green Waste Facility	Cars	26	6	32	7	24	31	218
		Subtotal	PCE	26	6	32	18	33	51	418
5	Oakmont El Rivino II	Warehouse	Cars	158	159	317	79	158	237	3,310
			Trucks	101	38	139	51	101	152	2,141
		Subtotal	PCE	259	197	456	130	259	389	5,451
Total				748	519	1,267	576	744	1,320	16,743

[1] Source: County of San Bernardino and City of Rialto Planning Departments.

Table 5

Existing Plus Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Linden Avenue (NS) at:																
Jurupa Avenue (EW) - #1	County of San Bernardino	AWS	0	1	0	0.5	0.5	d	0.5	0.5	1	0.5	0.5	1	12.7-B	9.6-A
Project Access/Oak Street (NS) at:																
Jurupa Avenue (EW) - #2																
- Without Improvements	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.6-B	12.4-B
- With Improvements	County of San Bernardino	CSS	0	1	0	0	**1**	0	0	1	0	0	1	0	11.6-B	12.4-B
Cedar Avenue (NS) at:																
I-10 Freeway WB Ramps (EW) - #3																
- Without Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.33	0.33	1.33	99.9-F[4]	20.4-C
- With Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.5	0.5	**2**	22.7-C	14.1-B
I-10 Freeway EB Ramps (EW) - #4	California Department of Transportation	TS	0	3	1	1	2	0	1.33	0.33	0.33	0	0	0	33.7-C	22.3-C
Slover Avenue (EW) - #5	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	1	0.5	0.5	1	1	1>	32.8-C	29.6-C
Santa Ana Avenue (EW) - #6	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0	1	0	0.5	0.5	d	23.1-C	22.3-C
Project Access #1 (EW) - #7	County of San Bernardino	**TS**	**1**	2	0	0	1.5	0.5	**1**	0	**1**	0	0	0	17.6-C	18.0-C
Project Access #2 (EW) - #8	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.0-B	11.8-B
Project Access #3 (EW) - #9	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	11.9-B	11.8-B
Project Access #4 (EW) - #10	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	11.9-B	11.8-B
Project Access #5 (EW) - #11	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	11.9-B	11.8-B
Jurupa Avenue (EW) - #12	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0.5	0.5	d	0.5	0.5	d	20.9-C	21.9-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; > = Right Turn Overlap; 1 = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

[4] 99.9-F - Delay High, Intersection Unstable, Level of Service F

Table 6

Opening Year (2018) With Ambient Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Linden Avenue (NS) at:																
Jurupa Avenue (EW) - #1	County of San Bernardino	AWS	0	1	0	0.5	0.5	d	0.5	0.5	1	0.5	0.5	1	12.9-B	9.7-A
Project Access/Oak Street (NS) at:																
Jurupa Avenue (EW) - #2	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.1-B	10.8-B
Cedar Avenue (NS) at:																
I-10 Freeway WB Ramps (EW) - #3																
- Without Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.33	0.33	1.33	99.9-F[4]	20.4-C
- With Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.5	0.5	**2**	22.6-C	13.9-B
I-10 Freeway EB Ramps (EW) - #4	California Department of Transportation	TS	0	3	1	1	2	0	1.33	0.33	0.33	0	0	0	34.0-C	22.6-C
Slover Avenue (EW) - #5	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1	1>	32.9-C	29.6-C
Santa Ana Avenue (EW) - #6	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0	1	0	0.5	0.5	d	23.0-C	22.2-C
Jurupa Avenue (EW) - #12	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0.5	0.5	d	0.5	0.5	d	20.9-C	21.8-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; > = Right Turn Overlap; 1 = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

[4] 99.9-F - Delay High, Intersection Unstable, Level of Service F

Table 7

Opening Year (2018) With Ambient and Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Linden Avenue (NS) at:																
Jurupa Avenue (EW) - #1	County of San Bernardino	AWS	0	1	0	0.5	0.5	d	0.5	0.5	1	0.5	0.5	1	13.0-B	9.7-A
Project Access/Oak Street (NS) at:																
Jurupa Avenue (EW) - #2																
- Without Improvements	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.7-B	12.5-B
- With Improvements	County of San Bernardino	CSS	0	1	0	0	**1**	0	0	1	0	0	1	0	11.7-B	12.5-B
Cedar Avenue (NS) at:																
I-10 Freeway WB Ramps (EW) - #3																
- Without Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.33	0.33	1.33	99.9-F[4]	21.4-C
- With Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.5	0.5	**2**	24.4-C	14.3-B
I-10 Freeway EB Ramps (EW) - #4																
- Without Improvements	California Department of Transportation	TS	0	3	1	1	2	0	1.33	0.33	0.33	0	0	0	99.9-F	23.1-C
- With Improvements	California Department of Transportation	TS	0	3	1	1	2	0	**2**	0.5	0.5	0	0	0	21.2-C	17.8-B
Slover Avenue (EW) - #5	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1	1>	33.2-C	30.1-C
Santa Ana Avenue (EW) - #6	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0	1	0	0.5	0.5	d	23.2-C	22.5-C
Project Access #1 (EW) - #7	County of San Bernardino	**TS**	**1**	2	0	0	1.5	0.5	**1**	0	**1**	0	0	0	17.9-C	18.4-C
Project Access #2 (EW) - #8	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.1-B	11.9-B
Project Access #3 (EW) - #9	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.1-B	11.9-B
Project Access #4 (EW) - #10	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.0-B	11.9-B
Project Access #5 (EW) - #11	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.0-B	11.9-B
Jurupa Avenue (EW) - #12	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0.5	0.5	d	0.5	0.5	d	21.0-C	22.0-C

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; > = Right Turn Overlap; 1 = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

[4] 99.9-F - Delay High, Intersection Unstable, Level of Service F

Table 8

Opening Year (2018) With Ambient and Cumulative and Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Linden Avenue (NS) at:																
Jurupa Avenue (EW) - #1	County of San Bernardino	AWS	0	1	0	0.5	0.5	d	0.5	0.5	1	0.5	0.5	1	13.0-B	9.7-A
Project Access/Oak Street (NS) at:																
Jurupa Avenue (EW) - #2																
- Without Improvements	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.7-B	12.5-B
- With Improvements	County of San Bernardino	CSS	0.5	0	0.5	0	0	0	0	0.5	0.5	0.5	0.5	0	11.7-B	12.5-B
Cedar Avenue (NS) at:																
I-10 Freeway WB Ramps (EW) - #3																
- Without Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	0.33	0.33	1.33	99.9-F[4]	99.9-F
- With Improvements	California Department of Transportation	TS	1	2	0	0	3	1	0	0	0	**1.5**	0.5	**2**	25.0-C	15.9-B
I-10 Freeway EB Ramps (EW) - #4																
- Without Improvements	California Department of Transportation	TS	0	3	1	1	2	0	1.33	0.33	0.33	0	0	0	99.9-F	30.0-C
- With Improvements	California Department of Transportation	TS	0	3	1	1	2	0	**2**	0.5	0.5	0	0	0	26.9-C	20.9-C
Slover Avenue (EW) - #5	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1	1>	39.5-D	39.1-D
Santa Ana Avenue (EW) - #6	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0	1	0	0.5	0.5	d	25.0-C	24.3-C
Project Access #1 (EW) - #7	County of San Bernardino	**TS**	**1**	2	0	0	1.5	0.5	**1**	0	**1**	0	0	0	18.9-C	19.2-C
Project Access #2 (EW) - #8	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.4-B	12.1-B
Project Access #3 (EW) - #9	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.4-B	12.1-B
Project Access #4 (EW) - #10	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.4-B	12.1-B
Project Access #5 (EW) - #11	County of San Bernardino	**CSS**	0	2	0	0	1.5	0.5	0	0	**1**	0	0	0	12.4-B	12.1-B
Jurupa Avenue (EW) - #12	County of San Bernardino	TS	1	1.5	0.5	1	1.5	0.5	0.5	0.5	d	0.5	0.5	d	21.4-C	22.7-C

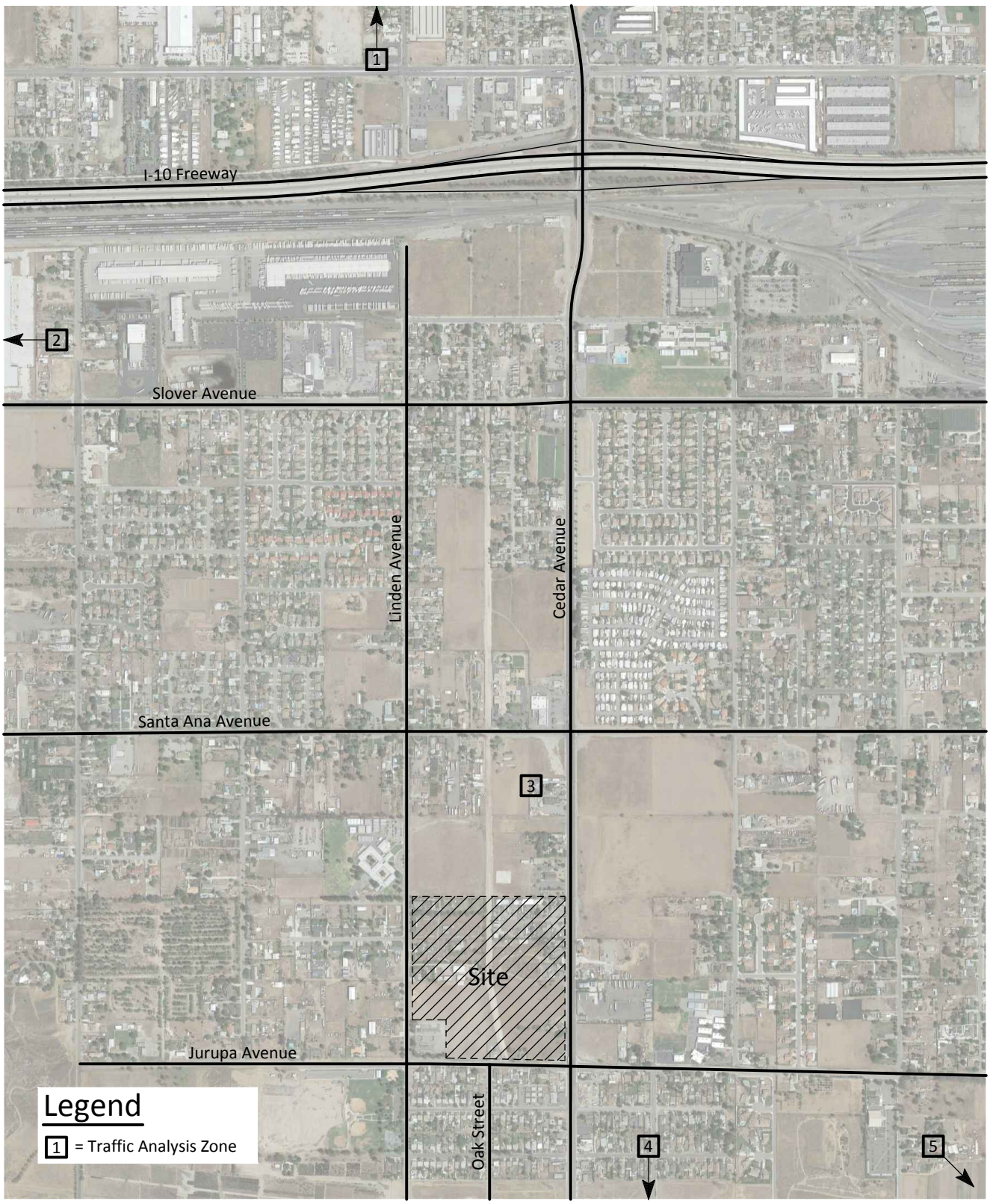
[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; > = Right Turn Overlap; 1 = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop; AWS = All Way Stop; TS = Traffic Signal

[4] 99.9-F - Delay High, Intersection Unstable, Level of Service F

Figure 19
Cumulative Development Traffic Analysis Zone Map

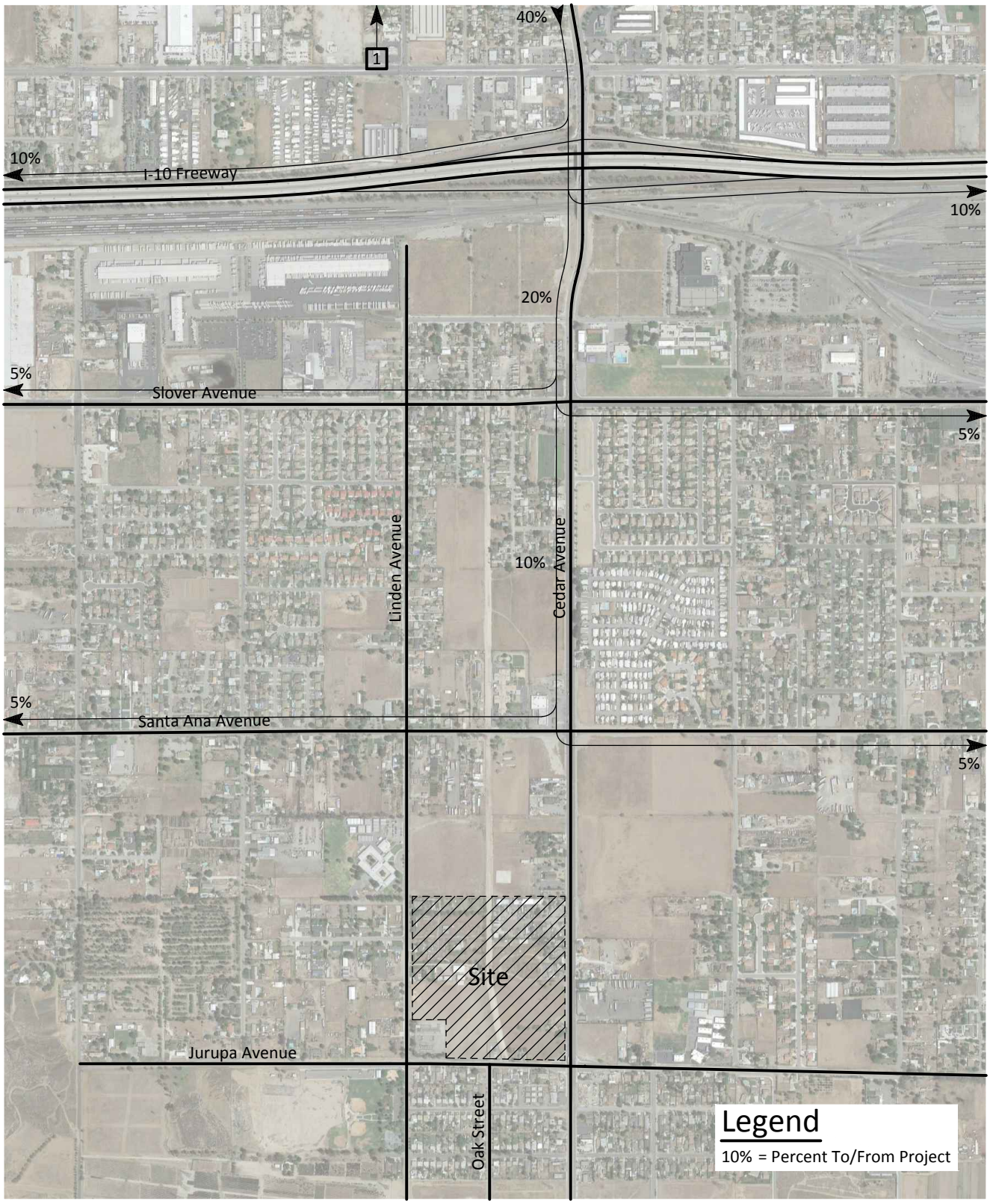


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 20
Cumulative Development Traffic Analysis Zone 1 Trip Distribution

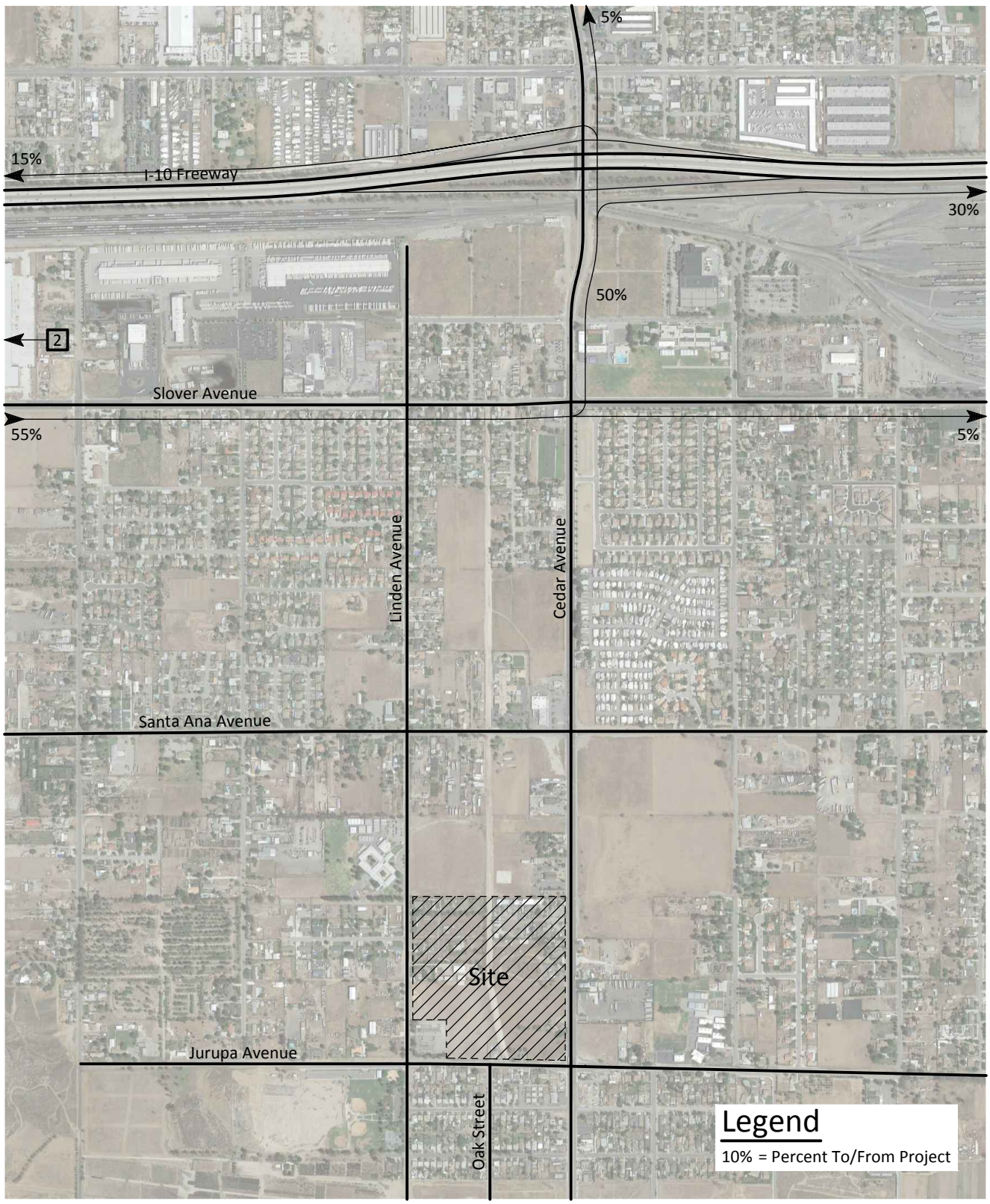


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 21
Cumulative Development Traffic Analysis Zone 2 Trip Distribution

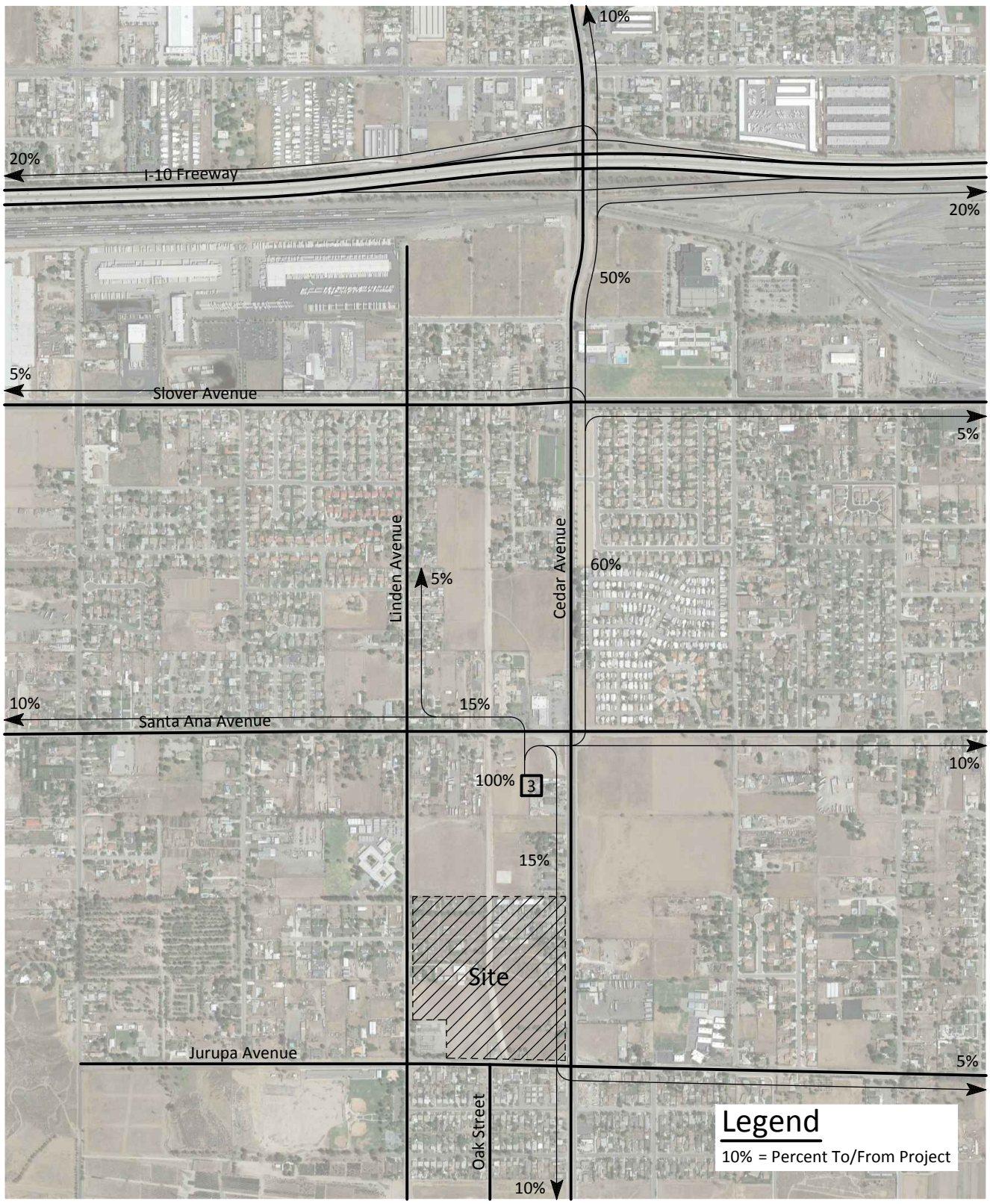


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 22
Cumulative Development Traffic Analysis Zone 3 Trip Distribution

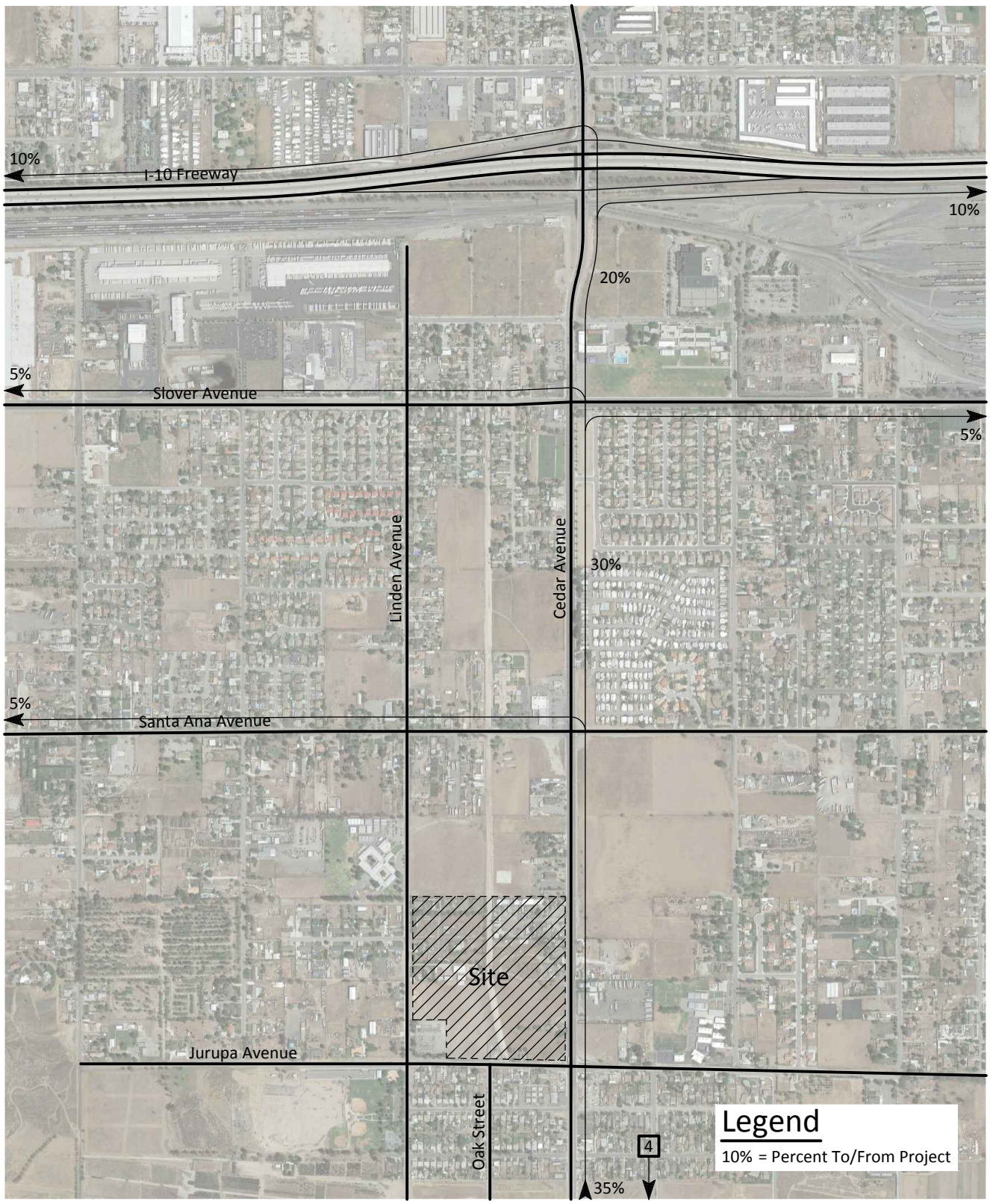


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 23
Cumultive Development Traffic Analysis 4 Trip Distribution

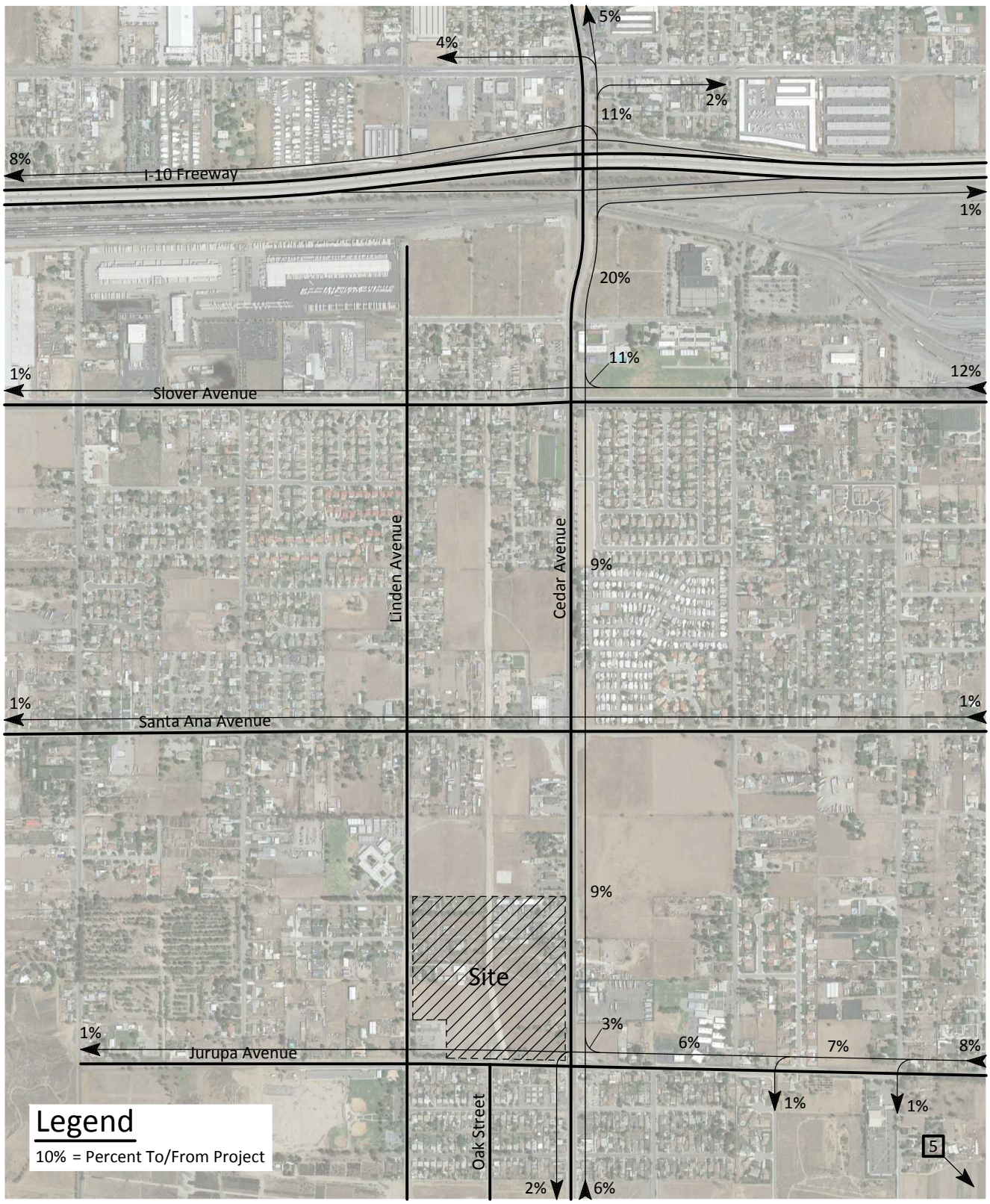


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 24
Cumulative Development Traffic Analysis Zone 5 Trip Distribution - Cars

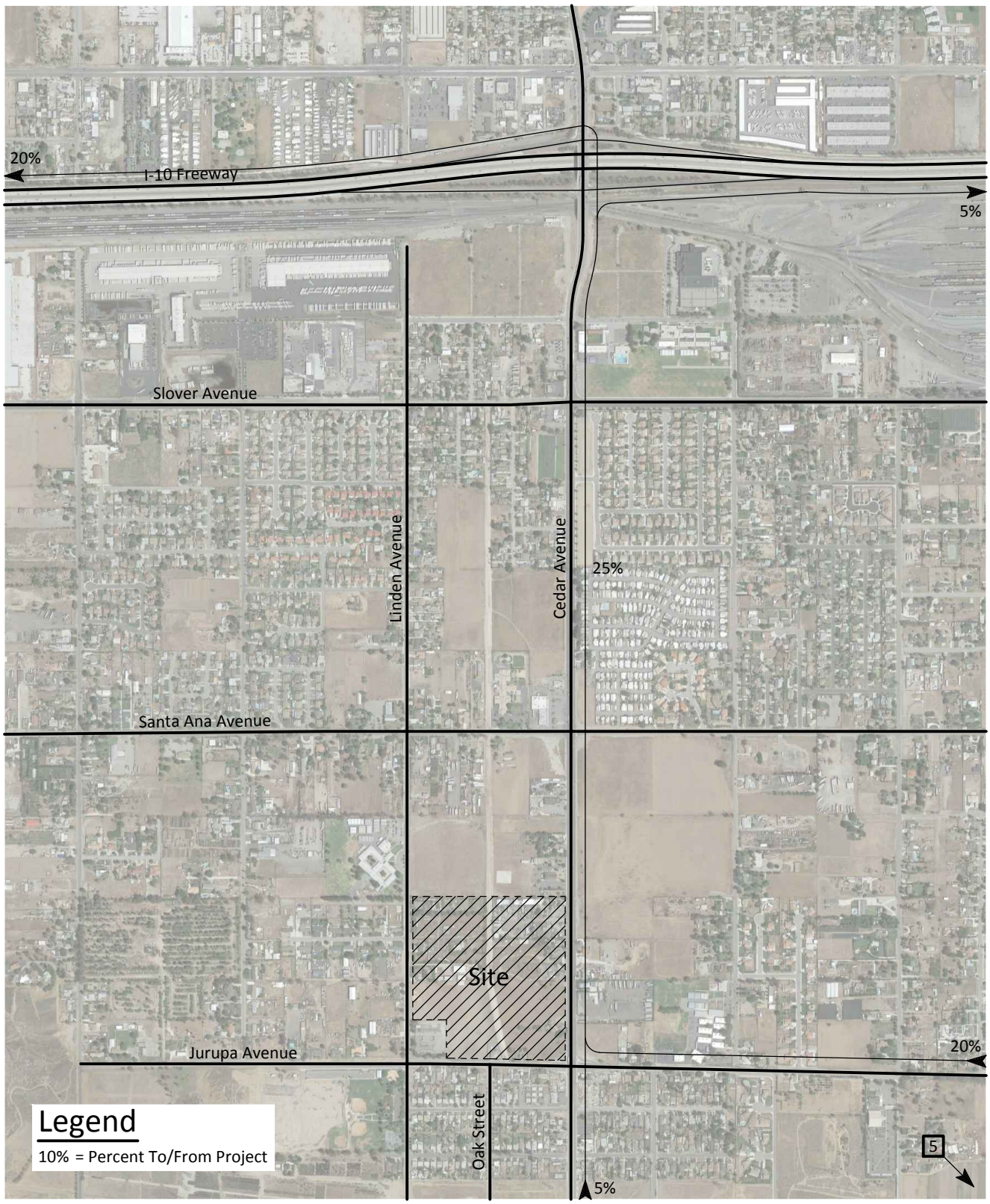


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 25
Cumulative Development Traffic Analysis Zone 5 Trip Distribution - Trucks

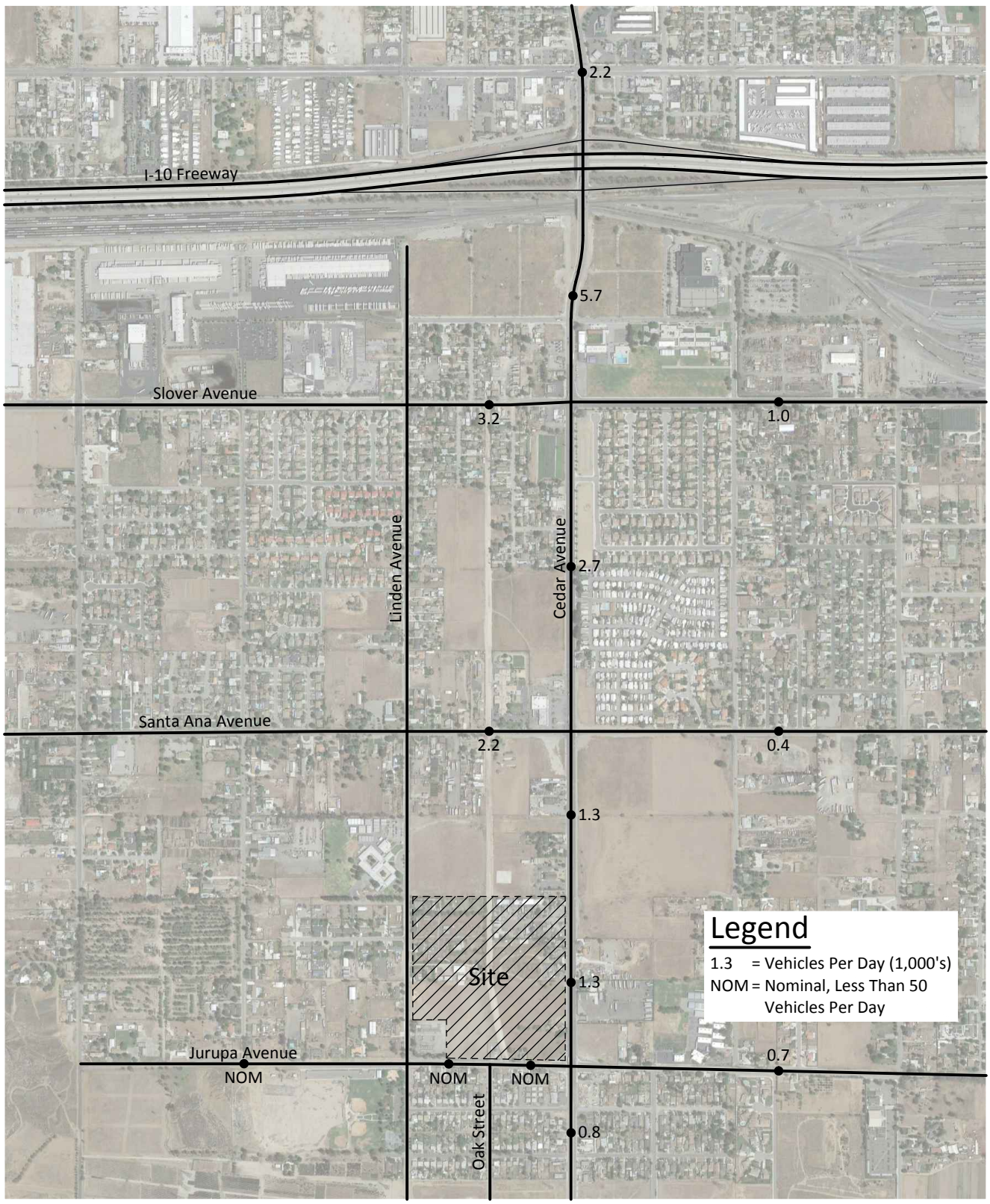


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 26
Cumulative Development Average Daily Traffic Volumes

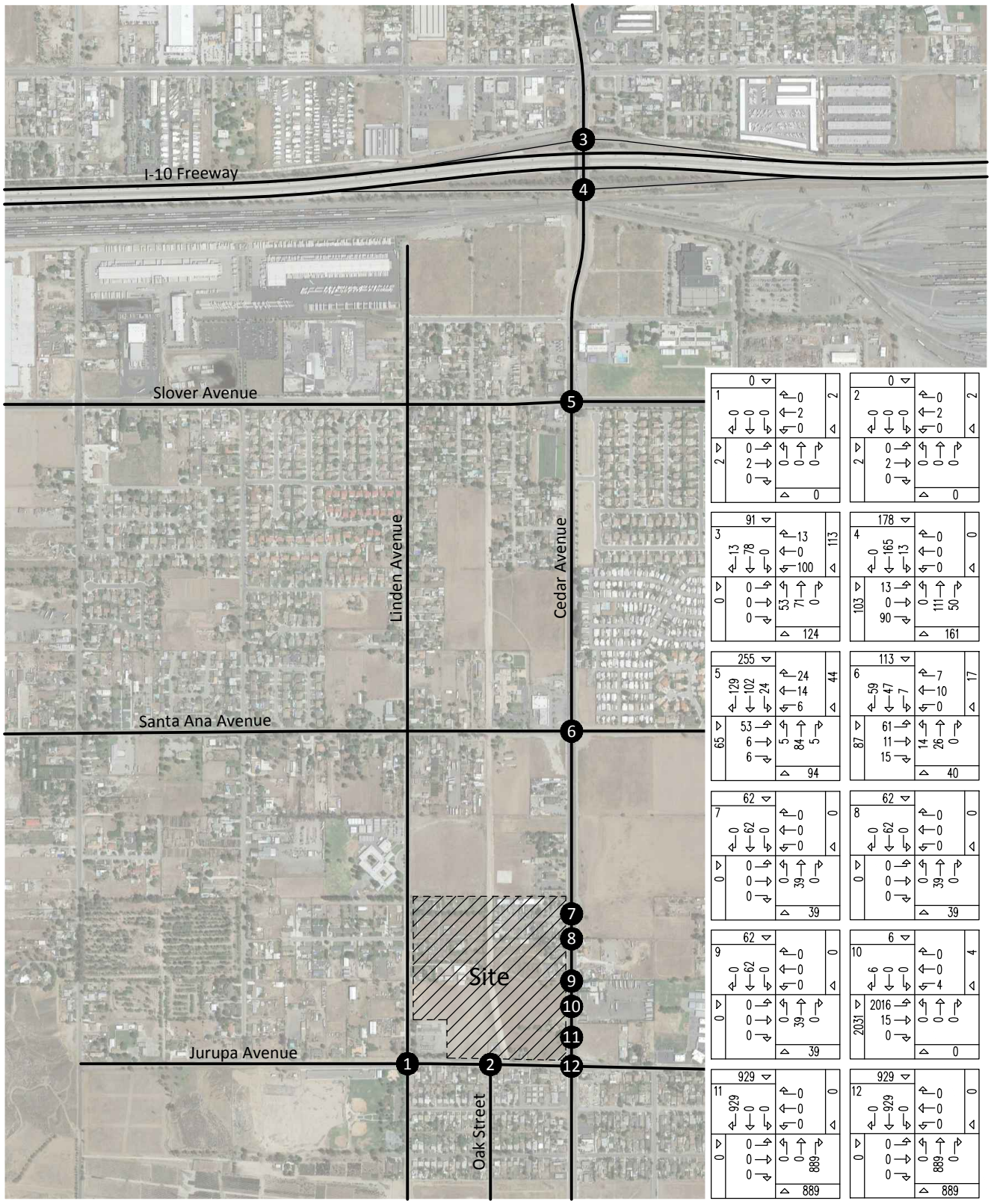


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 27
Cumulative Development
Morning Peak Hour Intersection Turning Movement Volumes

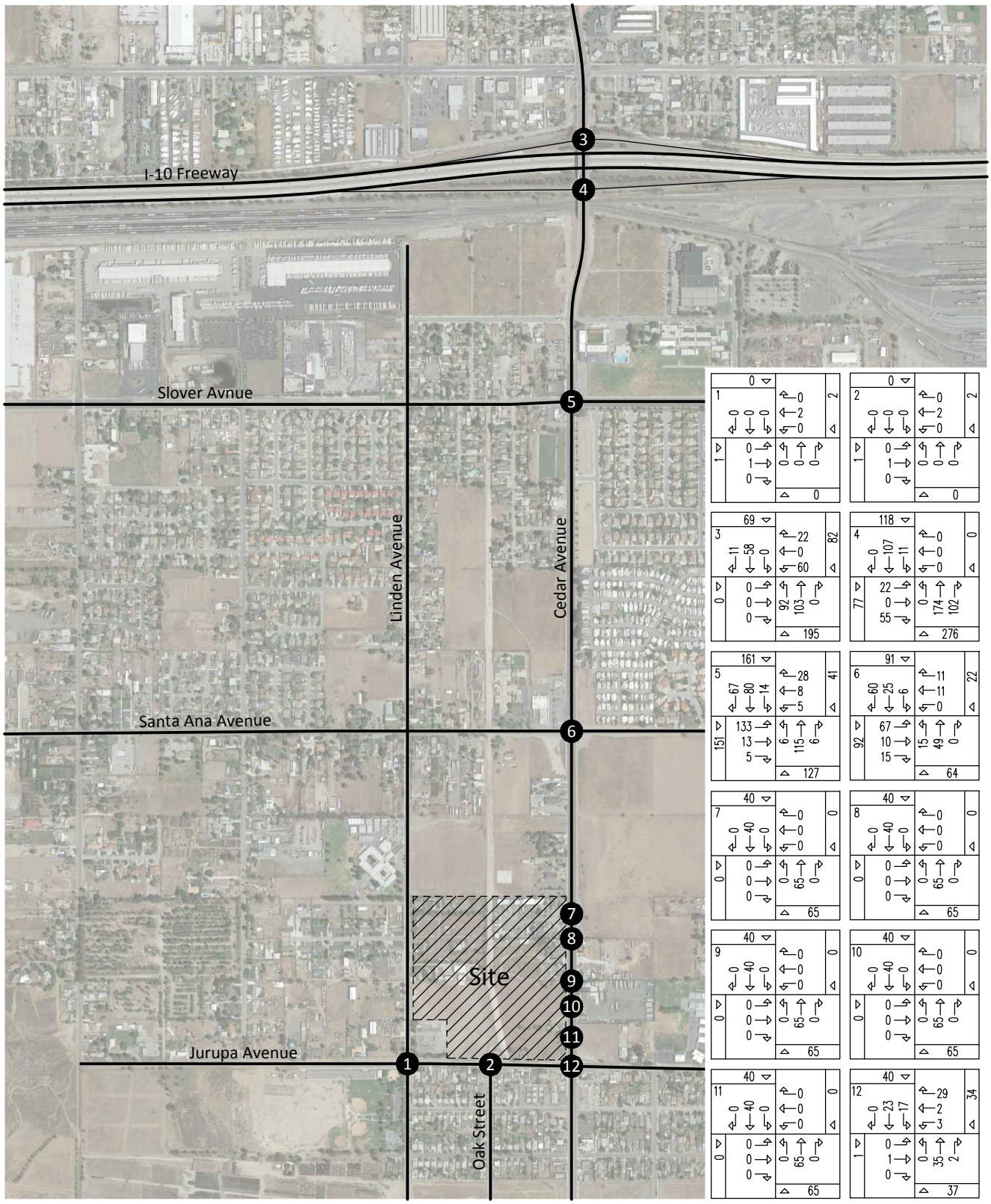


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 28
Cumulative Development
Evening Peak Hour Intersection Turning Movement Volumes

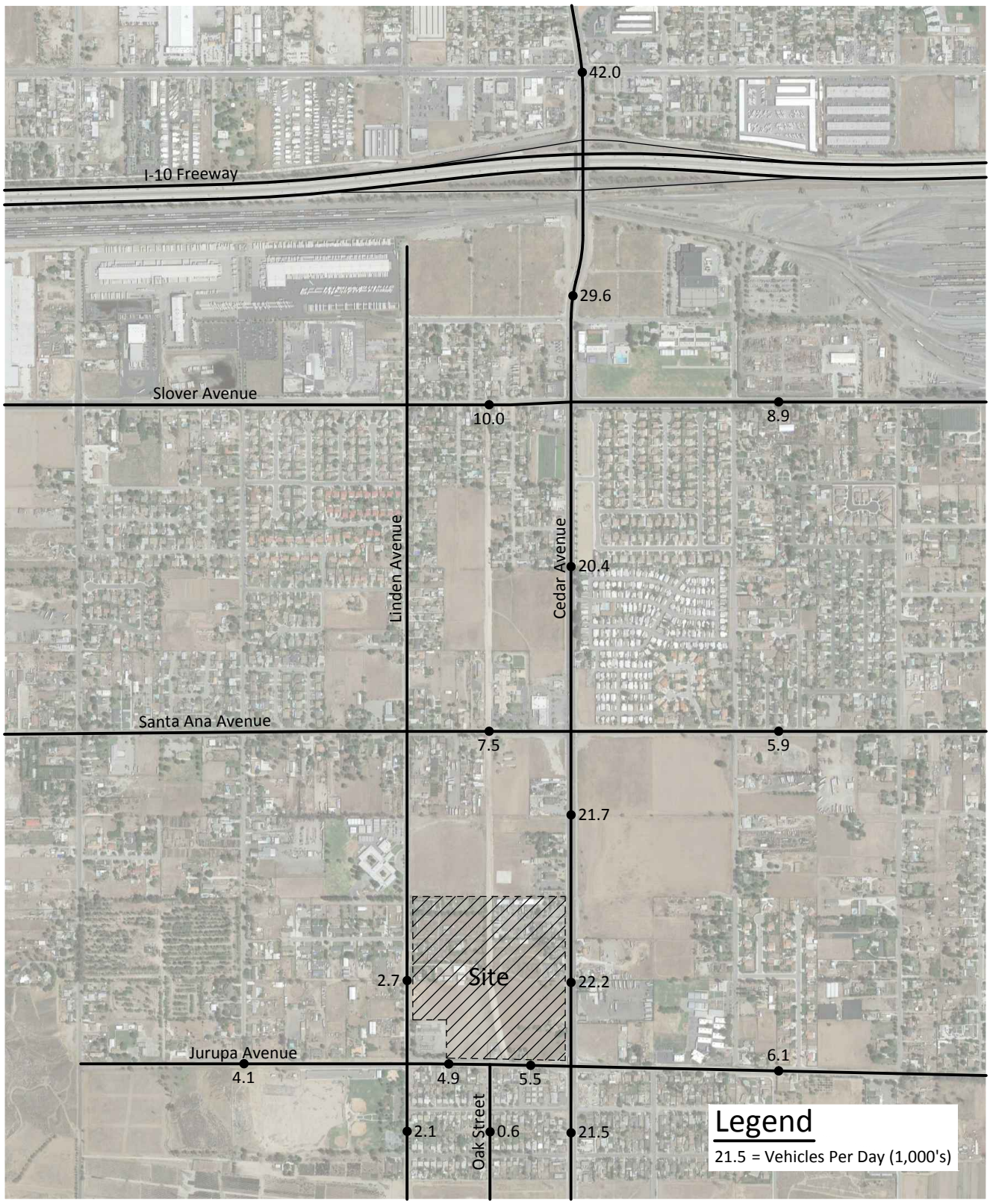


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 29
Existing Plus Project Average Daily Traffic Volumes

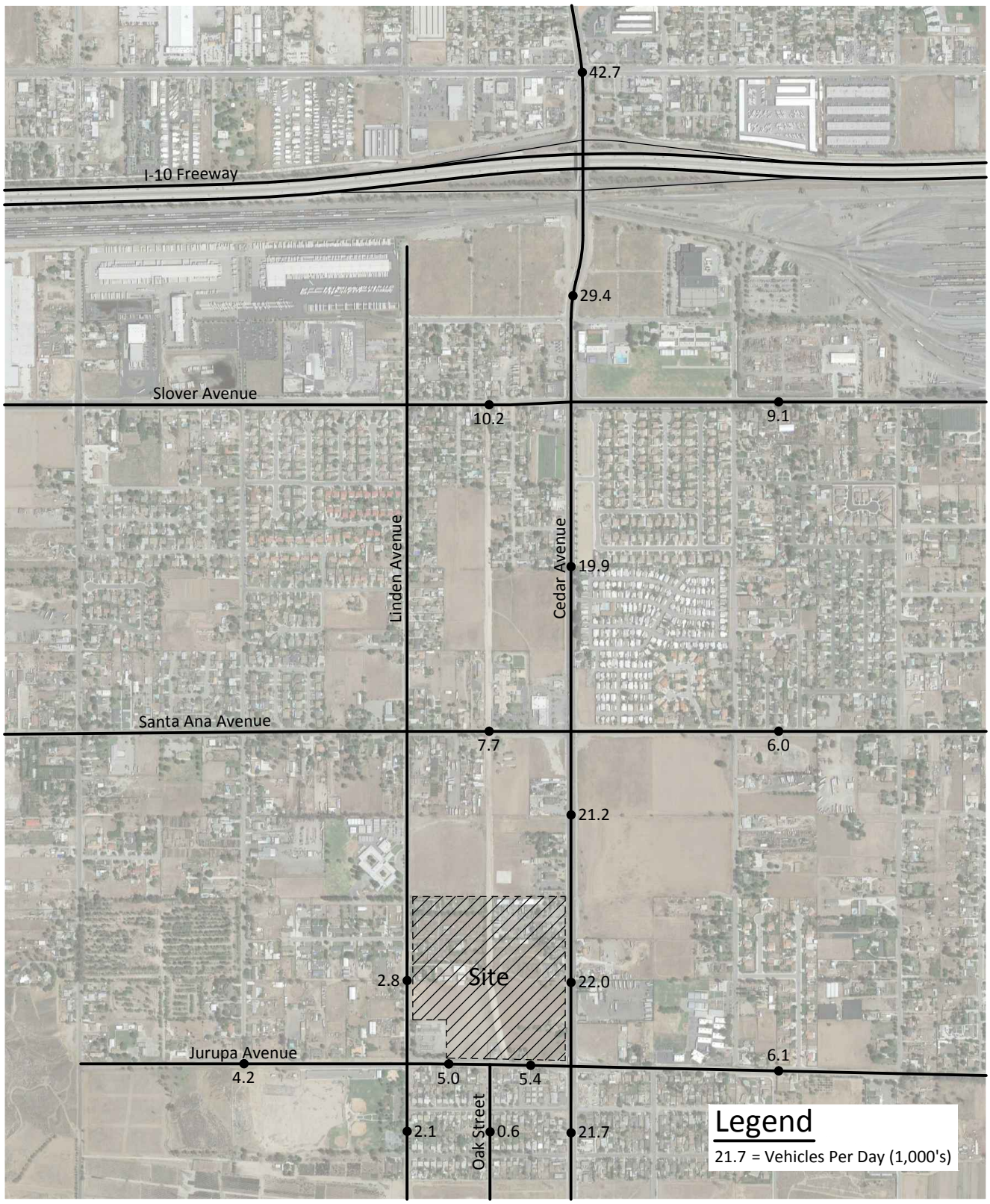


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 30
Opening Year (2018) With Ambient Average Daily Traffic Volumes

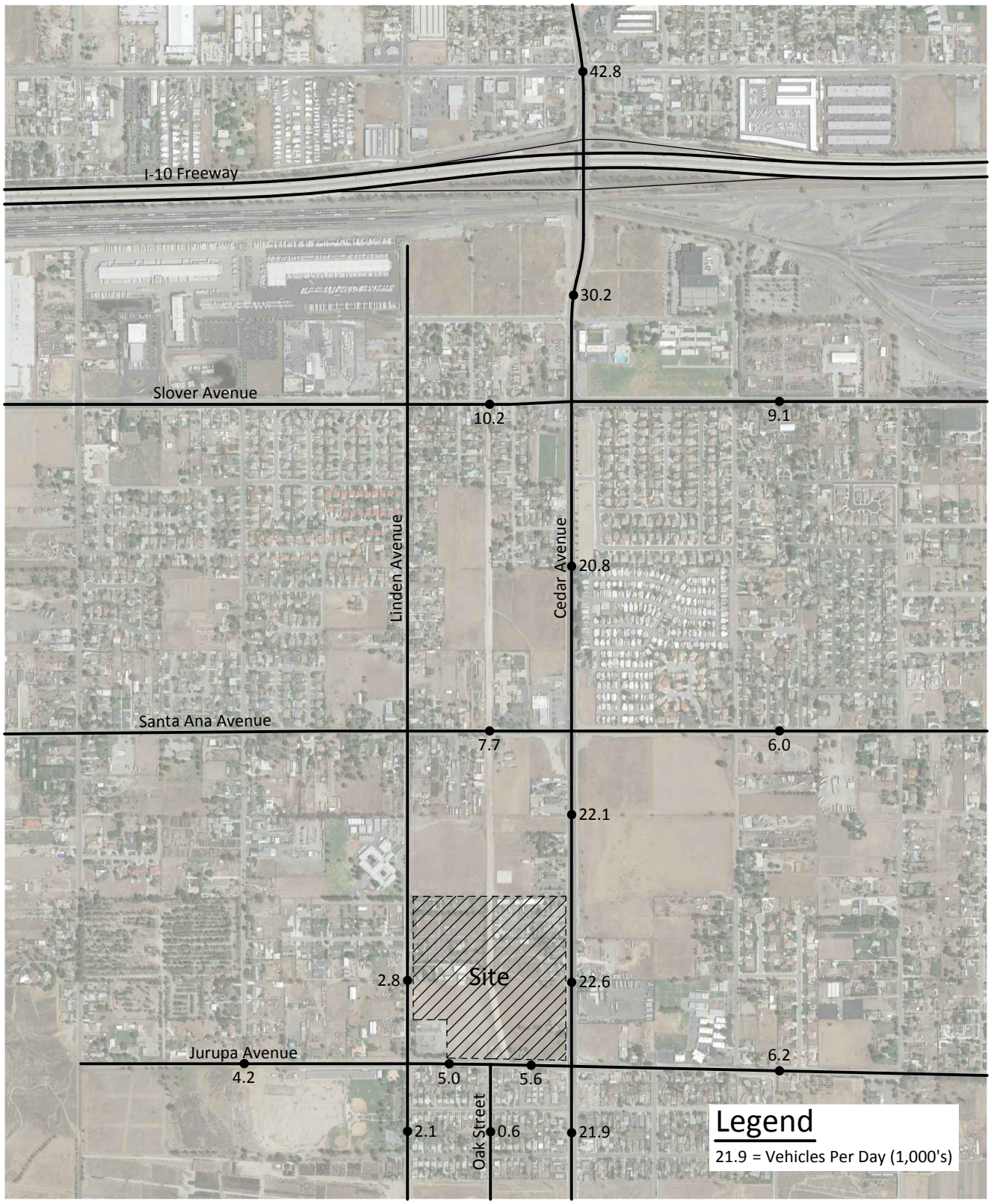


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 31
Opening Year (2018) With Ambient and Project
Average Daily Traffic Volumes

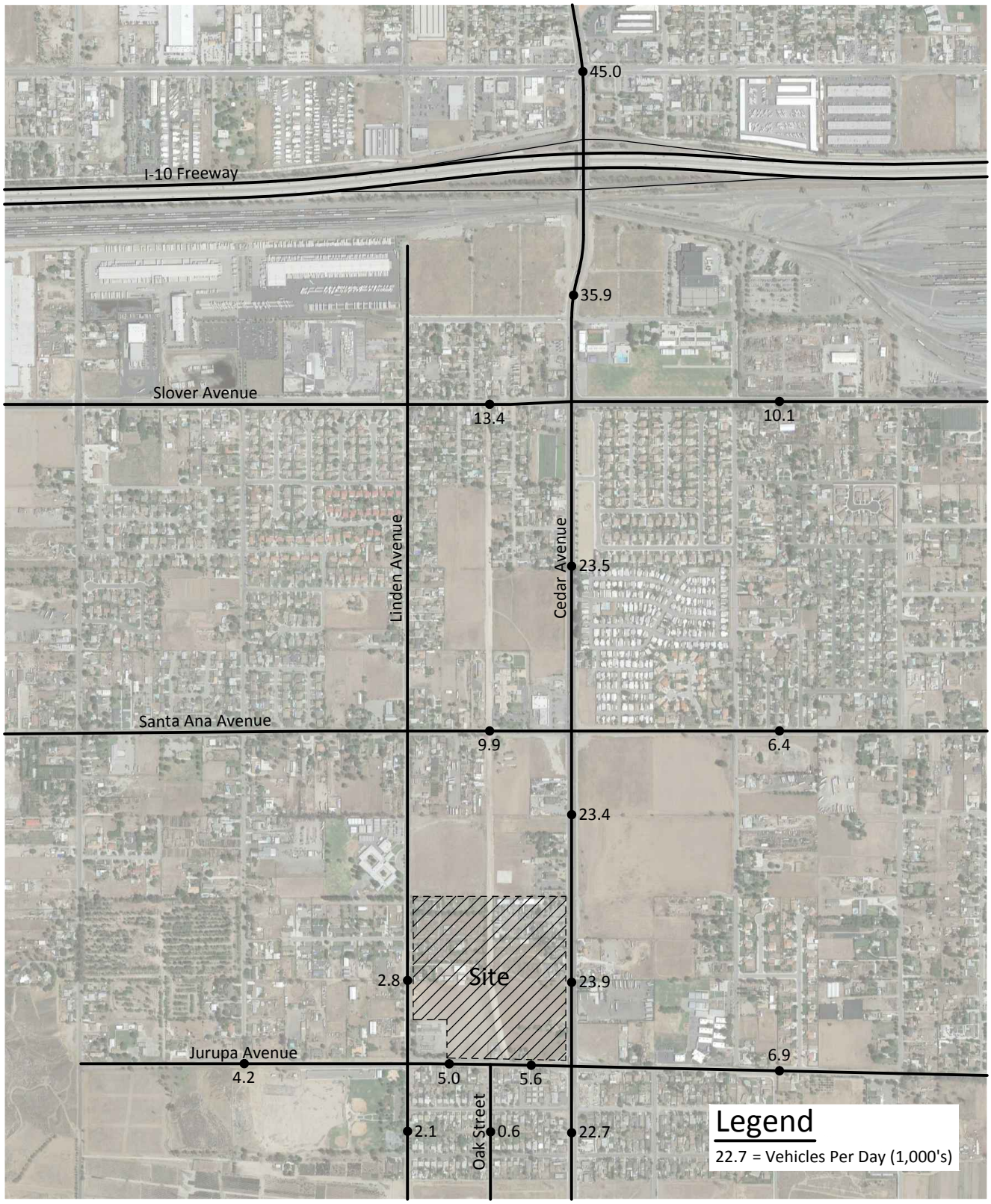


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 32
Opening Year (2018) With Ambient and Cumulative and Project Average Daily Traffic Volumes

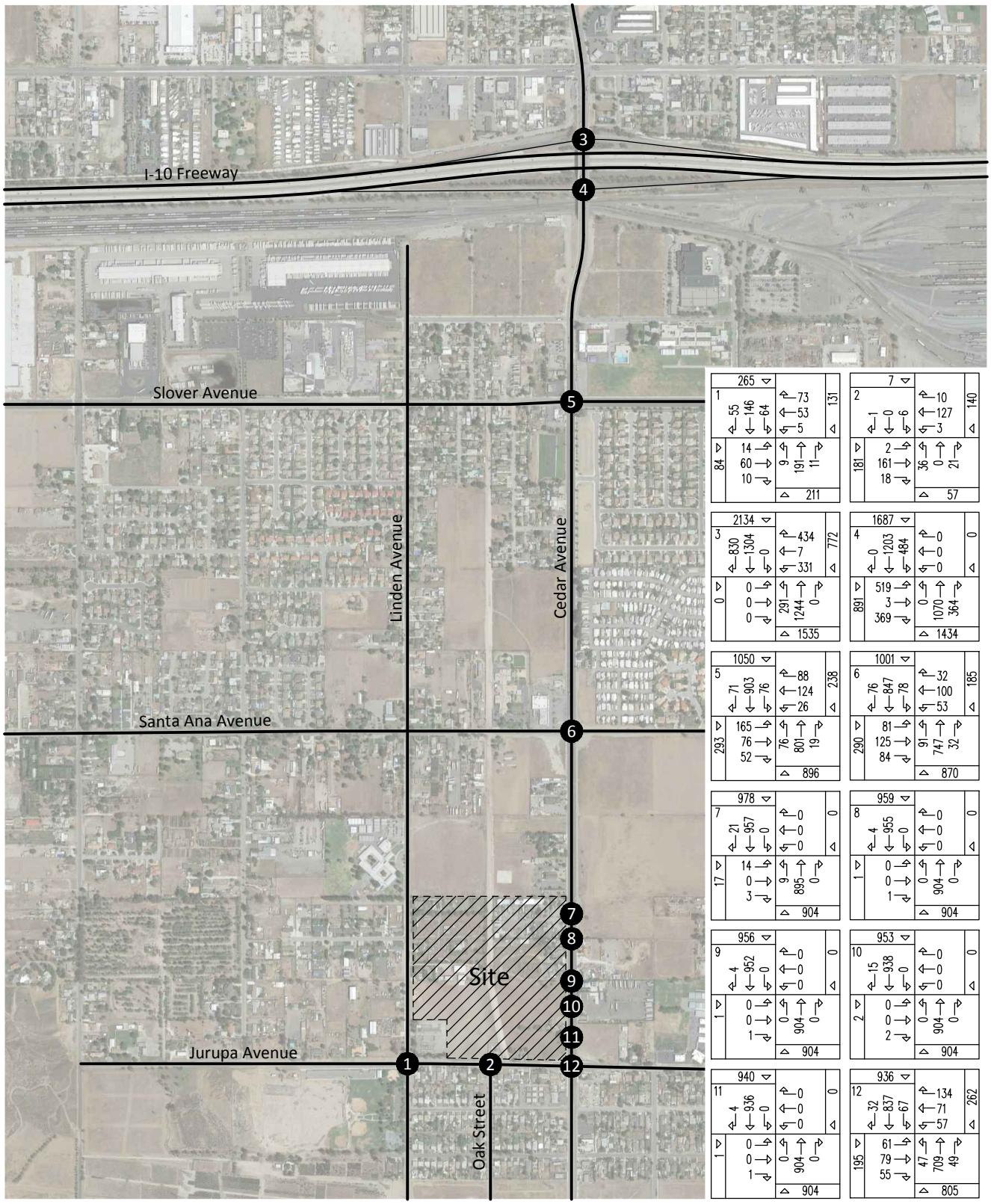


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737a

Figure 33
Existing Plus Project
Morning Peak Hour Intersection Turning Movement Volumes

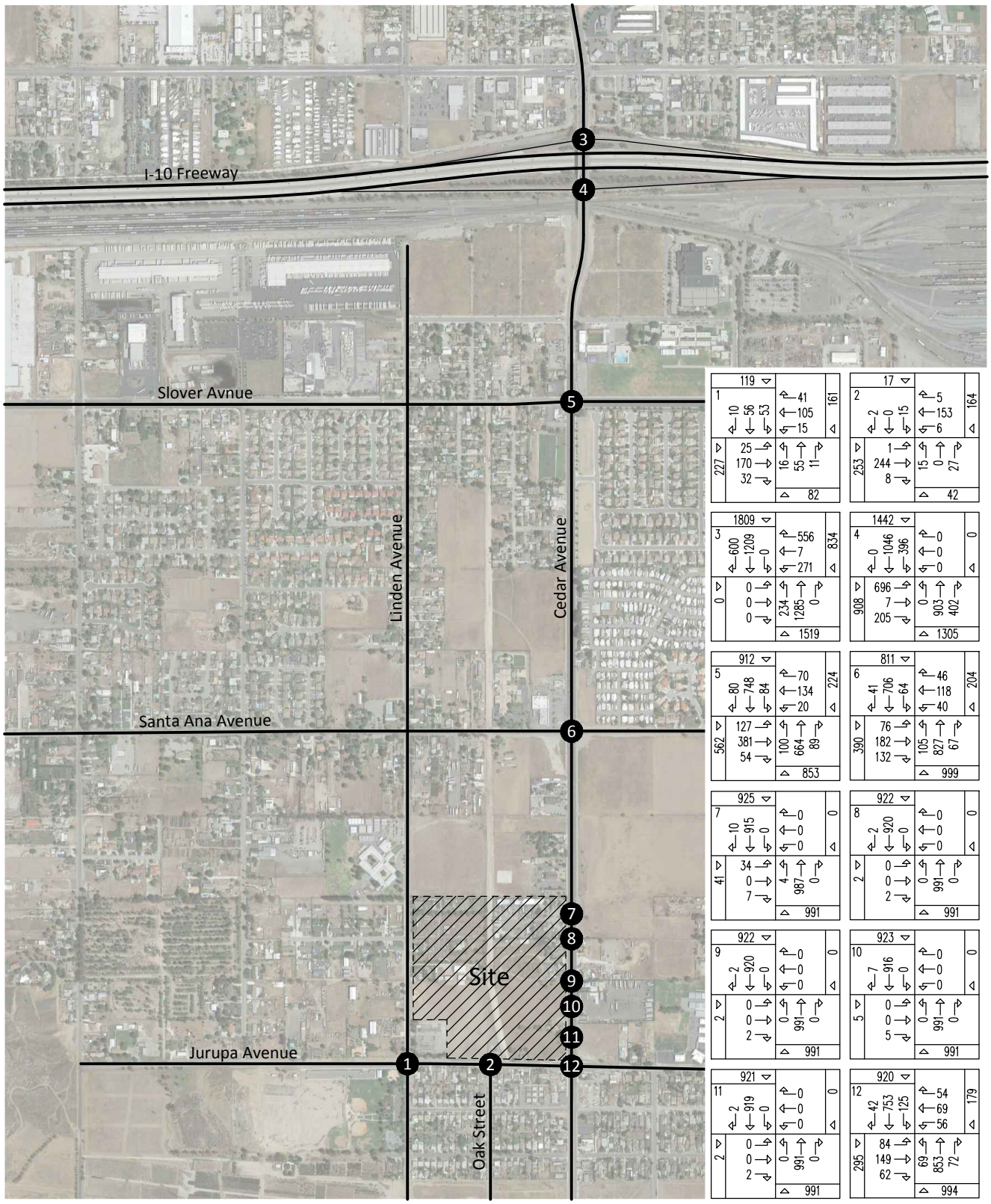


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 34
Existing Plus Project
Evening Peak Hour Intersection Turning Movement Volumes

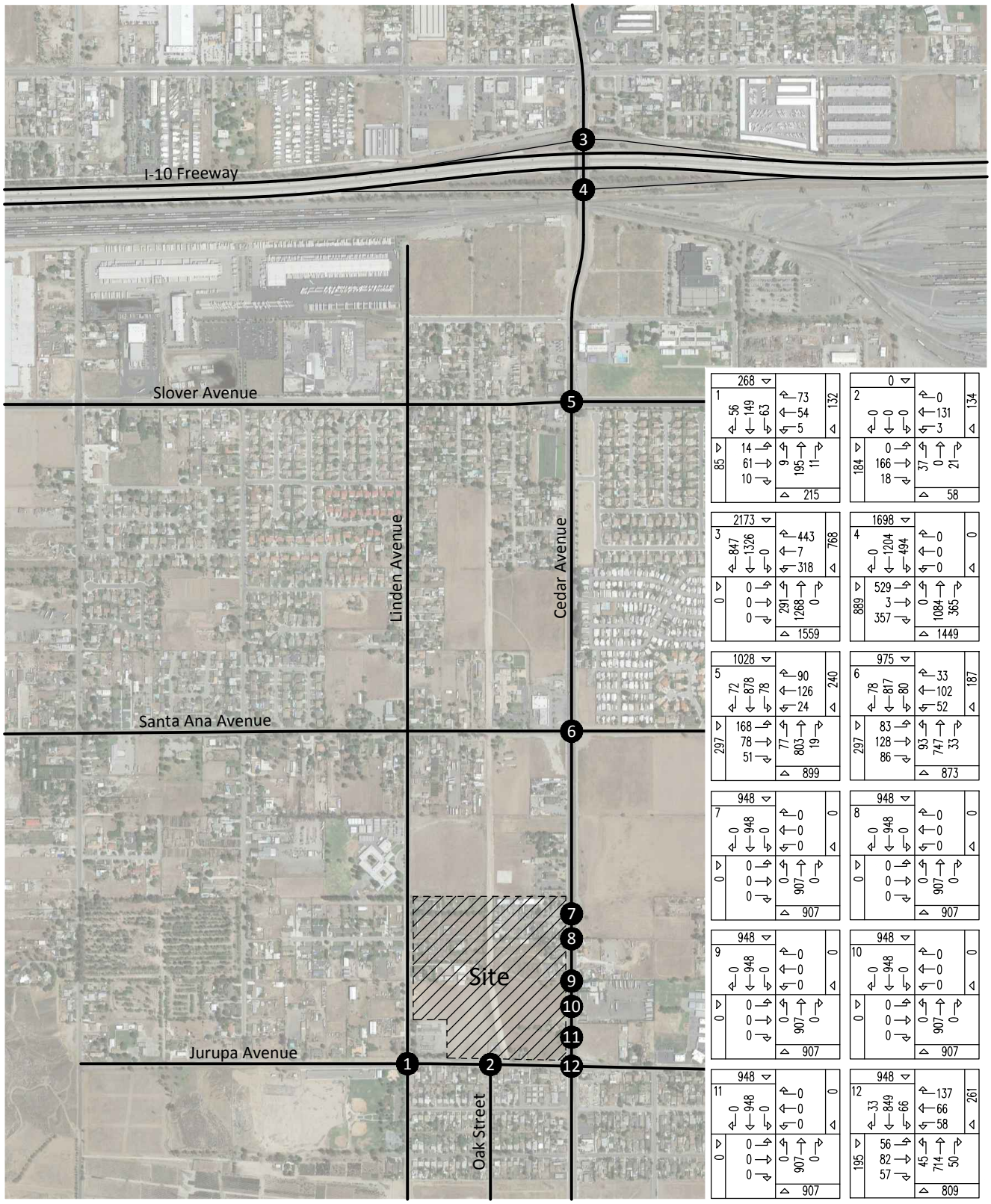


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 35
Opening Year (2018) With Ambient
Morning Peak Hour Intersection Turning Movement Volumes

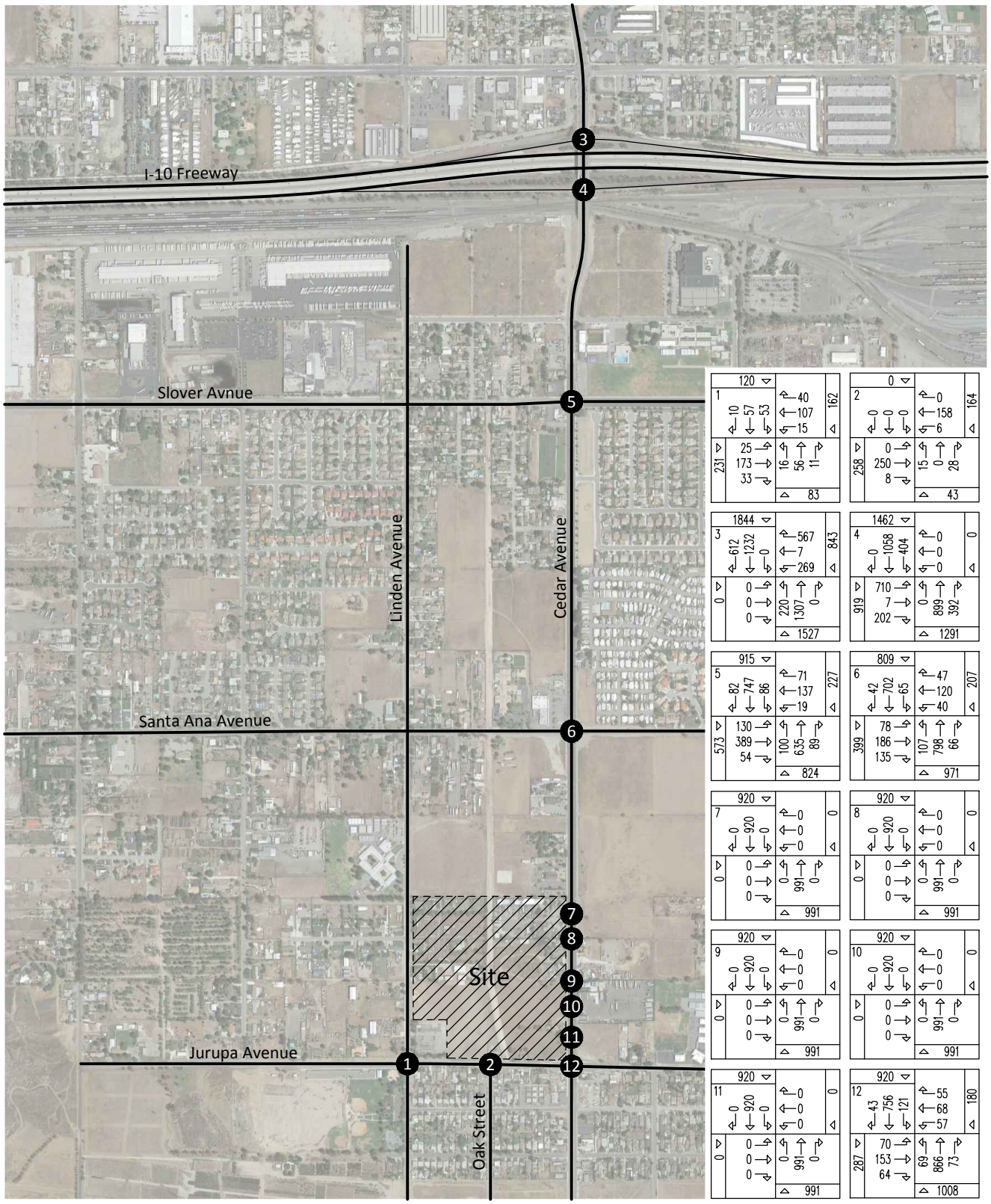


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 36
Opening Year (2018) With Ambient
Evening Peak Hour Intersection Turning Movement Volumes

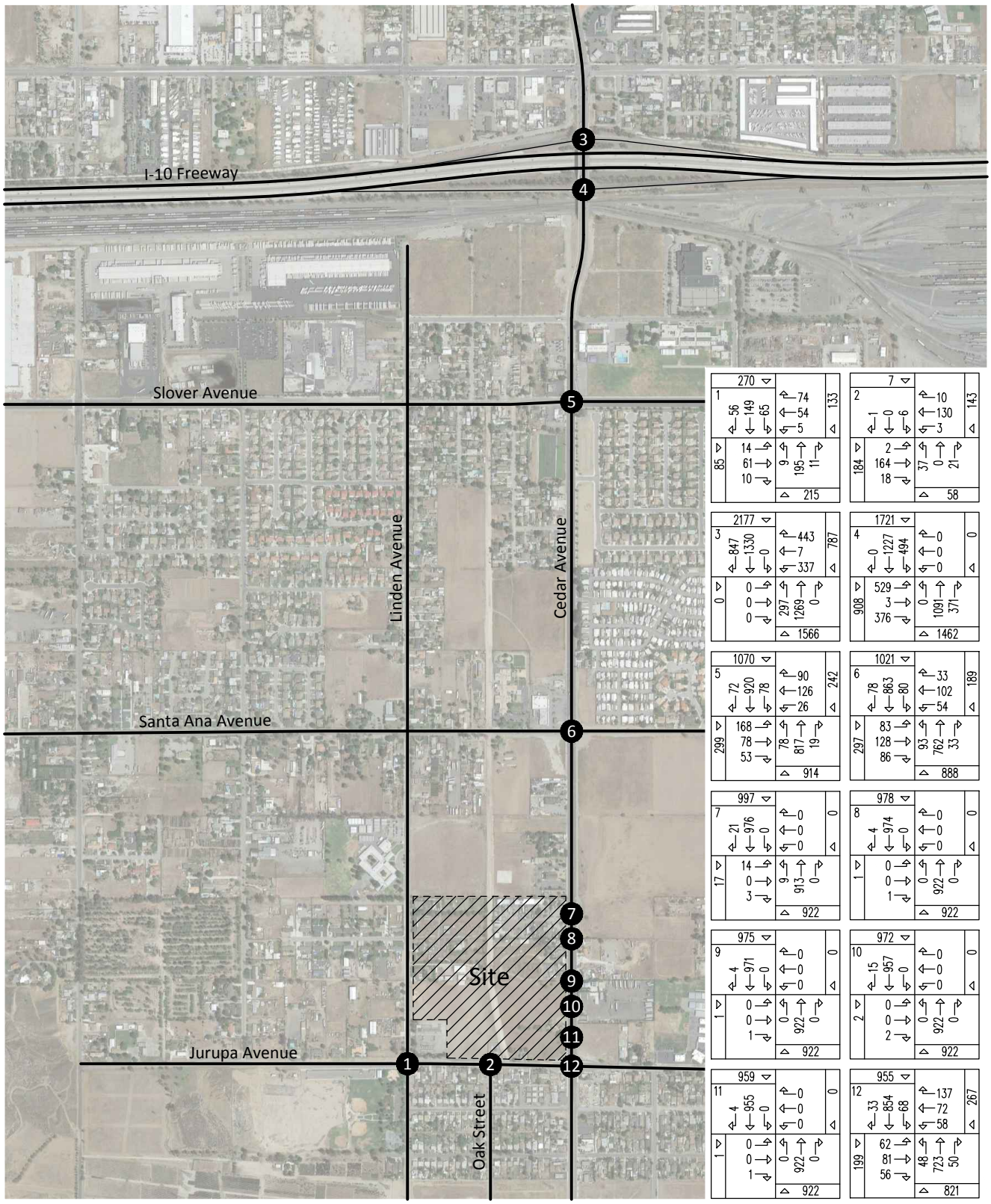


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 37
Opening Year (2018) With Ambient and Project
Morning Peak Hour Intersection Turning Movement Volumes

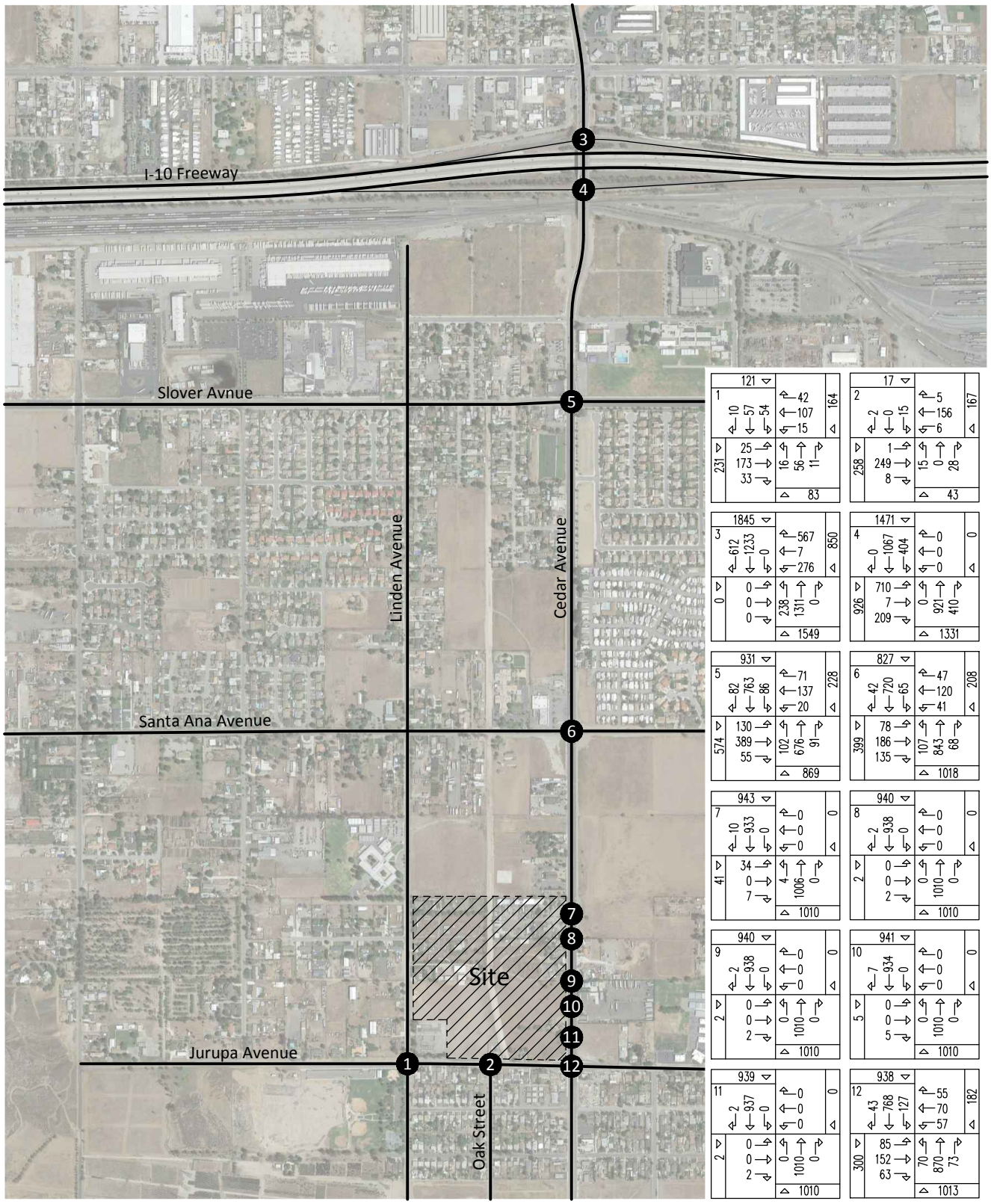


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 38
Opening Year (2018) With Ambient and Project
Evening Peak Hour Intersection Turning Movement Volumes

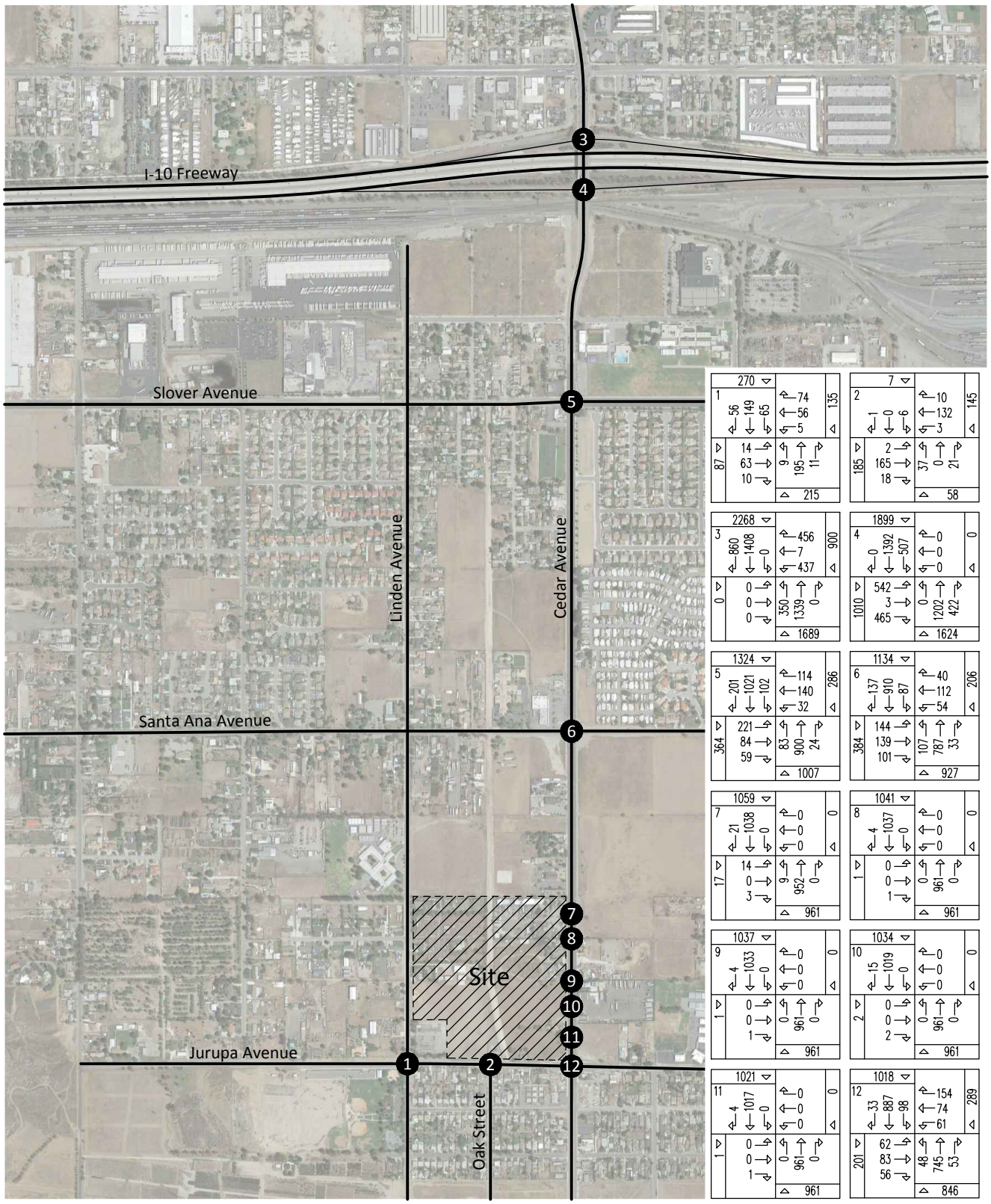


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 39
Opening Year (2018) With Ambient and Cumulative and Project Morning Peak Hour Intersection Turning Movement Volumes

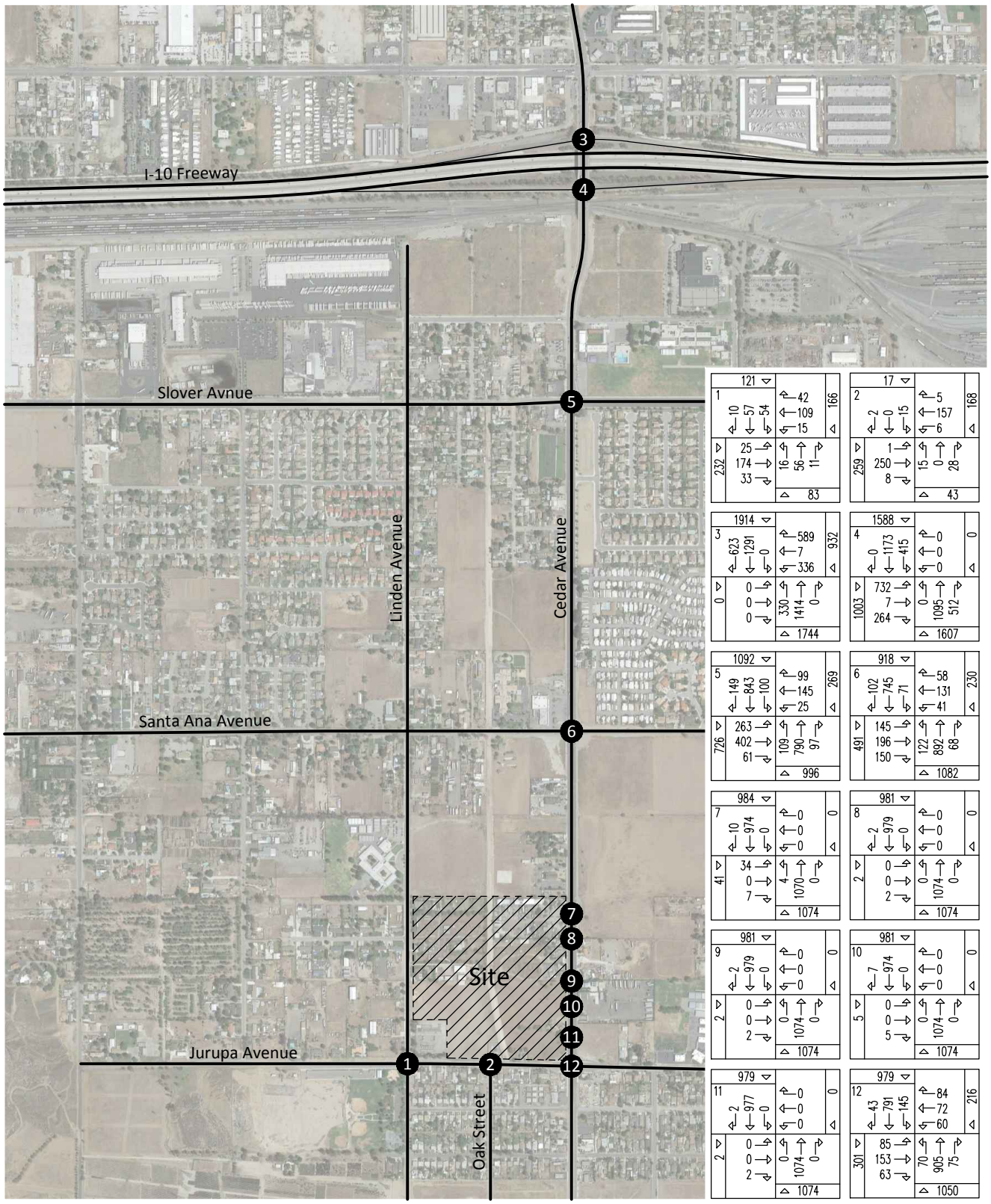


JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

Figure 40
Opening Year (2018) With Ambient and Cumulative and Project Evening Peak Hour Intersection Turning Movement Volumes



JN 5737a

KUNZMAN ASSOCIATES, INC. Intersection reference numbers are in upper left corner of turning movement boxes.

OVER 40 YEARS OF EXCELLENT SERVICE

V. PROJECT MITIGATION

A. Required Improvements and Costs

Improvements that will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for Existing Plus Project and Opening Year (2018). The improvements were determined through the operations analysis of Section IV.

The approximate costs for the improvements have generally been estimated using cost guidelines in the Congestion Management Program Handbook (see Appendix F). A unit cost of $400,000 for installation of a traffic signal has been substituted for the somewhat lower value cited in the Congestion Management Program materials. For adding a through lane, a unit cost of $290,000 has been assumed. The needed improvements and resulting costs are summarized in Table 9 for the study area intersections.

The total cost of needed and unfunded intersection improvements is $0.

B. Project Contribution and Fair Share Costs

The project fair share contributions have also been calculated for improvement locations. The project share of cost has been based on the proportion of project peak hour traffic contributed to the improvement location relative to the total new peak hour traffic volume.

Table 10 presents a summary of improvement cost and project cost shares at the intersection improvement locations. The intersection fair share cost calculations are based on the higher of the morning and evening peak hour traffic volumes. The project's fair share of identified intersection costs is $0.

The dollar figures are rough order of magnitude estimates only. They are intended only for the discussion purposes of this traffic impact analysis, and do not imply any legal responsibility or formula for contributions or mitigation.

As mitigation for the potential traffic impacts, the proposed project shall contribute through an adopted traffic impact fee program in addition to any fair share contributions shown within the traffic study which is not covered within this fee program.

The study area intersections have been mitigated to an acceptable Level of Service. The project is responsible for paying its fair share for the improvements. All required improvements are included in the NEXUS fee program. The project is not required to pay above and beyond their development fees for these scheduled and funded improvements. From a CEQA perspective the project doesn't directly impact any study area intersections, the project does contribute towards mitigation measures to make the significantly impacted intersections less than significant.

Table 9

Summary of Intersection Improvements and Costs

Intersection	Jurisdiction	Improvement	Total Cost
Cedar Avenue (NS) at:			
I-10 Freeway WB Ramps (EW) - #3	Caltrans	Construct a westbound Left Turn Lane	Nexus[1]
		Construct an additional westbound Right Turn Lane	Nexus
I-10 Freeway EB Ramps (EW) - #4	Caltrans	Construct an additional eastbound Left Turn Lane	Nexus
Total			$ -

[1] Improvement included within the 2013 San Bernardino Associated Governments (SANBAG) Development Mitigation Nexus Study.

Table 10

Project Fair Share Intersection Traffic Contribution

Intersection	Jurisdiction	Total Cost	Peak Hour	Existing Traffic	Year (2018) With Ambient and Cumulative and Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	Project Cost Share
Cedar Avenue (NS) at:									
I-10 Freeway WB Ramps (EW) - #3	Caltrans	Nexus[1]	Morning	4,411	4,857	30	446	6.7%	Nexus
			Evening	4,132	4,590	30	458	6.6%	
I-10 Freeway EB Ramps (EW) - #4	Caltrans	Nexus	Morning	3,957	4,533	55	576	9.5%	Nexus
			Evening	3,599	4,198	56	599	9.3%	
Total		$ -							$ -

[1] Improvement included within the 2013 San Bernardino Associated Governments (SANBAG) Development Mitigation Nexus Study.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Summary

The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act.

The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with the California Environmental Quality Act authorizing legislation. This report analyzes traffic impacts for the anticipated opening date with full occupancy of the development in Year 2018, at which time it will be generating trips at its full potential.

A series of scoping discussions were conducted with the County of San Bernardino to define the desired analysis locations for each future analysis year. In addition, staff from the County of San Bernardino has also been contacted to discuss the project and its associated travel patterns.

No analysis is required further than 5 miles from the project site. The roadway elements that must be analyzed are dependent on both the analysis year (project Opening Year or Buildout Year (2035) and project generated traffic volumes. The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments have been included in the analysis when the anticipated project volume equals or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways.

The project does not contribute trips greater than the freeway threshold volume of 100 two-way peak hour trips.

Based on discussions with the County of San Bernardino Transportation Department, cumulative projects have been obtained from the County of San Bernardino Planning Department and the City of Rialto Planning Department. An annual growth rate of one (1) percent has been added to existing traffic volumes and then the projected trip generation and distribution for the cumulative projects has been added.

B. Existing Conditions

Regional access to the project site is provided by the I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways expected to provide local access include Slover Avenue, Santa Ana Avenue, and Jurupa Avenue. The north-south roadways expected to provide local access include Linden Avenue, Oak Street, and Cedar Avenue.

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 1. For Existing traffic conditions, the study area intersections currently operate within acceptable Levels of Service during the peak hours, except for the following

study area intersection that is currently operating at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3

It is important to note that the proposed project is not the cause of the study area intersection currently operating at an unacceptable Level of Service. The project doesn't cause any study area intersections to be directly significantly impacted.

C. Project Trips

Trip generation rates were determined for daily trips, morning peak hour inbound and outbound trips, and evening peak hour inbound and outbound trips for the proposed land use. By multiplying the trip generation rates by the land use quantity, the traffic volumes are determined. Table 2 and 3 show the project trip generation based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012 and the City of Fontana, Truck Trip Generation Study, August 2003.

As shown in Table 2, the proposed development is projected to generate approximately 1,490 daily vehicle trips in passenger car equivalents, 102 of which will occur during the morning peak hour and 108 of which will occur during the evening peak hour.

As shown in Table 3, the existing residential development currently generates a total of approximately 114 daily vehicle trips, 9 of which will occur during the morning peak hour and 12 of which will occur during the evening peak hour.

D. Future Conditions

An Existing Plus Project and Opening Year (2018) analysis are included in this report. The traffic operations analyses are summarized in Table 11.

1. Existing Plus Project

For Existing Plus Project traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3

For Existing Plus Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

2. Opening Year (2018) With Ambient

For Opening Year (2018) With Ambient traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3

For Opening Year (2018) With Ambient traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

3. Opening Year (2018) With Ambient and Project

For Opening Year (2018) With Ambient and Project traffic conditions, the following study area intersection is projected to operate at an unacceptable Level of Service during the evening peak hour:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3
I-10 Freeway EB Ramps (EW) - #4

For Opening Year (2018) With Ambient and Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

4. Opening Year (2018) With Ambient and Cumulative and Project

For Opening Year (2018) With Ambient and Cumulative and Project traffic conditions, the following study area intersections are projected to operate at unacceptable Levels of Service during the peak hours:

Cedar Avenue (NS) at:
I-10 Freeway WB Ramps (EW) - #3
I-10 Freeway EB Ramps (EW) - #4

For Opening Year (2018) With Ambient and Cumulative and Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

A traffic signal is not projected to be warranted at the following study area intersection for Opening Year (2018) With Ambient and Cumulative and Project traffic conditions (see Appendix E):

Cedar Avenue (NS) at:
Project Access #1 (EW) - #7

The unsignalized intersection has been evaluated for a traffic signal using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual of Uniform Traffic Control Devices.

It is important to note that the proposed project is not the cause of the study area intersection that is projected to continue to operate at an unacceptable Level of Service. The project doesn't cause any study area intersections to be directly significantly impacted.

In the County of San Bernardino an intersection operating at Level of Service E or F needs to be mitigated to Level of Service D or better. The study area intersections have been mitigated to an acceptable Level of Service. The project is responsible for paying its fair share for the improvements. All required improvements are included in the NEXUS fee program. The project is not required to pay above and beyond their development fees for these scheduled and funded improvements. From a CEQA perspective the project doesn't directly impact any study area intersections, the project does contribute towards mitigation measures to make the significantly impacted intersections less than significant.

Based on discussions with the applicant and the County of San Bernardino Transportation Department, a traffic signal is required at this intersection to allow the median break which allows slow moving trucks to exit the site desiring to travel north along Cedar Avenue towards the I-10 Freeway.

E. Cost Summary

Improvements that will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for Existing Plus Project and Opening Year (2018) traffic conditions. The improvements were determined through the operations analysis of Section IV.

The total cost of needed and unfunded intersection improvements is $0.

Table 9 presents a summary of improvement cost and project cost shares at the Opening Year (2018) With Project intersection improvement locations. The intersection fair share cost calculations are based on the evening peak hour traffic volumes. The project's fair share of identified intersection costs is $0.

The dollar figures are rough order of magnitude estimates only. They are intended only for the discussion purposes of this traffic impact analysis, and do not imply any legal responsibility or formula for contributions or mitigation.

As mitigation for the potential traffic impacts, the proposed project shall contribute through an adopted traffic impact fee program in addition to any fair share contributions shown within the traffic study which is not covered within this fee program.

F. Recommendations

The recommendations in this section address on-site improvements, off-site improvements and the phasing of all necessary study area transportation improvements.

1. On-Site Improvements

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project itself (see Figure 41).

Construct Linden Avenue from the north project boundary to the project south boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

Construct Cedar Avenue from the north project boundary to Jurupa Avenue at its ultimate half-section width as a Major Arterial (120 foot right-of-way) including landscaping and parkway improvements in conjunction with development, as necessary.

Construct Jurupa Avenue from the project west boundary to Cedar Avenue at its ultimate half-section width as a Major Arterial (120 foot right-of-way) including landscaping and parkway improvements in conjunction with development, as necessary.

Sight distance at each project access should be reviewed with respect to California Department of Transportation/County of San Bernardino standards in conjunction with the preparation of final grading, landscaping, and street improvement plans.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

The site should provide sufficient parking spaces to meet County of San Bernardino parking code requirements in order to service on-site parking demand.

2. Off-Site Improvements

The necessary off-site improvement recommendations were described in previous sections of this report. The project should contribute towards the cost of necessary study area improvements on a fair share or “pro-rata” basis.

As is the case for any roadway design, the County of San Bernardino should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout

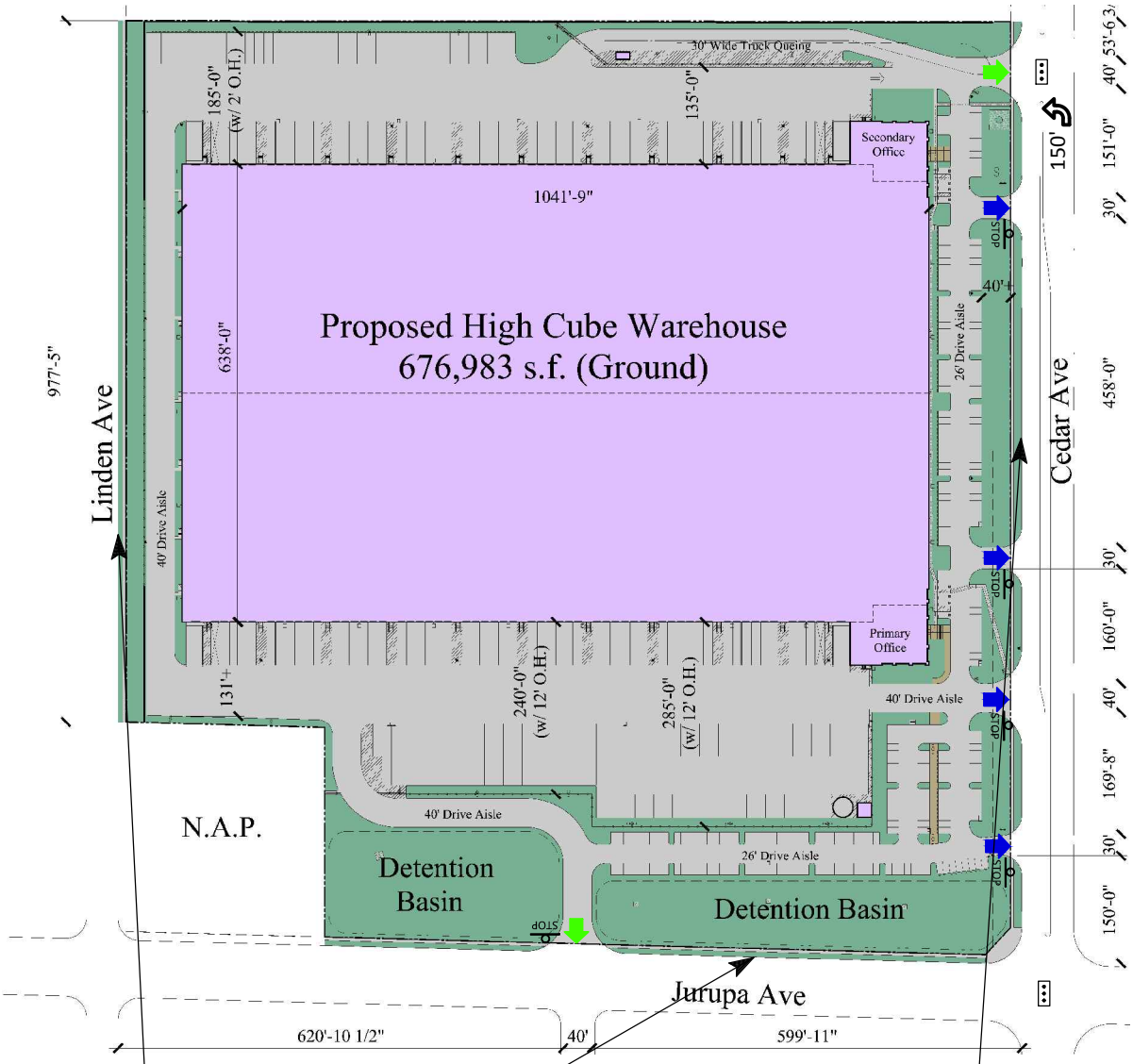
should specifically include an interconnect of the traffic signals to function in a coordinated system.

Table 11

Intersection Delay and Level of Service Summary

Intersection	Jurisdiction	Peak Hour Delay-Level of Service									
						Opening Year (2018)					
		Existing		Existing Plus Project		With Ambient		With Ambient and Project		With Ambient and Cumulative and Project	
		Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening	Morning	Evening
Linden Avenue (NS) at:											
Jurupa Avenue (EW) - #1	County of San Bernardino	12.6-B	9.6-A	12.7-B	9.6-A	12.9-B	9.7-A	13.0-B	9.7-A	13.0-B	9.7-A
Project Access/Oak Street (NS) at:											
Jurupa Avenue (EW) - #2											
- Without Improvements	County of San Bernardino	11.0-B	10.7-B	11.6-B	12.4-B	11.1-B	10.8-B	11.7-B	12.5-B	11.7-B	12.5-B
- With Improvements	County of San Bernardino			11.6-B	12.4-B			11.7-B	12.5-B	11.7-B	12.5-B
Cedar Avenue (NS) at:											
I-10 Freeway WB Ramps (EW) - #3											
- Without Improvements	California Department of Transportation	99.9-F	19.6-B	99.9-F	20.4-C	99.9-F	20.4-C	99.9-F	21.4-C	99.9-F	99.9-F
- With Improvements	California Department of Transportation			22.7-C	14.1-B	22.6-C	13.9-B	24.4-C	14.3-B	25.0-C	15.9-B
I-10 Freeway EB Ramps (EW) - #4											
- Without Improvements	California Department of Transportation	32.2-C	21.8-C	33.7-C	22.3-C	34.0-C	22.6-C	99.9-F	21.4-C	99.9-F	30.0-C
- With Improvements	California Department of Transportation							21.2-C	17.8-B	26.9-C	20.9-C
Slover Avenue (EW) - #5	County of San Bernardino	32.5-C	29.1-C	32.8-C	29.6-C	32.9-C	29.6-C	33.2-C	30.1-C	39.5-D	39.1-D
Santa Ana Avenue (EW) - #6	County of San Bernardino	22.9-C	22.0-C	23.1-C	22.3-C	23.0-C	22.2-C	23.2-C	22.5-C	25.0-C	24.3-C
Project Access #1 (EW) - #7	County of San Bernardino			17.6-C	18.0-C			17.9-C	18.4-C	18.9-C	19.2-C
Project Access #2 (EW) - #8	County of San Bernardino			12.0-B	11.8-B			12.1-B	11.9-B	12.4-B	12.1-B
Project Access #3 (EW) - #9	County of San Bernardino			11.9-B	11.8-B			12.1-B	11.9-B	12.4-B	12.1-B
Project Access #4 (EW) - #10	County of San Bernardino			11.9-B	11.8-B			12.0-B	11.9-B	12.4-B	12.1-B
Project Access #5 (EW) - #11	County of San Bernardino			11.9-B	11.8-B			12.0-B	11.9-B	12.4-B	12.1-B
Jurupa Avenue (EW) - #12	County of San Bernardino	20.8-C	21.6-C	20.9-C	21.9-C	20.9-C	21.8-C	21.0-C	22.0-C	21.4-C	22.7-C

Figure 41
Circulation Recommendations



Construct Linden Avenue from the north project boundary to the south project boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

Construct Jurupa Avenue from the west project boundary to Cedar Avenue at its ultimate half-section width as a Major Arterial (120 foot right-of-way) including landscaping and parkway improvements in conjunction with development, as necessary.

Construct Cedar Avenue from the north project boundary to Jurupa Avenue at its ultimate half-section width as a Major Arterial (120 foot right-of-way) including landscaping and parkway improvements in conjunction with development, as necessary.

Sight distance at each project access should be reviewed with respect to California Department of Transportation/County of San Bernardino standards in conjunction with the preparation of final grading, landscaping, and street improvement plans.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

The site should provide sufficient parking spaces to meet County of San Bernardino parking code requirements in order to service on-site parking demand.

As is the case for any roadway design, the County of San Bernardino should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Legend

= Traffic Signal
STOP = Stop Sign
= Right Turns In/Out Only
= Full Access
150' = Left Turn Pocket Length

APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – Traffic Count Worksheets

Appendix C – Passenger Car Equivalent Calculation Worksheets

Appendix D – Explanation and Calculation of Intersection Delay

Appendix E – Traffic Signal Warrant Worksheet

Appendix F – Preliminary Construction Cost Estimates for Congestion Management Program

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

Traffic Count Worksheets

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

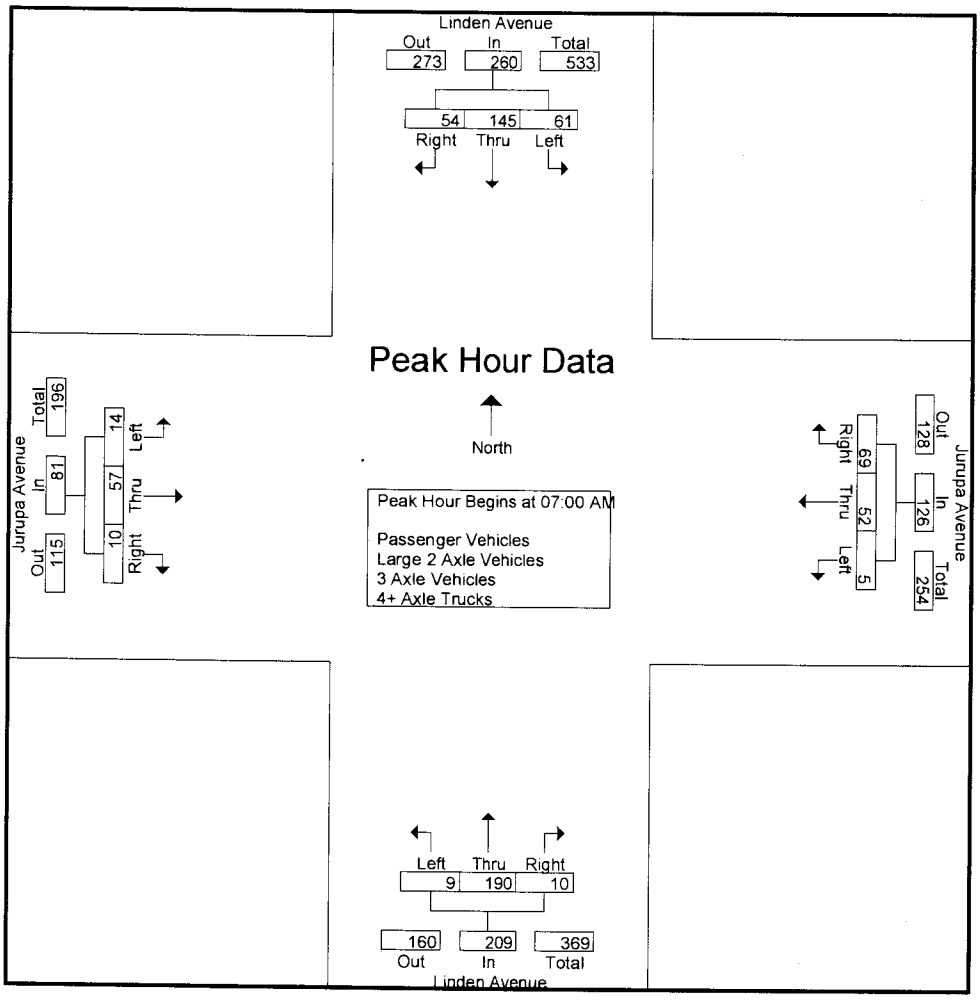
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	29	6	50	2	9	19	30	1	55	1	57	2	10	2	14	151
07:15 AM	12	50	15	77	0	11	29	40	1	68	3	72	7	18	1	26	215
07:30 AM	28	55	30	113	2	23	17	42	5	56	6	67	4	13	2	19	241
07:45 AM	6	11	3	20	1	9	4	14	2	11	0	13	1	16	5	22	69
Total	61	145	54	260	5	52	69	126	9	190	10	209	14	57	10	81	676
08:00 AM	7	6	2	15	0	17	5	22	4	8	2	14	0	14	2	16	67
08:15 AM	5	3	2	10	1	9	8	18	1	7	1	9	2	12	1	15	52
08:30 AM	5	5	2	12	0	12	4	16	3	7	1	11	0	19	5	24	63
08:45 AM	2	7	4	13	1	22	5	28	4	9	2	15	1	20	4	25	81
Total	19	21	10	50	2	60	22	84	12	31	6	49	3	65	12	80	263
Grand Total	80	166	64	310	7	112	91	210	21	221	16	258	17	122	22	161	939
Apprch %	25.8	53.5	20.6		3.3	53.3	43.3		8.1	85.7	6.2		10.6	75.8	13.7		
Total %	8.5	17.7	6.8	33	0.7	11.9	9.7	22.4	2.2	23.5	1.7	27.5	1.8	13	2.3	17.1	
Passenger Vehicles	78	164	63	305	7	106	83	196	21	217	14	252	17	118	22	157	910
% Passenger Vehicles	97.5	98.8	98.4	98.4	100	94.6	91.2	93.3	100	98.2	87.5	97.7	100	96.7	100	97.5	96.9
Large 2 Axle Vehicles	1	2	1	4	0	4	7	11	0	4	1	5	0	3	0	3	23
% Large 2 Axle Vehicles	1.2	1.2	1.6	1.3	0	3.6	7.7	5.2	0	1.8	6.2	1.9	0	2.5	0	1.9	2.4
3 Axle Vehicles	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
% 3 Axle Vehicles	0	0	0	0	0	1.8	0	1	0	0	6.2	0.4	0	0	0	0	0.3
4+ Axle Trucks	1	0	0	1	0	0	1	1	0	0	0	0	0	1	0	1	3
% 4+ Axle Trucks	1.2	0	0	0.3	0	0	1.1	0.5	0	0	0	0	0	0.8	0	0.6	0.3

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	15	29	6	50	**2**	9	19	30	1	55	1	57	2	10	2	14	151
07:15 AM	12	50	15	77	0	11	**29**	40	1	**68**	3	**72**	**7**	**18**	1	**26**	215
07:30 AM	**28**	**55**	**30**	**113**	2	**23**	17	**42**	**5**	56	**6**	67	4	13	2	19	**241**
07:45 AM	6	11	3	20	1	9	4	14	2	11	0	13	1	16	**5**	22	69
Total Volume	61	145	54	260	5	52	69	126	9	190	10	209	14	57	10	81	676
% App. Total	23.5	55.8	20.8		4	41.3	54.8		4.3	90.9	4.8		17.3	70.4	12.3		
PHF	.545	.659	.450	.575	.625	.565	.595	.750	.450	.699	.417	.726	.500	.792	.500	.779	.701

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	15	29	6	50	**2**	9	19	30	1	55	1	57	**7**	**18**	1	**26**
+15 mins.	12	50	15	77	0	11	**29**	40	1	**68**	3	**72**	4	13	2	19
+30 mins.	**28**	**55**	**30**	**113**	2	**23**	17	**42**	**5**	56	**6**	67	1	16	**5**	22
+45 mins.	6	11	3	20	1	9	4	14	2	11	0	13	0	14	2	16
Total Volume	61	145	54	260	5	52	69	126	9	190	10	209	12	61	10	83
% App. Total	23.5	55.8	20.8		4	41.3	54.8		4.3	90.9	4.8		14.5	73.5	12	
PHF	.545	.659	.450	.575	.625	.565	.595	.750	.450	.699	.417	.726	.429	.847	.500	.798

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

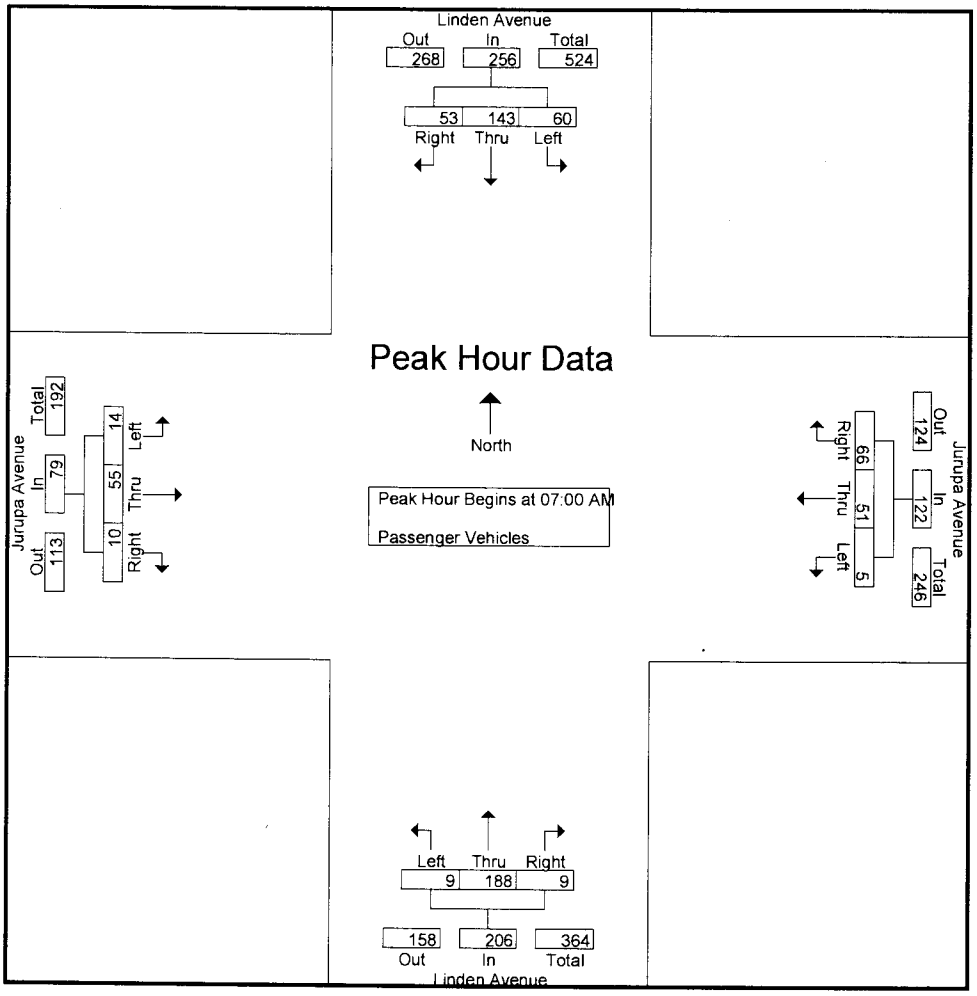
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	29	6	50	2	9	18	29	1	54	1	56	2	10	2	14	149
07:15 AM	12	50	15	77	0	10	28	38	1	68	3	72	7	18	1	26	213
07:30 AM	27	55	30	112	2	23	16	41	5	56	5	66	4	12	2	18	237
07:45 AM	6	9	2	17	1	9	4	14	2	10	0	12	1	15	5	21	64
Total	60	143	53	256	5	51	66	122	9	188	9	206	14	55	10	79	663
08:00 AM	7	6	2	15	0	16	5	21	4	8	1	13	0	14	2	16	65
08:15 AM	4	3	2	9	1	9	5	15	1	5	1	7	2	12	1	15	46
08:30 AM	5	5	2	12	0	12	3	15	3	7	1	11	0	17	5	22	60
08:45 AM	2	7	4	13	1	18	4	23	4	9	2	15	1	20	4	25	76
Total	18	21	10	49	2	55	17	74	12	29	5	46	3	63	12	78	247
Grand Total	78	164	63	305	7	106	83	196	21	217	14	252	17	118	22	157	910
Apprch %	25.6	53.8	20.7		3.6	54.1	42.3		8.3	86.1	5.6		10.8	75.2	14		
Total %	8.6	18	6.9	33.5	0.8	11.6	9.1	21.5	2.3	23.8	1.5	27.7	1.9	13	2.4	17.3	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	15	29	6	50	**2**	9	18	29	1	54	1	56	2	10	2	14	149
07:15 AM	12	50	15	77	0	10	**28**	38	1	**68**	3	**72**	**7**	**18**	1	**26**	213
07:30 AM	**27**	**55**	**30**	**112**	2	**23**	16	**41**	**5**	56	**5**	66	**4**	12	2	18	**237**
07:45 AM	6	9	2	17	1	9	4	14	2	10	0	12	1	15	**5**	21	64
Total Volume	60	143	53	256	5	51	66	122	9	188	9	206	14	55	10	79	663
% App. Total	23.4	55.9	20.7		4.1	41.8	54.1		4.4	91.3	4.4		17.7	69.6	12.7		
PHF	.556	.650	.442	.571	.625	.554	.589	.744	.450	.691	.450	.715	.500	.764	.500	.760	.699

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	15	29	6	50	**2**	9	18	29	1	54	1	56	2	10	2	14
+15 mins.	12	50	15	77	0	10	**28**	38	1	**68**	3	**72**	**7**	**18**	1	**26**
+30 mins.	**27**	**55**	**30**	**112**	2	**23**	16	**41**	**5**	56	**5**	66	4	12	2	18
+45 mins.	6	9	2	17	1	9	4	14	2	10	0	12	1	15	**5**	21
Total Volume	60	143	53	256	5	51	66	122	9	188	9	206	14	55	10	79
% App. Total	23.4	55.9	20.7		4.1	41.8	54.1		4.4	91.3	4.4		17.7	69.6	12.7	
PHF	.556	.650	.442	.571	.625	.554	.589	.744	.450	.691	.450	.715	.500	.764	.500	.760

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

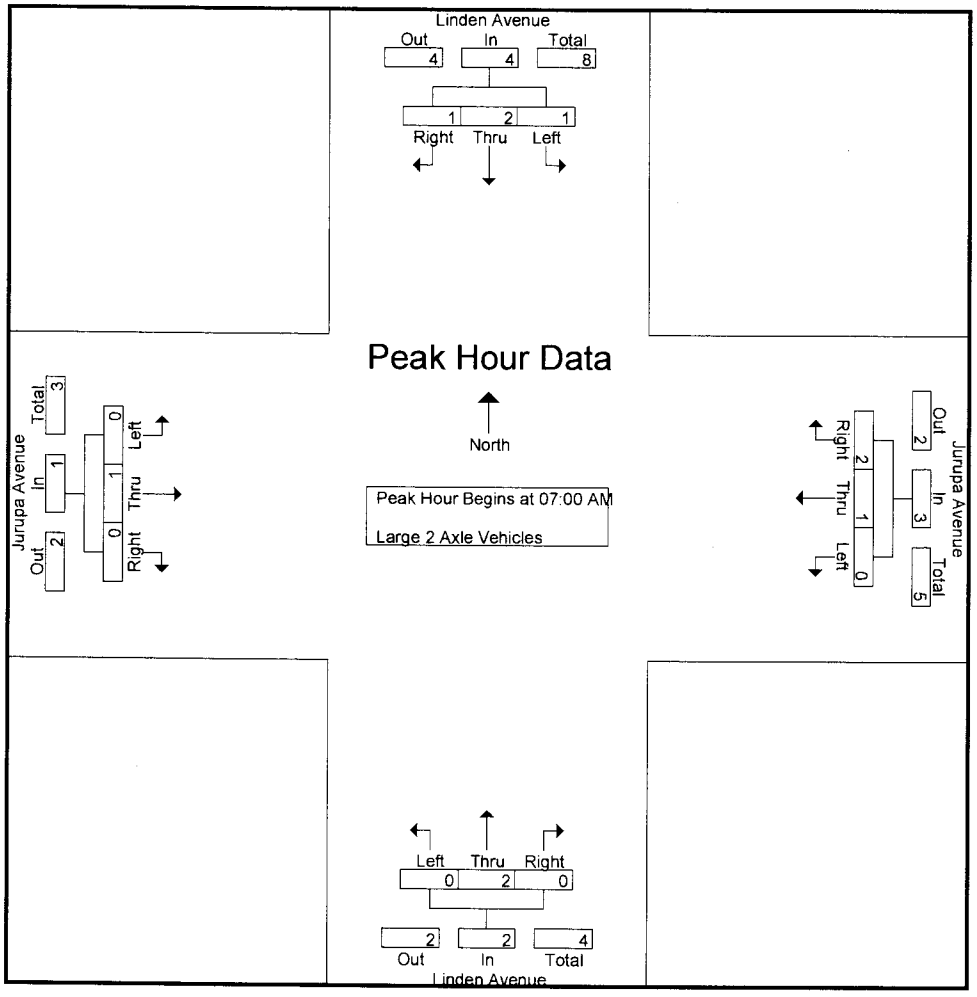
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
07:30 AM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
07:45 AM	0	2	1	3	0	0	0	0	0	1	0	1	0	1	0	1	5
Total	1	2	1	4	0	1	2	3	0	2	0	2	0	1	0	1	10
08:00 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	3	3	0	2	0	2	0	0	0	0	5
08:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	3
08:45 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	3	5	8	0	2	1	3	0	2	0	2	13
Grand Total	1	2	1	4	0	4	7	11	0	4	1	5	0	3	0	3	23
Apprch %	25	50	25		0	36.4	63.6		0	80	20		0	100	0		
Total %	4.3	8.7	4.3	17.4	0	17.4	30.4	47.8	0	17.4	4.3	21.7	0	13	0	13	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
07:15 AM	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0	0	0	0	0	2
07:30 AM	**1**	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
07:45 AM	0	**2**	**1**	**3**	0	0	0	0	0	1	0	1	0	**1**	0	**1**	**5**
Total Volume	1	2	1	4	0	1	2	3	0	2	0	2	0	1	0	1	10
% App. Total	25	50	25		0	33.3	66.7		0	100	0		0	100	0		
PHF	.250	.250	.250	.333	.000	.250	.500	.375	.000	.500	.000	.500	.000	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0	0	0	0	0
+30 mins.	**1**	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
+45 mins.	0	**2**	**1**	**3**	0	0	0	0	0	1	0	1	0	**1**	0	**1**
Total Volume	1	2	1	4	0	1	2	3	0	2	0	2	0	1	0	1
% App. Total	25	50	25		0	33.3	66.7		0	100	0		0	100	0	
PHF	.250	.250	.250	.333	.000	.250	.500	.375	.000	.500	.000	.500	.000	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

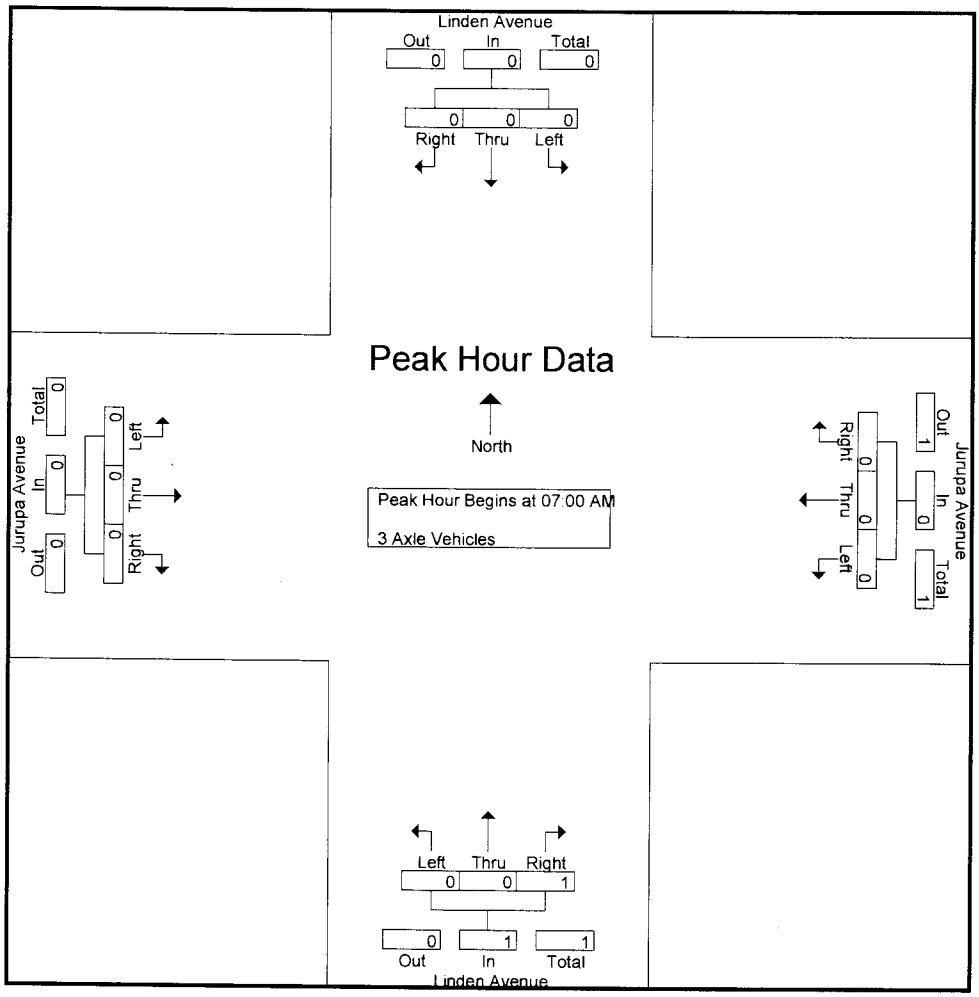
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
Apprch %	0	0	0		0	100	0		0	0	100		0	0	0		
Total %	0	0	0	0	0	66.7	0	66.7	0	0	33.3	33.3	0	0	0	0	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

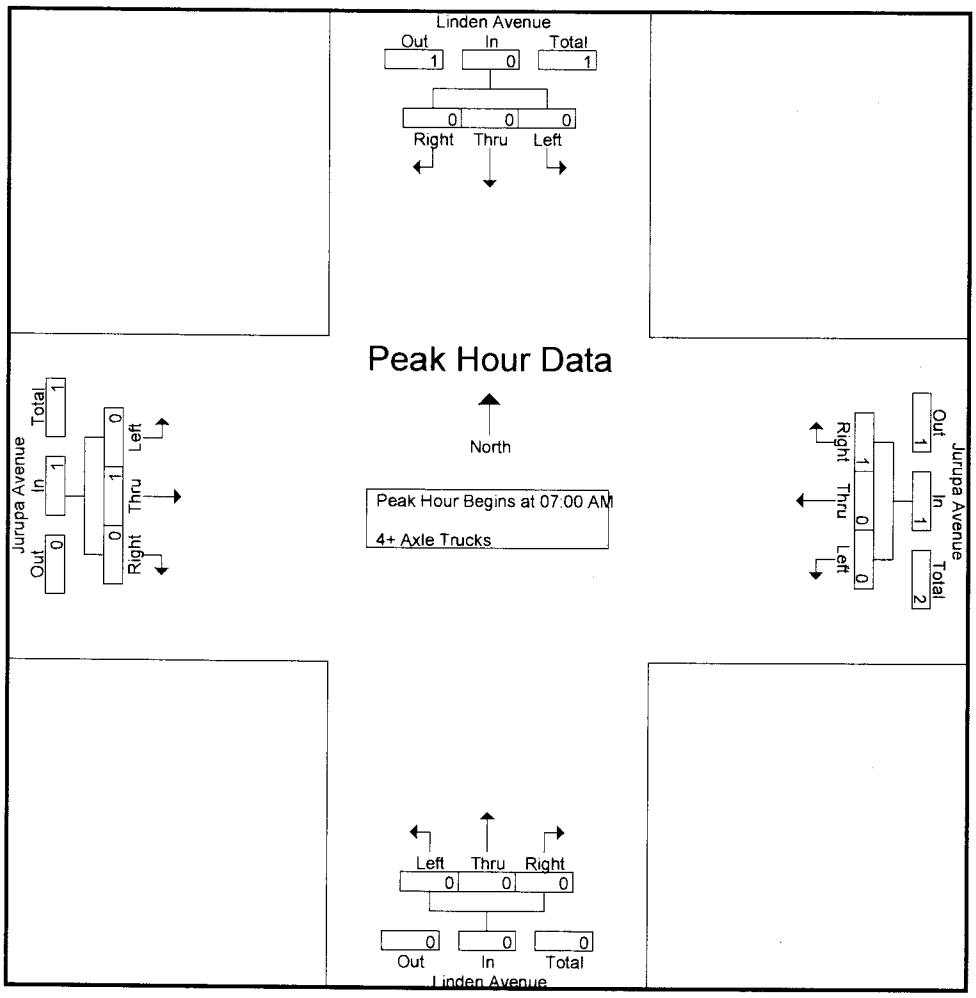
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	1	0	0	1	1	0	0	0	0	0	1	0	1	3
Apprch %	100	0	0		0	0	100		0	0	0		0	100	0		
Total %	33.3	0	0	33.3	0	0	33.3	33.3	0	0	0	0	0	33.3	0	33.3	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
% App. Total	0	0	0		0	0	100		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

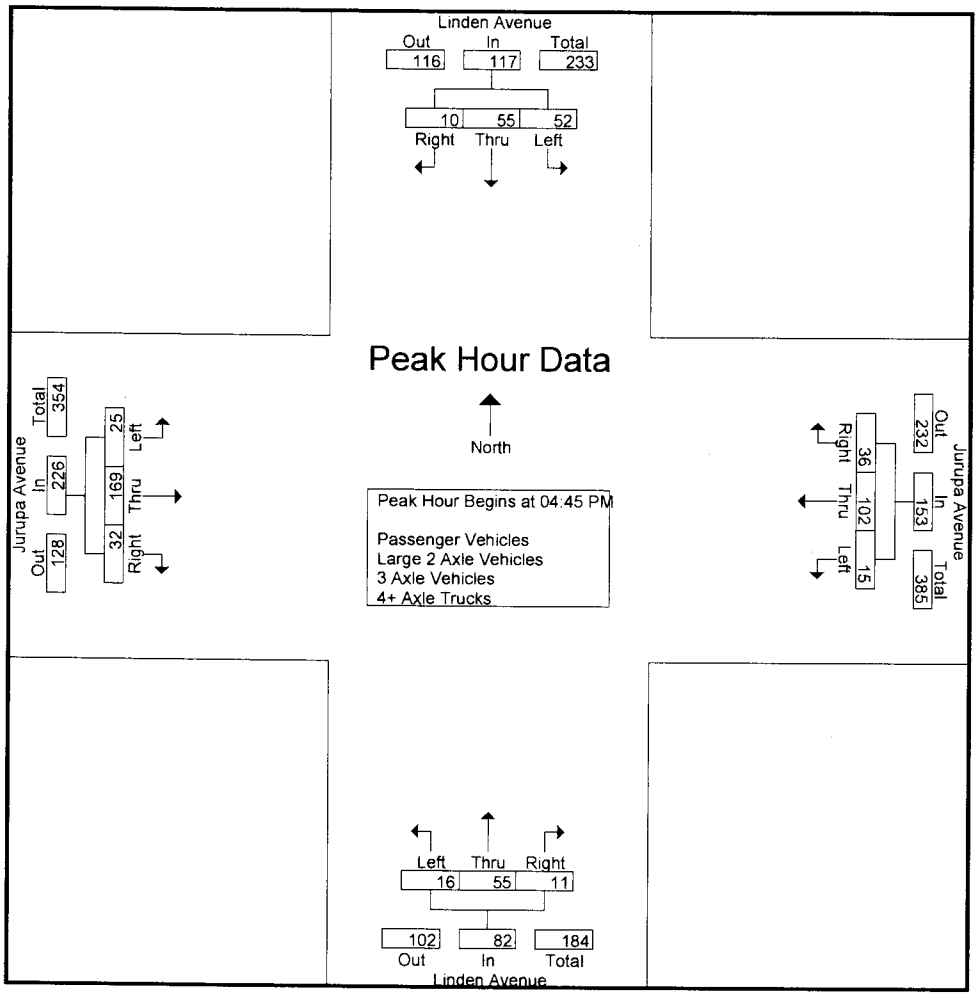
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	27	2	43	4	15	8	27	2	10	3	15	6	30	5	41	126
04:15 PM	6	14	2	22	3	24	13	40	4	13	0	17	8	54	7	69	148
04:30 PM	11	13	3	27	1	18	5	24	4	17	2	23	9	32	7	48	122
04:45 PM	16	9	0	25	2	31	9	42	3	11	7	21	4	40	10	54	142
Total	47	63	7	117	10	88	35	133	13	51	12	76	27	156	29	212	538
05:00 PM	13	16	2	31	7	30	10	47	4	15	1	20	3	46	5	54	152
05:15 PM	10	15	5	30	3	19	11	33	6	14	2	22	10	47	11	68	153
05:30 PM	13	15	3	31	3	22	6	31	3	15	1	19	8	36	6	50	131
05:45 PM	11	13	0	24	4	21	2	27	4	11	4	19	8	37	5	50	120
Total	47	59	10	116	17	92	29	138	17	55	8	80	29	166	27	222	556
Grand Total	94	122	17	233	27	180	64	271	30	106	20	156	56	322	56	434	1094
Apprch %	40.3	52.4	7.3		10	66.4	23.6		19.2	67.9	12.8		12.9	74.2	12.9		
Total %	8.6	11.2	1.6	21.3	2.5	16.5	5.9	24.8	2.7	9.7	1.8	14.3	5.1	29.4	5.1	39.7	
Passenger Vehicles	92	121	17	230	26	177	62	265	30	106	20	156	53	315	56	424	1075
% Passenger Vehicles	97.9	99.2	100	98.7	96.3	98.3	96.9	97.8	100	100	100	100	94.6	97.8	100	97.7	98.3
Large 2 Axle Vehicles	2	0	0	2	1	0	1	2	0	0	0	0	2	4	0	6	10
% Large 2 Axle Vehicles	2.1	0	0	0.9	3.7	0	1.6	0.7	0	0	0	0	3.6	1.2	0	1.4	0.9
3 Axle Vehicles	0	1	0	1	0	3	0	3	0	0	0	0	0	2	0	2	6
% 3 Axle Vehicles	0	0.8	0	0.4	0	1.7	0	1.1	0	0	0	0	0	0.6	0	0.5	0.5
4+ Axle Trucks	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	2	3
% 4+ Axle Trucks	0	0	0	0	0	0	1.6	0.4	0	0	0	0	1.8	0.3	0	0.5	0.3

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**16**	9	0	25	2	**31**	9	42	3	11	**7**	21	4	40	10	54	142
05:00 PM	13	**16**	2	**31**	**7**	30	10	**47**	4	**15**	1	20	3	46	5	54	152
05:15 PM	10	15	**5**	30	3	19	**11**	33	**6**	14	2	**22**	**10**	**47**	**11**	**68**	**153**
05:30 PM	13	15	3	31	3	22	6	31	3	15	1	19	8	36	6	50	131
Total Volume	52	55	10	117	15	102	36	153	16	55	11	82	25	169	32	226	578
% App. Total	44.4	47	8.5		9.8	66.7	23.5		19.5	67.1	13.4		11.1	74.8	14.2		
PHF	.813	.859	.500	.944	.536	.823	.818	.814	.667	.917	.393	.932	.625	.899	.727	.831	.944

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:30 PM				04:45 PM			
+0 mins.	14	**27**	2	**43**	3	24	**13**	40	4	**17**	2	**23**	4	40	10	54
+15 mins.	6	14	2	22	1	18	5	24	3	11	**7**	21	3	46	5	54
+30 mins.	11	13	**3**	27	2	**31**	9	42	4	15	1	20	**10**	**47**	**11**	**68**
+45 mins.	**16**	9	0	25	**7**	30	10	**47**	**6**	14	2	22	8	36	6	50
Total Volume	47	63	7	117	13	103	37	153	17	57	12	86	25	169	32	226
% App. Total	40.2	53.8	6		8.5	67.3	24.2		19.8	66.3	14		11.1	74.8	14.2	
PHF	.734	.583	.583	.680	.464	.831	.712	.814	.708	.838	.429	.935	.625	.899	.727	.831

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

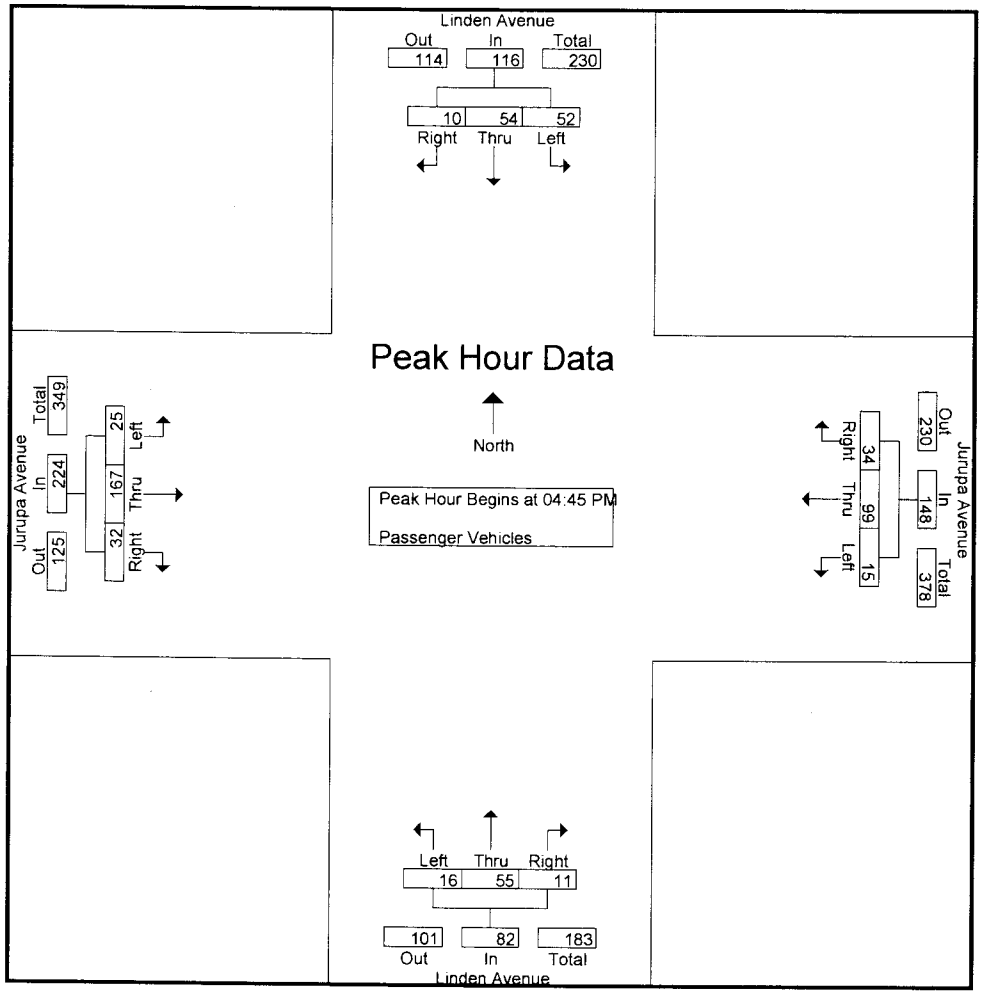
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	27	2	41	4	15	8	27	2	10	3	15	6	29	5	40	123
04:15 PM	6	14	2	22	3	24	13	40	4	13	0	17	6	53	7	66	145
04:30 PM	11	13	3	27	1	18	5	24	4	17	2	23	8	30	7	45	119
04:45 PM	16	9	0	25	2	29	8	39	3	11	7	21	4	39	10	53	138
Total	45	63	7	115	10	86	34	130	13	51	12	76	24	151	29	204	525
05:00 PM	13	16	2	31	7	30	10	47	4	15	1	20	3	46	5	54	152
05:15 PM	10	15	5	30	3	19	11	33	6	14	2	22	10	47	11	68	153
05:30 PM	13	14	3	30	3	21	5	29	3	15	1	19	8	35	6	49	127
05:45 PM	11	13	0	24	3	21	2	26	4	11	4	19	8	36	5	49	118
Total	47	58	10	115	16	91	28	135	17	55	8	80	29	164	27	220	550
Grand Total	92	121	17	230	26	177	62	265	30	106	20	156	53	315	56	424	1075
Apprch %	40	52.6	7.4		9.8	66.8	23.4		19.2	67.9	12.8		12.5	74.3	13.2		
Total %	8.6	11.3	1.6	21.4	2.4	16.5	5.8	24.7	2.8	9.9	1.9	14.5	4.9	29.3	5.2	39.4	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**16**	9	0	25	2	29	8	39	3	11	7	21	4	39	10	53	138
05:00 PM	13	**16**	2	**31**	**7**	**30**	10	**47**	**4**	**15**	1	20	3	46	5	54	152
05:15 PM	10	15	**5**	30	3	19	**11**	33	**6**	14	2	**22**	**10**	**47**	**11**	**68**	**153**
05:30 PM	13	14	3	30	3	21	5	29	3	15	1	19	8	35	6	49	127
Total Volume	52	54	10	116	15	99	34	148	16	55	11	82	25	167	32	224	570
% App. Total	44.8	46.6	8.6		10.1	66.9	23		19.5	67.1	13.4		11.2	74.6	14.3		
PHF	.813	.844	.500	.935	.536	.825	.773	.787	.667	.917	.393	.932	.625	.888	.727	.824	.931

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	**16**	9	0	25	2	29	8	39	3	11	**7**	21	4	39	10	53
+15 mins.	13	**16**	2	**31**	**7**	**30**	10	**47**	4	**15**	1	20	3	46	5	54
+30 mins.	10	15	**5**	30	3	19	**11**	33	**6**	14	2	**22**	**10**	**47**	**11**	**68**
+45 mins.	13	14	3	30	3	21	5	29	3	15	1	19	8	35	6	49
Total Volume	52	54	10	116	15	99	34	148	16	55	11	82	25	167	32	224
% App. Total	44.8	46.6	8.6		10.1	66.9	23		19.5	67.1	13.4		11.2	74.6	14.3	
PHF	.813	.844	.500	.935	.536	.825	.773	.787	.667	.917	.393	.932	.625	.888	.727	.824

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

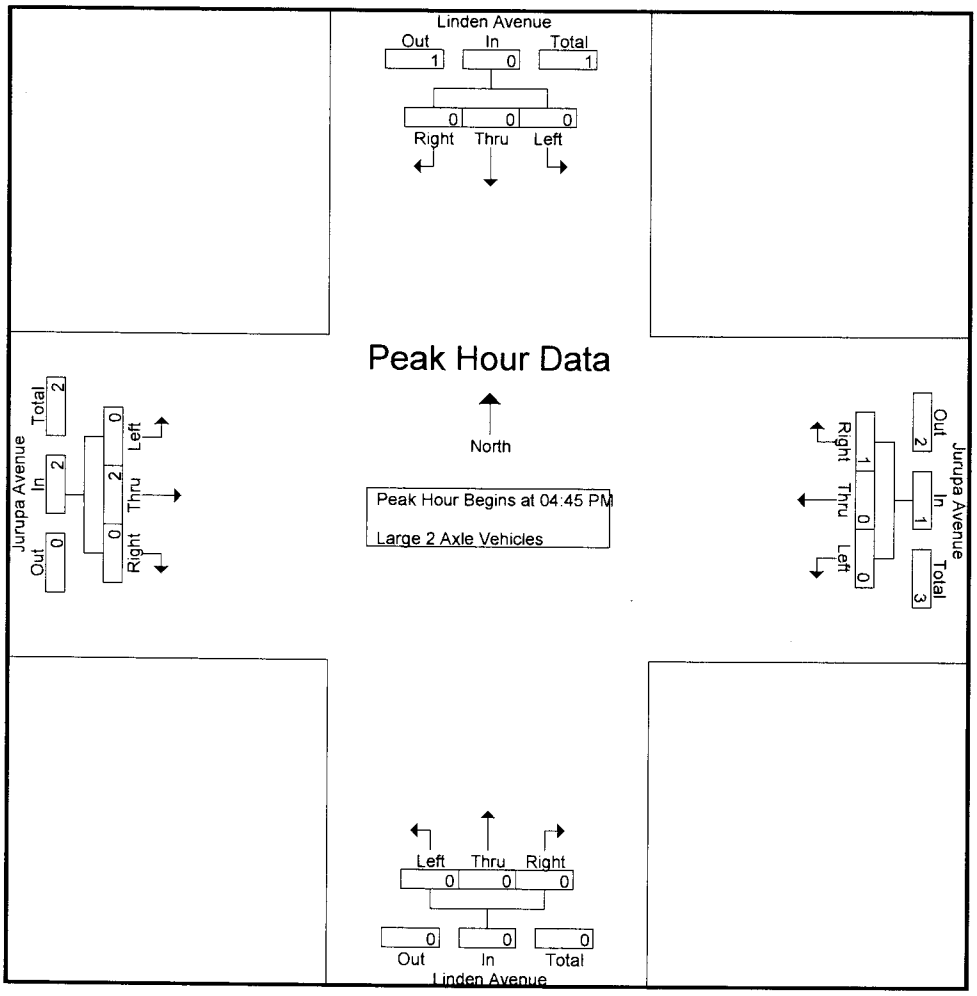
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	2	0	0	2	0	0	0	0	0	0	0	0	2	3	0	5	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	1	2	0	0	0	0	0	1	0	1	3
Grand Total	2	0	0	2	1	0	1	2	0	0	0	0	2	4	0	6	10
Apprch %	100	0	0		50	0	50		0	0	0		33.3	66.7	0		
Total %	20	0	0	20	10	0	10	20	0	0	0	0	20	40	0	60	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	3
% App. Total	0	0	0		0	0	100		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.500	.000	.500	.375

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2
% App. Total	0	0	0		0	0	100		0	0	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

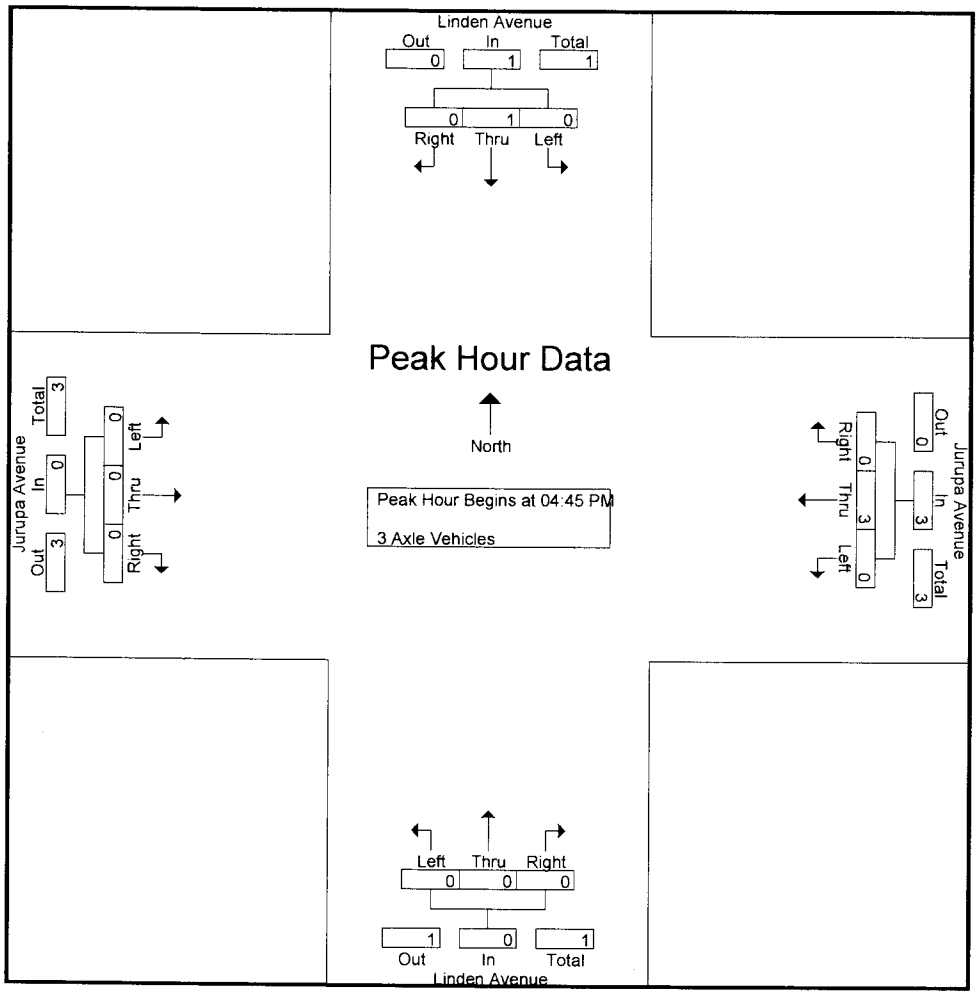
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Grand Total	0	1	0	1	0	3	0	3	0	0	0	0	0	2	0	2	6
Apprch %	0	100	0		0	100	0		0	0	0		0	100	0		
Total %	0	16.7	0	16.7	0	50	0	50	0	0	0	0	0	33.3	0	33.3	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	**2**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	**1**	0	**1**	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Volume	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.375	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	1	0	1	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.375	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

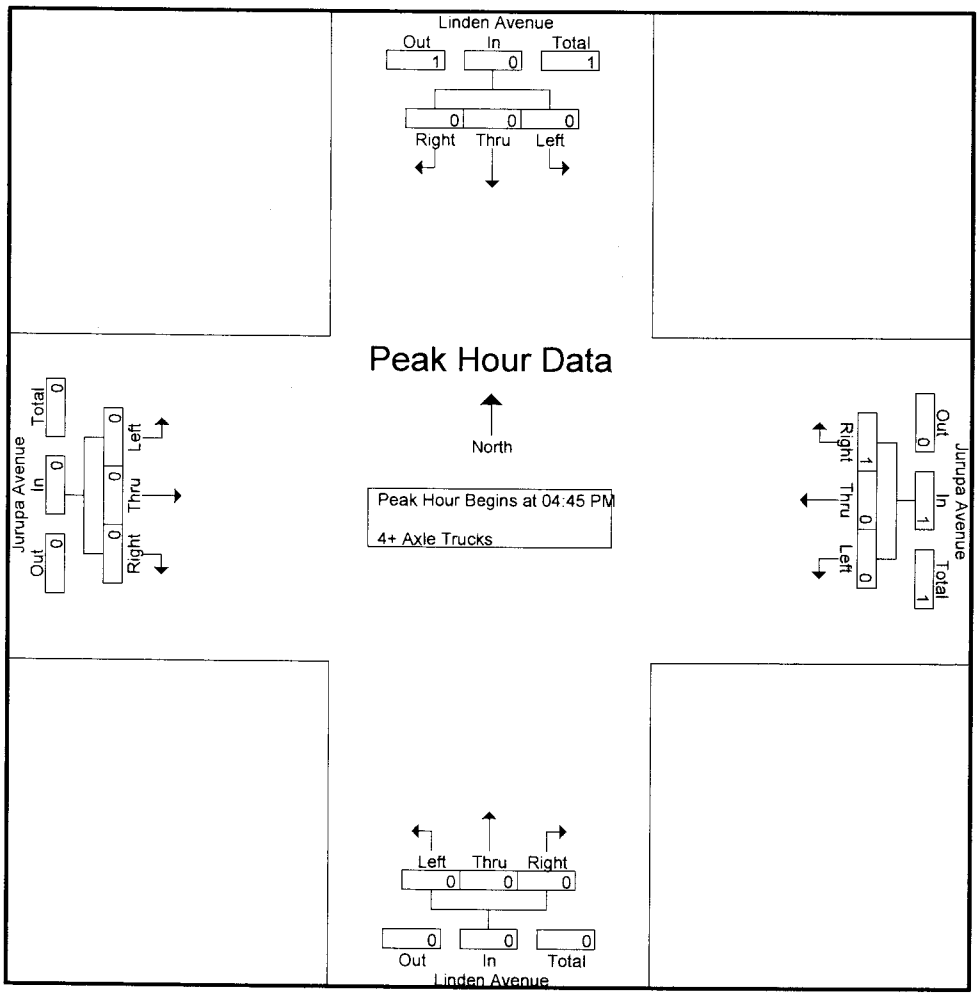
	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	2	3
Apprch %	0	0	0		0	0	100		0	0	0		50	50	0		
Total %	0	0	0	0	0	0	33.3	33.3	0	0	0	0	33.3	33.3	0	66.7	

	Linden Avenue Southbound				Jurupa Avenue Westbound				Linden Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Linen Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBLIJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

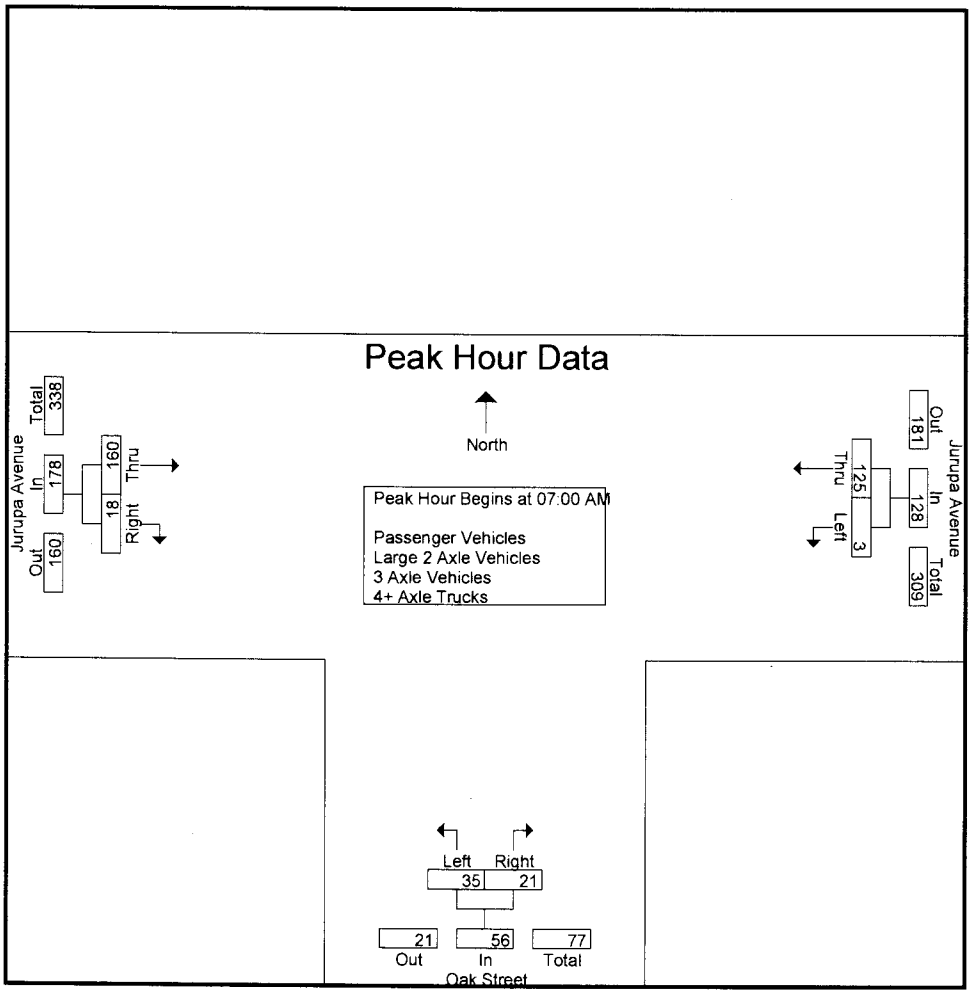
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	38	38	11	2	13	42	4	46	97
07:15 AM	1	40	41	19	7	26	46	6	52	119
07:30 AM	2	27	29	4	10	14	43	5	48	91
07:45 AM	0	20	20	1	2	3	29	3	32	55
Total	3	125	128	35	21	56	160	18	178	362
08:00 AM	1	18	19	1	8	9	24	1	25	53
08:15 AM	0	14	14	1	10	11	14	0	14	39
08:30 AM	1	20	21	0	3	3	13	2	15	39
08:45 AM	0	8	8	1	4	5	16	1	17	30
Total	2	60	62	3	25	28	67	4	71	161
Grand Total	5	185	190	38	46	84	227	22	249	523
Apprch %	2.6	97.4		45.2	54.8		91.2	8.8		
Total %	1	35.4	36.3	7.3	8.8	16.1	43.4	4.2	47.6	
Passenger Vehicles	5	176	181	37	45	82	220	21	241	504
% Passenger Vehicles	100	95.1	95.3	97.4	97.8	97.6	96.9	95.5	96.8	96.4
Large 2 Axle Vehicles	0	8	8	1	1	2	3	1	4	14
% Large 2 Axle Vehicles	0	4.3	4.2	2.6	2.2	2.4	1.3	4.5	1.6	2.7
3 Axle Vehicles	0	1	1	0	0	0	3	0	3	4
% 3 Axle Vehicles	0	0.5	0.5	0	0	0	1.3	0	1.2	0.8
4+ Axle Trucks	0	0	0	0	0	0	1	0	1	1
% 4+ Axle Trucks	0	0	0	0	0	0	0.4	0	0.4	0.2

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	38	38	11	2	13	42	4	46	97
07:15 AM	1	**40**	**41**	**19**	7	**26**	**46**	**6**	**52**	**119**
07:30 AM	**2**	27	29	4	**10**	14	43	5	48	91
07:45 AM	0	20	20	1	2	3	29	3	32	55
Total Volume	3	125	128	35	21	56	160	18	178	362
% App. Total	2.3	97.7		62.5	37.5		89.9	10.1		
PHF	.375	.781	.780	.461	.525	.538	.870	.750	.856	.761

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	38	38	11	2	13	42	4	46
+15 mins.	1	**40**	**41**	**19**	7	**26**	**46**	**6**	**52**
+30 mins.	**2**	27	29	4	**10**	14	43	5	48
+45 mins.	0	20	20	1	2	3	29	3	32
Total Volume	3	125	128	35	21	56	160	18	178
% App. Total	2.3	97.7		62.5	37.5		89.9	10.1	
PHF	.375	.781	.780	.461	.525	.538	.870	.750	.856

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

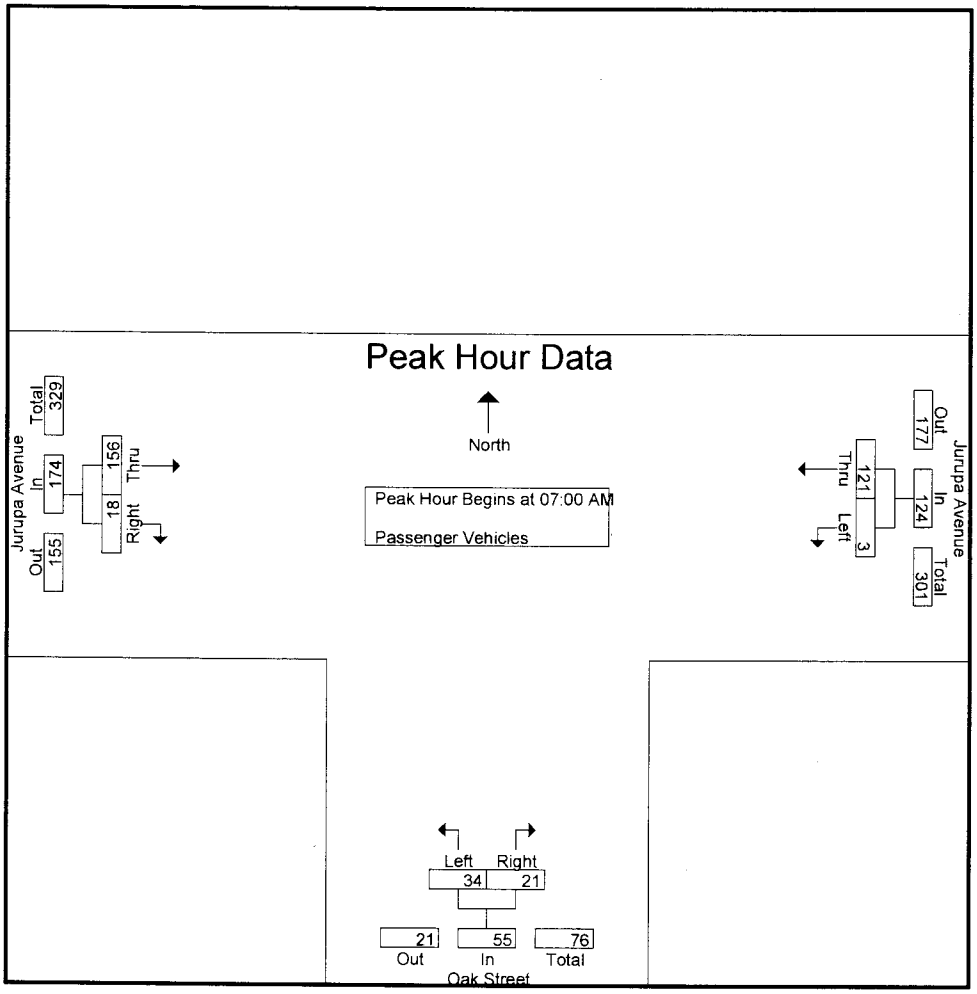
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	37	37	11	2	13	40	4	44	94
07:15 AM	1	38	39	18	7	25	46	6	52	116
07:30 AM	2	27	29	4	10	14	41	5	46	89
07:45 AM	0	19	19	1	2	3	29	3	32	54
Total	3	121	124	34	21	55	156	18	174	353
08:00 AM	1	16	17	1	8	9	22	1	23	49
08:15 AM	0	13	13	1	9	10	14	0	14	37
08:30 AM	1	18	19	0	3	3	12	1	13	35
08:45 AM	0	8	8	1	4	5	16	1	17	30
Total	2	55	57	3	24	27	64	3	67	151
Grand Total	5	176	181	37	45	82	220	21	241	504
Apprch %	2.8	97.2		45.1	54.9		91.3	8.7		
Total %	1	34.9	35.9	7.3	8.9	16.3	43.7	4.2	47.8	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	37	37	11	2	13	40	4	44	94
07:15 AM	1	**38**	**39**	**18**	7	**25**	**46**	**6**	**52**	**116**
07:30 AM	**2**	27	29	4	**10**	14	41	5	46	89
07:45 AM	0	19	19	1	2	3	29	3	32	54
Total Volume	3	121	124	34	21	55	156	18	174	353
% App. Total	2.4	97.6		61.8	38.2		89.7	10.3		
PHF	.375	.796	.795	.472	.525	.550	.848	.750	.837	.761

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	37	37	11	2	13	40	4	44
+15 mins.	1	**38**	**39**	**18**	7	**25**	**46**	**6**	**52**
+30 mins.	**2**	27	29	4	**10**	14	41	5	46
+45 mins.	0	19	19	1	2	3	29	3	32
Total Volume	3	121	124	34	21	55	156	18	174
% App. Total	2.4	97.6		61.8	38.2		89.7	10.3	
PHF	.375	.796	.795	.472	.525	.550	.848	.750	.837

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

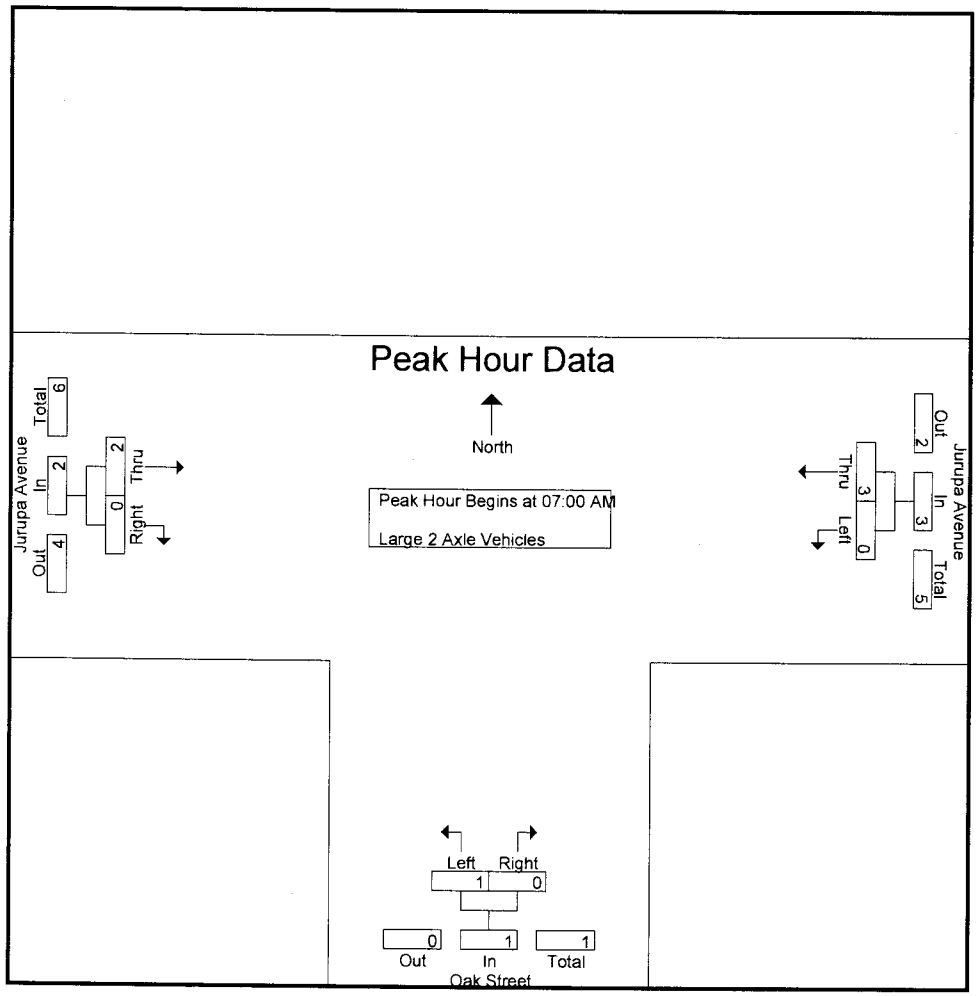
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	0	0	0	2	0	2	3
07:15 AM	0	1	1	1	0	1	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	1	0	0	0	0	0	0	1
Total	0	3	3	1	0	1	2	0	2	6
08:00 AM	0	2	2	0	0	0	0	0	0	2
08:15 AM	0	1	1	0	1	1	0	0	0	2
08:30 AM	0	2	2	0	0	0	1	1	2	4
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	5	5	0	1	1	1	1	2	8
Grand Total	0	8	8	1	1	2	3	1	4	14
Apprch %	0	100		50	50		75	25		
Total %	0	57.1	57.1	7.1	7.1	14.3	21.4	7.1	28.6	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	**1**	**1**	0	0	0	**2**	0	**2**	**3**
07:15 AM	0	1	1	**1**	0	**1**	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	3	3	1	0	1	2	0	2	6
% App. Total	0	100		100	0		100	0		
PHF	.000	.750	.750	.250	.000	.250	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	**1**	**1**	0	0	0	**2**	0	**2**
+15 mins.	0	1	1	**1**	0	**1**	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	3	3	1	0	1	2	0	2
% App. Total	0	100		100	0		100	0	
PHF	.000	.750	.750	.250	.000	.250	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

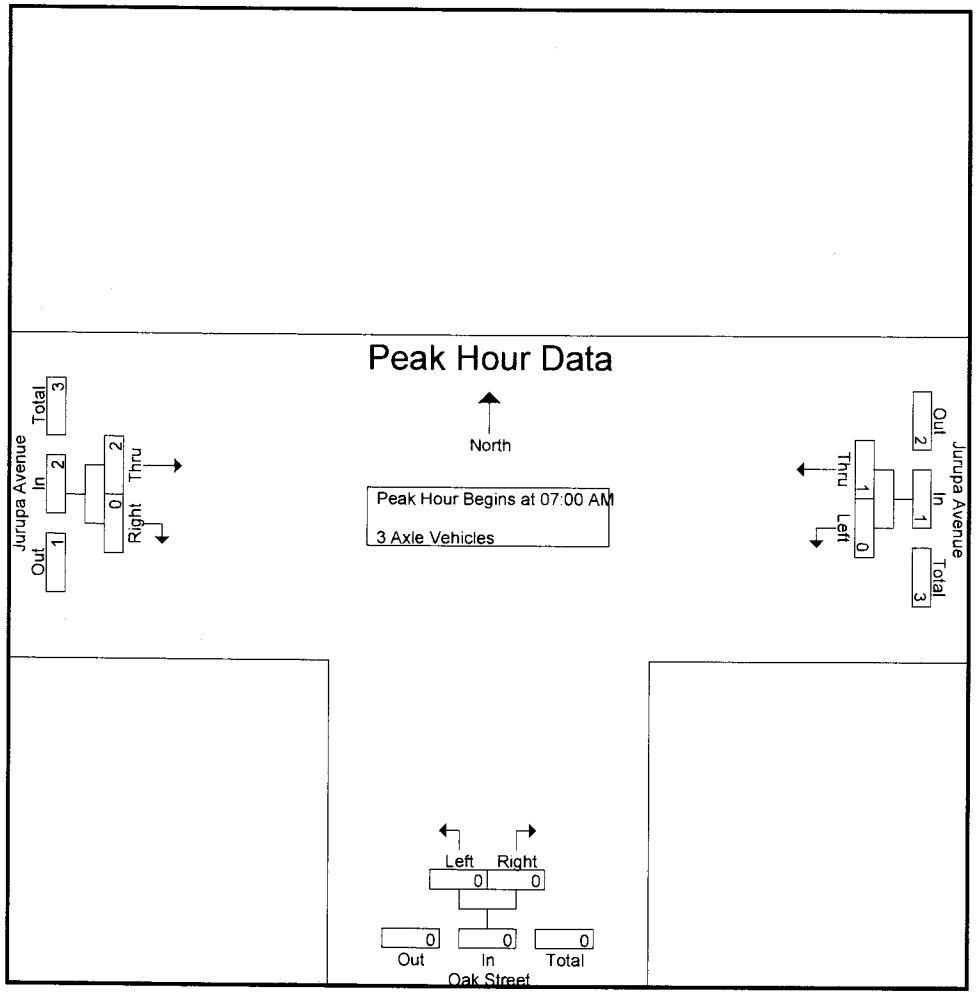
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	3	0	3	4
Apprch %	0	100		0	0		100	0		
Total %	0	25	25	0	0	0	75	0	75	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	**1**	**1**	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	**2**	0	**2**	**2**
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	2	0	2	3
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250	.375

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	**2**	0	**2**
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	2	0	2
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

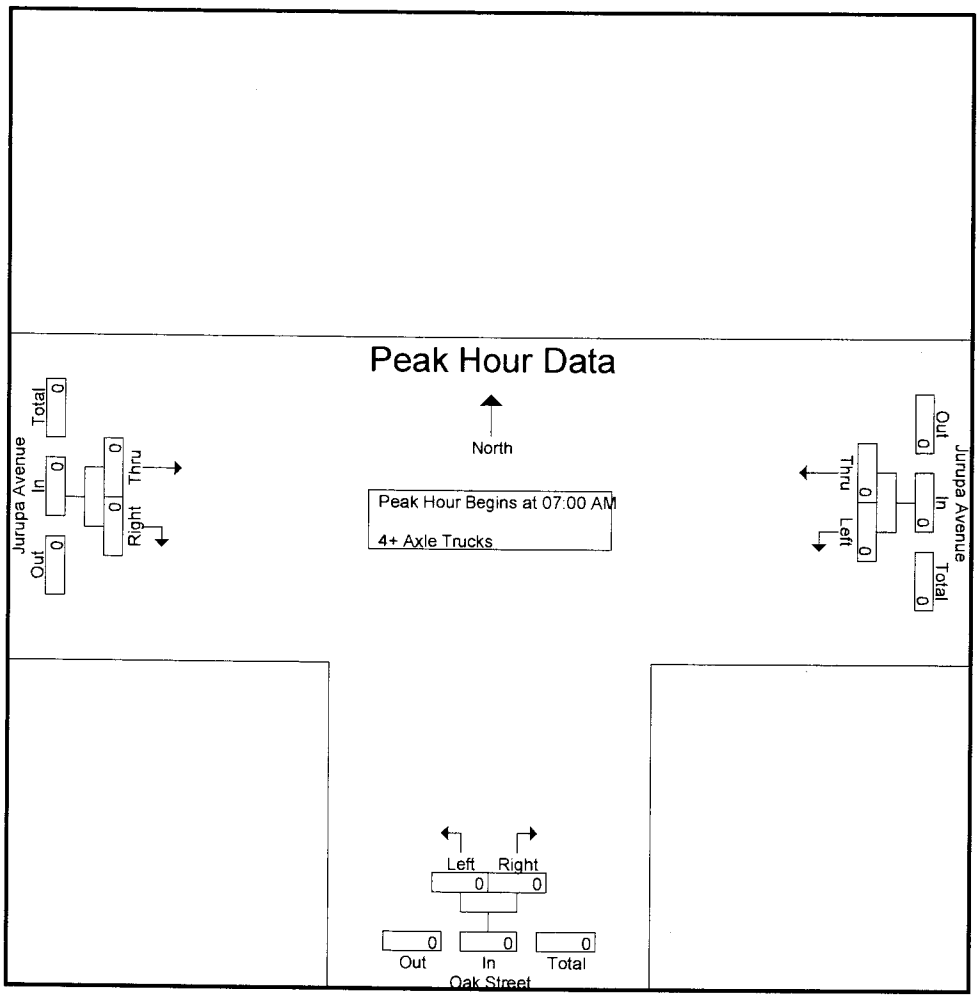
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

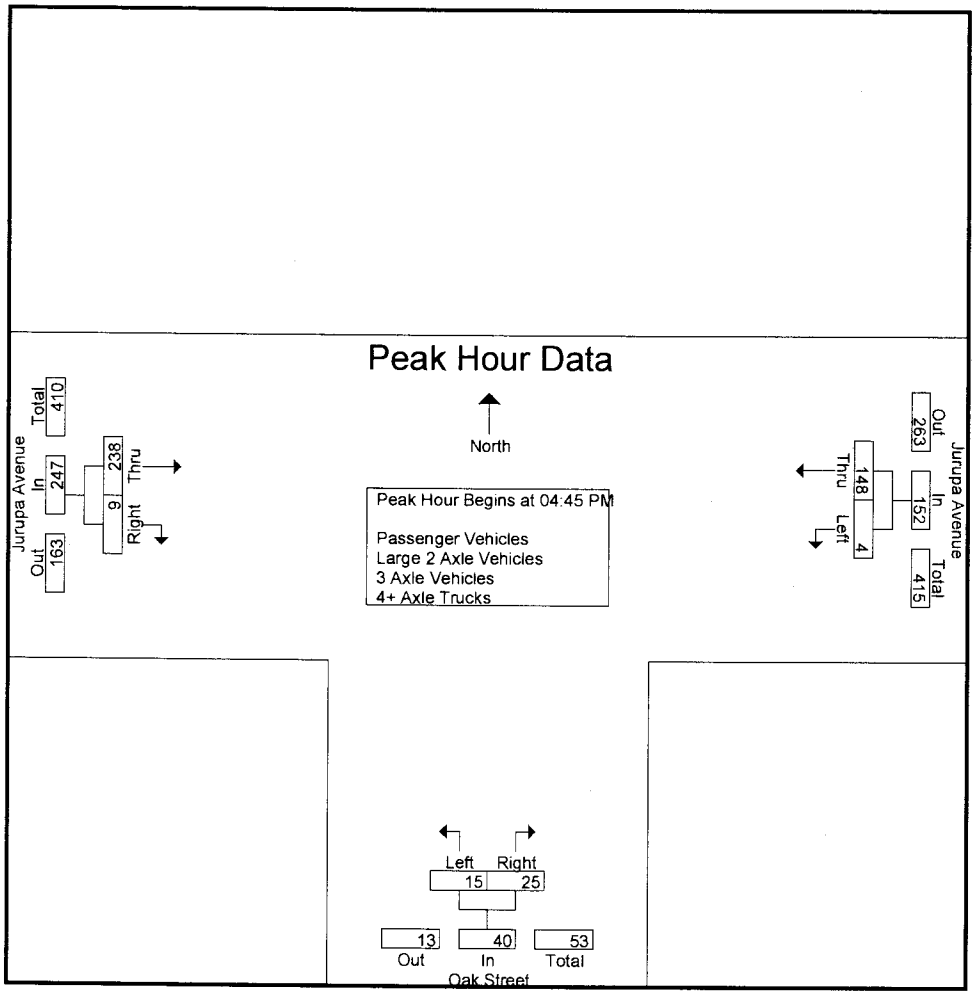
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	5	21	26	2	3	5	60	1	61	92
04:15 PM	1	29	30	6	12	18	46	1	47	95
04:30 PM	4	24	28	3	6	9	54	2	56	93
04:45 PM	2	45	47	1	8	9	64	1	65	121
Total	12	119	131	12	29	41	224	5	229	401
05:00 PM	0	42	42	3	7	10	54	2	56	108
05:15 PM	0	41	41	8	5	13	59	3	62	116
05:30 PM	2	20	22	3	5	8	61	3	64	94
05:45 PM	3	25	28	6	5	11	57	1	58	97
Total	5	128	133	20	22	42	231	9	240	415
Grand Total	17	247	264	32	51	83	455	14	469	816
Apprch %	6.4	93.6		38.6	61.4		97	3		
Total %	2.1	30.3	32.4	3.9	6.2	10.2	55.8	1.7	57.5	
Passenger Vehicles	17	242	259	32	50	82	435	14	449	790
% Passenger Vehicles	100	98	98.1	100	98	98.8	95.6	100	95.7	96.8
Large 2 Axle Vehicles	0	4	4	0	1	1	10	0	10	15
% Large 2 Axle Vehicles	0	1.6	1.5	0	2	1.2	2.2	0	2.1	1.8
3 Axle Vehicles	0	0	0	0	0	0	4	0	4	4
% 3 Axle Vehicles	0	0	0	0	0	0	0.9	0	0.9	0.5
4+ Axle Trucks	0	1	1	0	0	0	6	0	6	7
% 4+ Axle Trucks	0	0.4	0.4	0	0	0	1.3	0	1.3	0.9

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**2**	**45**	**47**	1	**8**	9	**64**	1	**65**	**121**
05:00 PM	0	42	42	3	7	10	54	2	56	108
05:15 PM	0	41	41	**8**	5	**13**	59	**3**	62	116
05:30 PM	2	20	22	3	5	8	61	3	64	94
Total Volume	4	148	152	15	25	40	238	9	247	439
% App. Total	2.6	97.4		37.5	62.5		96.4	3.6		
PHF	.500	.822	.809	.469	.781	.769	.930	.750	.950	.907

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:15 PM			04:45 PM		
+0 mins.	**4**	24	28	**6**	**12**	**18**	**64**	1	**65**
+15 mins.	2	**45**	**47**	3	6	9	54	2	56
+30 mins.	0	42	42	1	8	9	59	**3**	62
+45 mins.	0	41	41	3	7	10	61	3	64
Total Volume	6	152	158	13	33	46	238	9	247
% App. Total	3.8	96.2		28.3	71.7		96.4	3.6	
PHF	.375	.844	.840	.542	.688	.639	.930	.750	.950

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

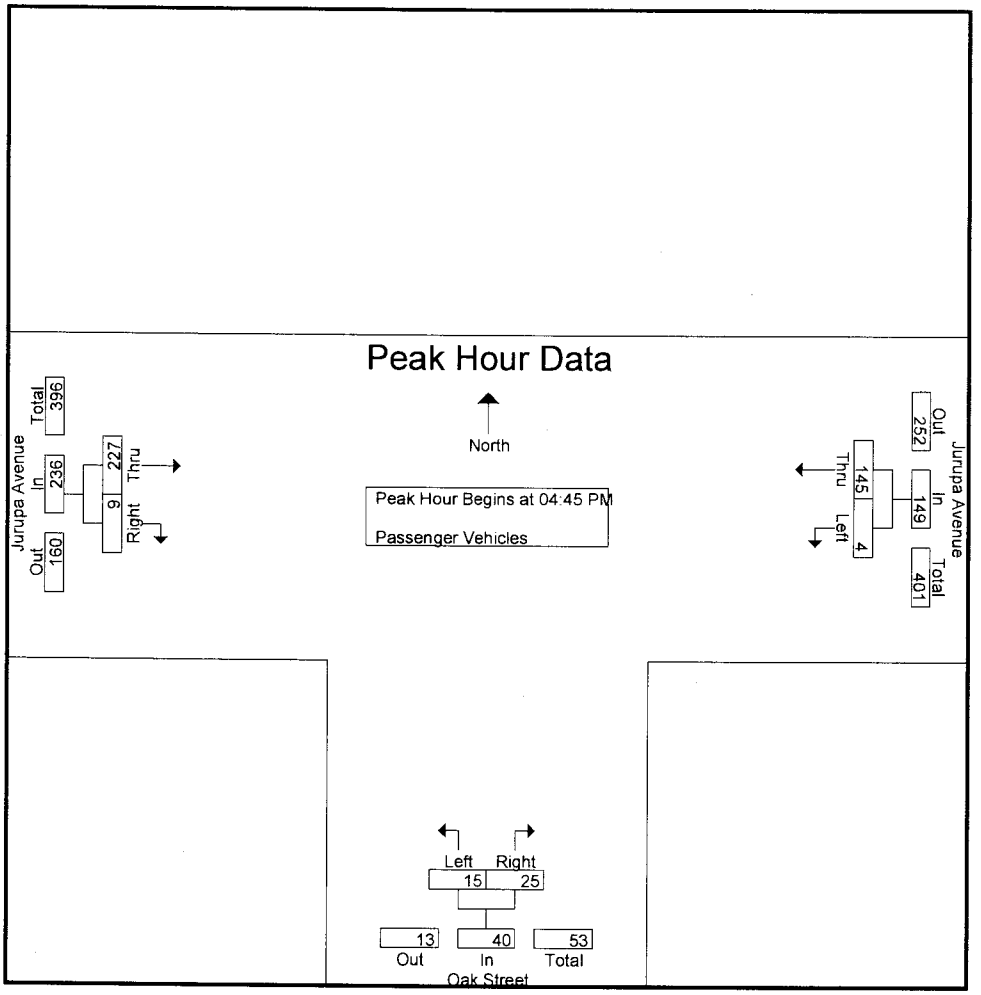
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	5	20	25	2	3	5	60	1	61	91
04:15 PM	1	29	30	6	11	17	43	1	44	91
04:30 PM	4	23	27	3	6	9	51	2	53	89
04:45 PM	2	44	46	1	8	9	61	1	62	117
Total	12	116	128	12	28	40	215	5	220	388
05:00 PM	0	41	41	3	7	10	52	2	54	105
05:15 PM	0	41	41	8	5	13	57	3	60	114
05:30 PM	2	19	21	3	5	8	57	3	60	89
05:45 PM	3	25	28	6	5	11	54	1	55	94
Total	5	126	131	20	22	42	220	9	229	402
Grand Total	17	242	259	32	50	82	435	14	449	790
Apprch %	6.6	93.4		39	61		96.9	3.1		
Total %	2.2	30.6	32.8	4.1	6.3	10.4	55.1	1.8	56.8	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**2**	**44**	**46**	1	**8**	9	**61**	1	**62**	**117**
05:00 PM	0	41	41	3	7	10	52	2	54	105
05:15 PM	0	41	41	**8**	5	**13**	57	**3**	60	114
05:30 PM	2	19	21	3	5	8	57	3	60	89
Total Volume	4	145	149	15	25	40	227	9	236	425
% App. Total	2.7	97.3		37.5	62.5		96.2	3.8		
PHF	.500	.824	.810	.469	.781	.769	.930	.750	.952	.908

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	**2**	**44**	**46**	1	**8**	9	**61**	1	**62**
+15 mins.	0	41	41	3	7	10	52	2	54
+30 mins.	0	41	41	**8**	5	**13**	57	**3**	60
+45 mins.	2	19	21	3	5	8	57	3	60
Total Volume	4	145	149	15	25	40	227	9	236
% App. Total	2.7	97.3		37.5	62.5		96.2	3.8	
PHF	.500	.824	.810	.469	.781	.769	.930	.750	.952

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

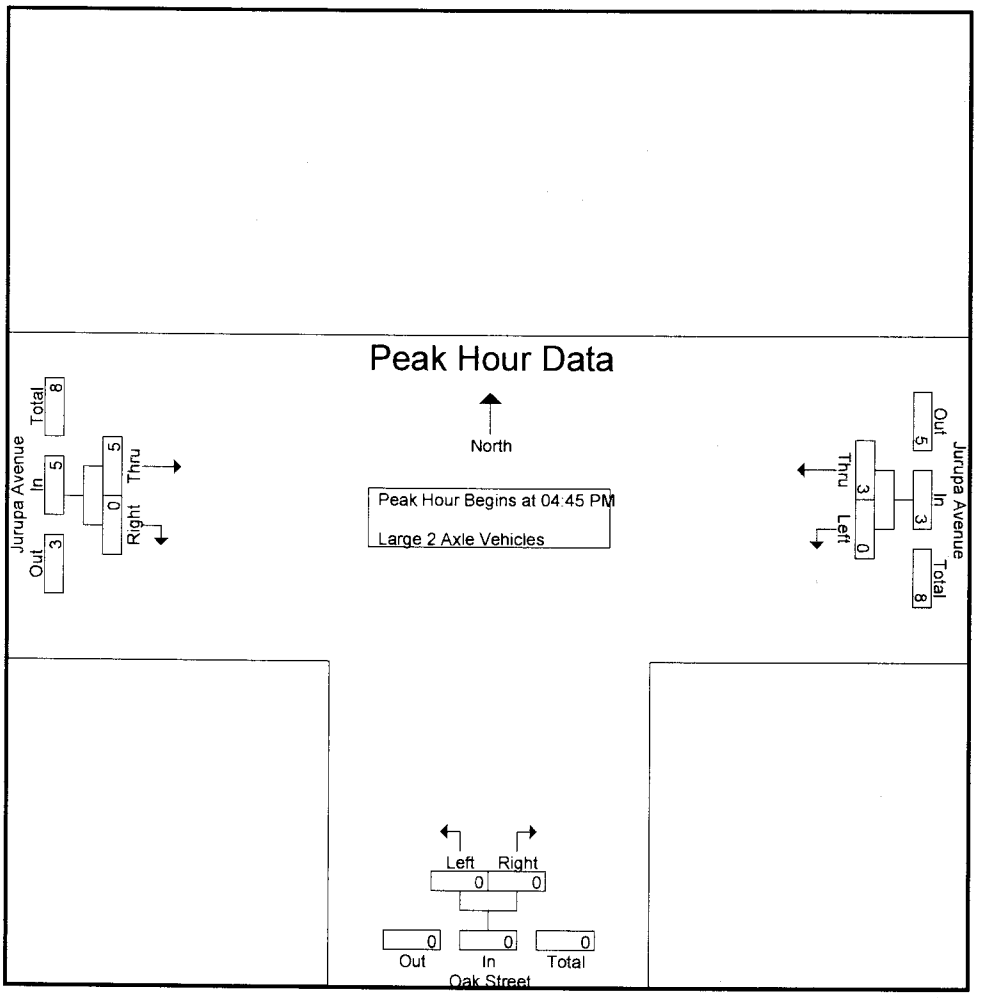
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	1	1	2	0	2	3
04:30 PM	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	2	2	0	1	1	3	0	3	6
05:00 PM	0	1	1	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	1	1	0	0	0	3	0	3	4
05:45 PM	0	0	0	0	0	0	2	0	2	2
Total	0	2	2	0	0	0	7	0	7	9
Grand Total	0	4	4	0	1	1	10	0	10	15
Apprch %	0	100		0	100		100	0		
Total %	0	26.7	26.7	0	6.7	6.7	66.7	0	66.7	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	**1**	**1**	0	0	0	0	0	0	1
05:00 PM	0	1	1	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	1	1	0	0	0	**3**	0	**3**	**4**
Total Volume	0	3	3	0	0	0	5	0	5	8
% App. Total	0	100		0	0		100	0		
PHF	.000	.750	.750	.000	.000	.000	.417	.000	.417	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	**1**	**1**	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	1	1	0	0	0	**3**	0	**3**
Total Volume	0	3	3	0	0	0	5	0	5
% App. Total	0	100		0	0		100	0	
PHF	.000	.750	.750	.000	.000	.000	.417	.000	.417

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

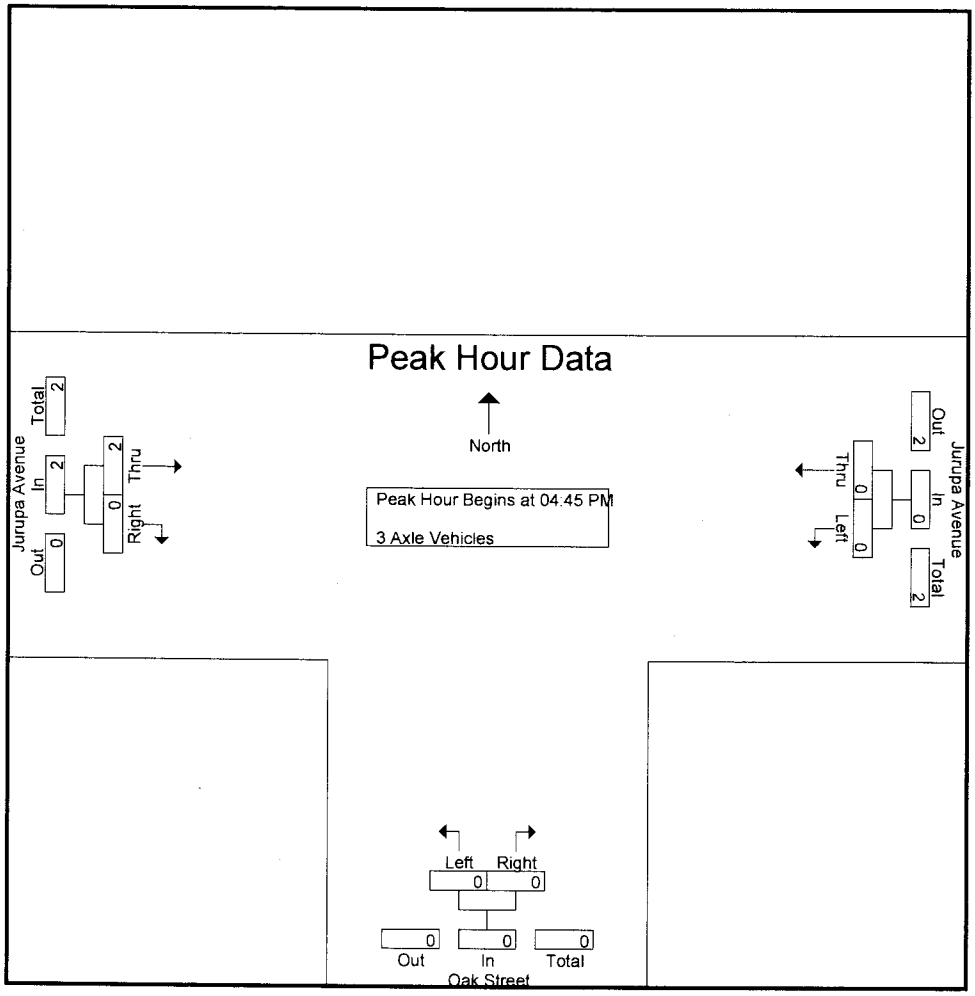
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	2	0	2	2
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	2	0	2	2
Grand Total	0	0	0	0	0	0	4	0	4	4
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	**1**	0	**1**	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	2
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

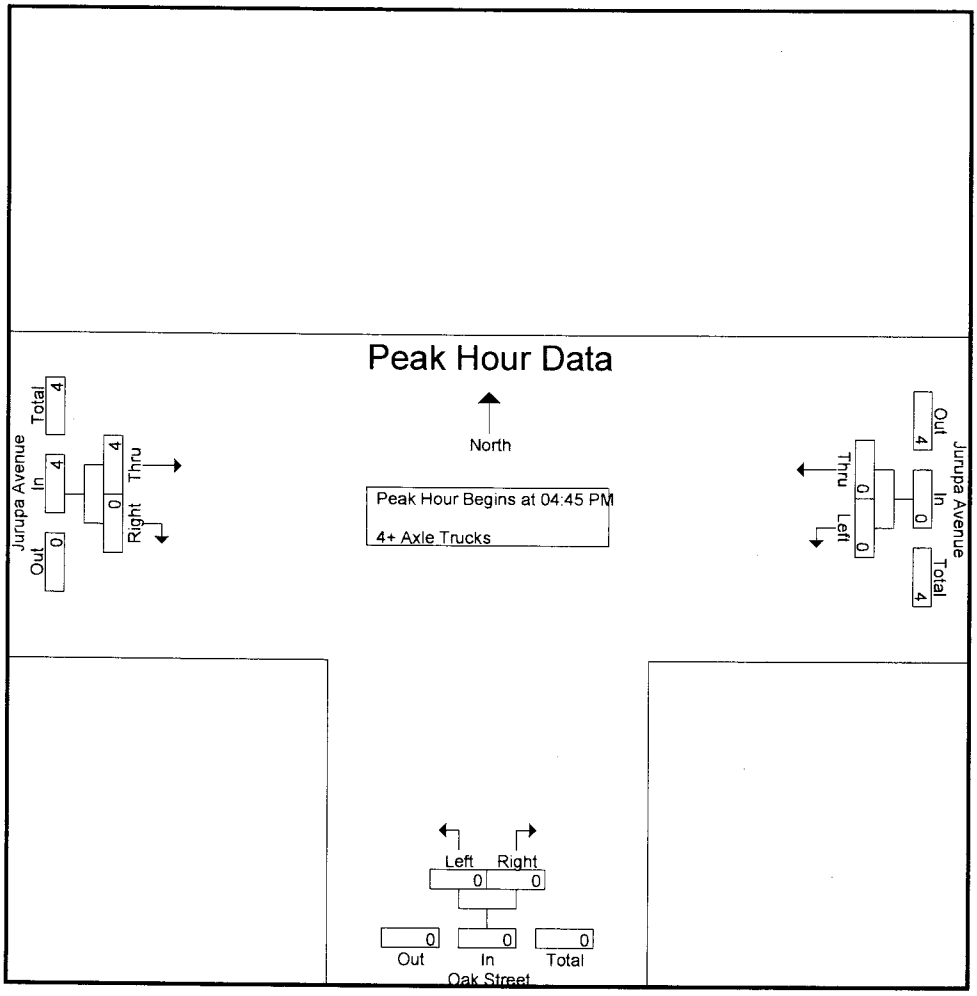
	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	0	2	0	2	2
Total	0	1	1	0	0	0	4	0	4	5
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	2	2
Grand Total	0	1	1	0	0	0	6	0	6	7
Apprch %	0	100		0	0		100	0		
Total %	0	14.3	14.3	0	0	0	85.7	0	85.7	

	Jurupa Avenue Westbound			Oak Street Northbound			Jurupa Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	**2**	0	**2**	**2**
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	4	0	4	4
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Oak Street
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBOAJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	0	0	0	0	0	**2**	0	**2**
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	4	0	4
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

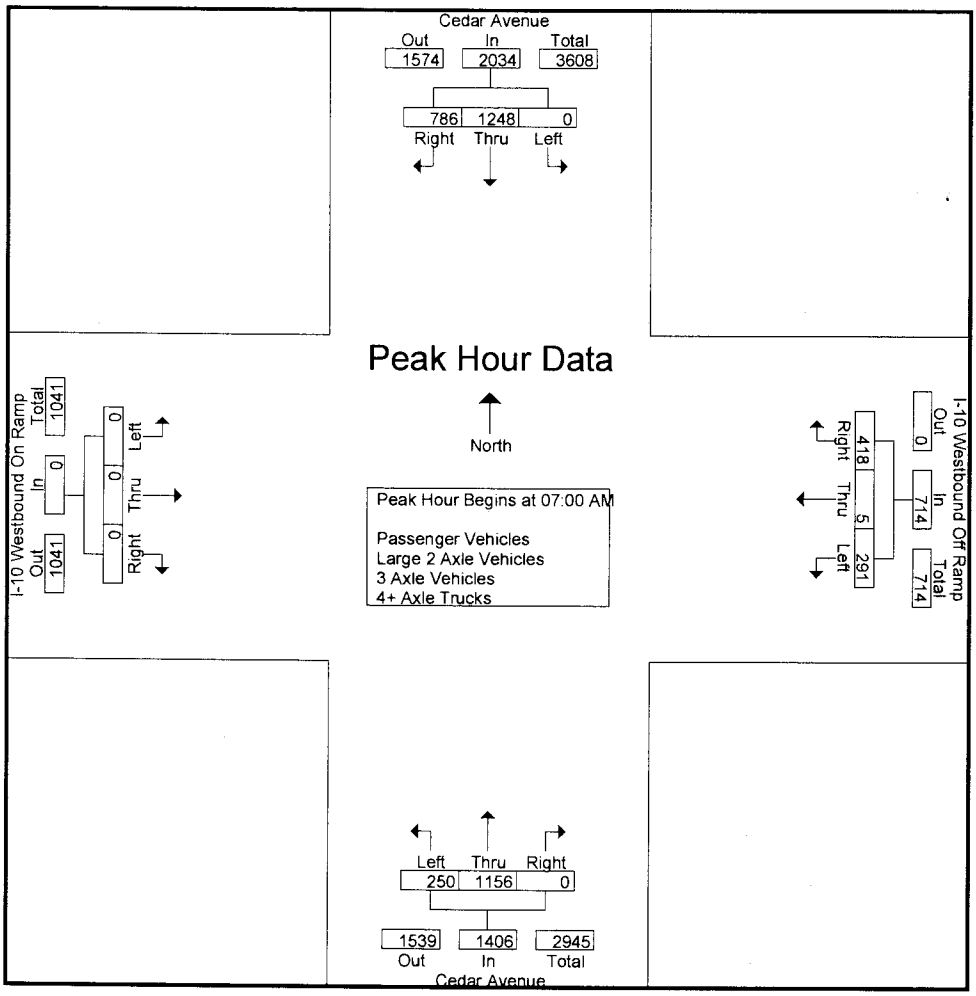
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	297	197	494	78	1	112	191	61	251	0	312	0	0	0	0	997
07:15 AM	0	295	237	532	76	1	95	172	77	311	0	388	0	0	0	0	1092
07:30 AM	0	320	199	519	68	3	112	183	63	298	0	361	0	0	0	0	1063
07:45 AM	0	336	153	489	69	0	99	168	49	296	0	345	0	0	0	0	1002
Total	0	1248	786	2034	291	5	418	714	250	1156	0	1406	0	0	0	0	4154
08:00 AM	0	277	176	453	62	0	115	177	46	238	0	284	0	0	0	0	914
08:15 AM	0	265	164	429	60	0	93	153	58	247	0	305	0	0	0	0	887
08:30 AM	0	225	173	398	51	0	85	136	69	222	0	291	0	0	0	0	825
08:45 AM	0	231	148	379	53	1	101	155	53	229	0	282	0	0	0	0	816
Total	0	998	661	1659	226	1	394	621	226	936	0	1162	0	0	0	0	3442
Grand Total	0	2246	1447	3693	517	6	812	1335	476	2092	0	2568	0	0	0	0	7596
Apprch %	0	60.8	39.2		38.7	0.4	60.8		18.5	81.5	0		0	0	0		
Total %	0	29.6	19	48.6	6.8	0.1	10.7	17.6	6.3	27.5	0	33.8	0	0	0	0	
Passenger Vehicles	0	2151	1370	3521	481	4	777	1262	394	1956	0	2350	0	0	0	0	7133
% Passenger Vehicles	0	95.8	94.7	95.3	93	66.7	95.7	94.5	82.8	93.5	0	91.5	0	0	0	0	93.9
Large 2 Axle Vehicles	0	52	28	80	15	0	27	42	40	64	0	104	0	0	0	0	226
% Large 2 Axle Vehicles	0	2.3	1.9	2.2	2.9	0	3.3	3.1	8.4	3.1	0	4	0	0	0	0	3
3 Axle Vehicles	0	9	9	18	3	2	5	10	13	16	0	29	0	0	0	0	57
% 3 Axle Vehicles	0	0.4	0.6	0.5	0.6	33.3	0.6	0.7	2.7	0.8	0	1.1	0	0	0	0	0.8
4+ Axle Trucks	0	34	40	74	18	0	3	21	29	56	0	85	0	0	0	0	180
% 4+ Axle Trucks	0	1.5	2.8	2	3.5	0	0.4	1.6	6.1	2.7	0	3.3	0	0	0	0	2.4

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	297	197	494	**78**	1	**112**	**191**	61	251	0	312	0	0	0	0	997
07:15 AM	0	295	**237**	**532**	76	1	95	172	**77**	**311**	0	**388**	0	0	0	0	**1092**
07:30 AM	0	320	199	519	68	**3**	112	183	63	298	0	361	0	0	0	0	1063
07:45 AM	0	**336**	153	489	69	0	99	168	49	296	0	345	0	0	0	0	1002
Total Volume	0	1248	786	2034	291	5	418	714	250	1156	0	1406	0	0	0	0	4154
% App. Total	0	61.4	38.6		40.8	0.7	58.5		17.8	82.2	0		0	0	0		
PHF	.000	.929	.829	.956	.933	.417	.933	.935	.812	.929	.000	.906	.000	.000	.000	.000	.951

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	297	197	494	**78**	1	**112**	**191**	61	251	0	312	0	0	0	0
+15 mins.	0	295	**237**	**532**	76	1	95	172	**77**	**311**	0	**388**	0	0	0	0
+30 mins.	0	320	199	519	68	**3**	112	183	63	298	0	361	0	0	0	0
+45 mins.	0	**336**	153	489	69	0	99	168	49	296	0	345	0	0	0	0
Total Volume	0	1248	786	2034	291	5	418	714	250	1156	0	1406	0	0	0	0
% App. Total	0	61.4	38.6		40.8	0.7	58.5		17.8	82.2	0		0	0	0	
PHF	.000	.929	.829	.956	.933	.417	.933	.935	.812	.929	.000	.906	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

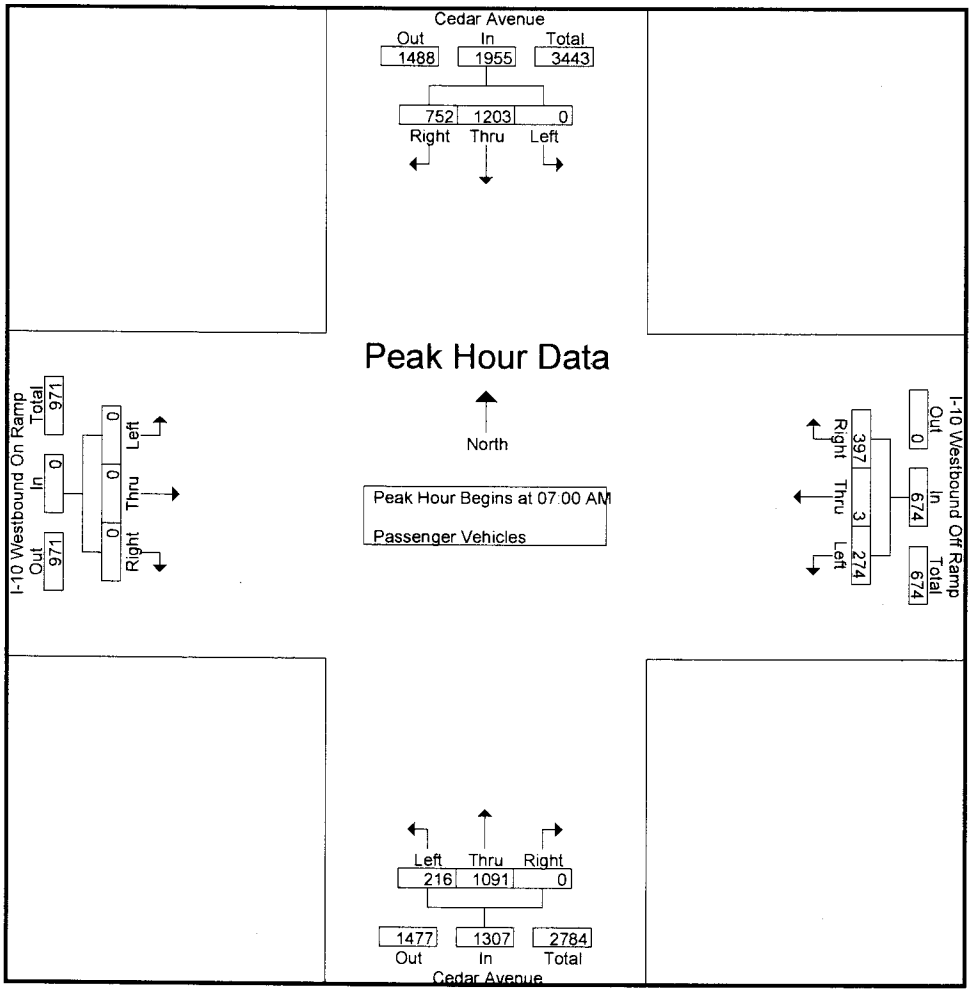
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	288	190	478	70	0	105	175	53	237	0	290	0	0	0	0	943
07:15 AM	0	289	227	516	74	1	89	164	67	298	0	365	0	0	0	0	1045
07:30 AM	0	308	192	500	64	2	106	172	55	281	0	336	0	0	0	0	1008
07:45 AM	0	318	143	461	66	0	97	163	41	275	0	316	0	0	0	0	940
Total	0	1203	752	1955	274	3	397	674	216	1091	0	1307	0	0	0	0	3936
08:00 AM	0	263	166	429	58	0	111	169	38	220	0	258	0	0	0	0	856
08:15 AM	0	248	153	401	53	0	89	142	50	230	0	280	0	0	0	0	823
08:30 AM	0	214	160	374	47	0	81	128	50	202	0	252	0	0	0	0	754
08:45 AM	0	223	139	362	49	1	99	149	40	213	0	253	0	0	0	0	764
Total	0	948	618	1566	207	1	380	588	178	865	0	1043	0	0	0	0	3197
Grand Total	0	2151	1370	3521	481	4	777	1262	394	1956	0	2350	0	0	0	0	7133
Apprch %	0	61.1	38.9		38.1	0.3	61.6		16.8	83.2	0		0	0	0		
Total %	0	30.2	19.2	49.4	6.7	0.1	10.9	17.7	5.5	27.4	0	32.9	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	288	190	478	70	0	105	**175**	53	237	0	290	0	0	0	0	943
07:15 AM	0	289	**227**	**516**	**74**	1	89	164	**67**	**298**	0	**365**	0	0	0	0	**1045**
07:30 AM	0	308	192	500	64	**2**	**106**	172	55	281	0	336	0	0	0	0	1008
07:45 AM	0	**318**	143	461	66	0	97	163	41	275	0	316	0	0	0	0	940
Total Volume	0	1203	752	1955	274	3	397	674	216	1091	0	1307	0	0	0	0	3936
% App. Total	0	61.5	38.5		40.7	0.4	58.9		16.5	83.5	0		0	0	0		
PHF	.000	.946	.828	.947	.926	.375	.936	.963	.806	.915	.000	.895	.000	.000	.000	.000	.942

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	288	190	478	70	0	105	**175**	53	237	0	290	0	0	0	0
+15 mins.	0	289	**227**	**516**	**74**	1	89	164	**67**	**298**	0	**365**	0	0	0	0
+30 mins.	0	308	192	500	64	**2**	**106**	172	55	281	0	336	0	0	0	0
+45 mins.	0	**318**	143	461	66	0	97	163	41	275	0	316	0	0	0	0
Total Volume	0	1203	752	1955	274	3	397	674	216	1091	0	1307	0	0	0	0
% App. Total	0	61.5	38.5		40.7	0.4	58.9		16.5	83.5	0		0	0	0	
PHF	.000	.946	.828	.947	.926	.375	.936	.963	.806	.915	.000	.895	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

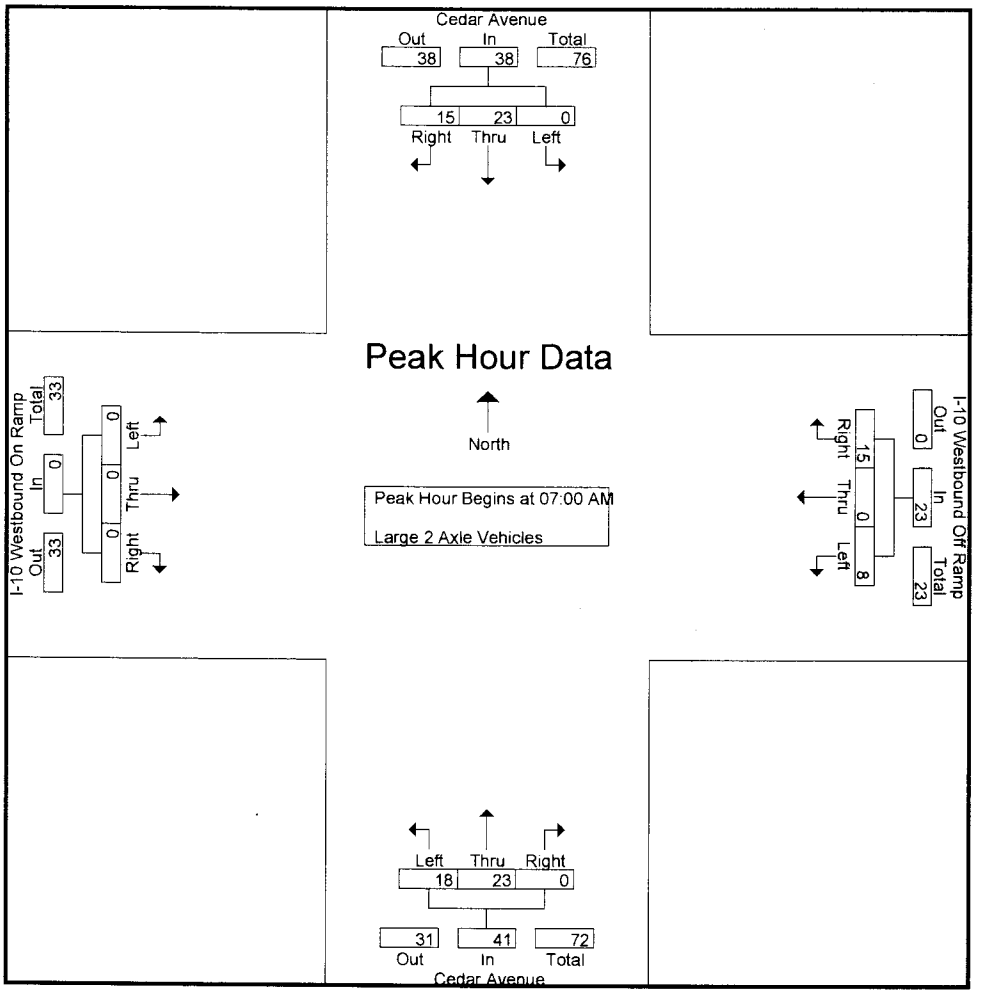
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	3	6	5	0	5	10	5	6	0	11	0	0	0	0	27
07:15 AM	0	3	6	9	1	0	3	4	7	5	0	12	0	0	0	0	25
07:30 AM	0	7	2	9	1	0	5	6	2	6	0	8	0	0	0	0	23
07:45 AM	0	10	4	14	1	0	2	3	4	6	0	10	0	0	0	0	27
Total	0	23	15	38	8	0	15	23	18	23	0	41	0	0	0	0	102
08:00 AM	0	7	3	10	1	0	4	5	2	8	0	10	0	0	0	0	25
08:15 AM	0	12	3	15	1	0	4	5	2	10	0	12	0	0	0	0	32
08:30 AM	0	5	2	7	3	0	3	6	14	14	0	28	0	0	0	0	41
08:45 AM	0	5	5	10	2	0	1	3	4	9	0	13	0	0	0	0	26
Total	0	29	13	42	7	0	12	19	22	41	0	63	0	0	0	0	124
Grand Total	0	52	28	80	15	0	27	42	40	64	0	104	0	0	0	0	226
Apprch %	0	65	35		35.7	0	64.3		38.5	61.5	0		0	0	0		
Total %	0	23	12.4	35.4	6.6	0	11.9	18.6	17.7	28.3	0	46	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	3	3	6	**5**	0	**5**	**10**	5	**6**	0	11	0	0	0	0	**27**
07:15 AM	0	3	**6**	9	1	0	3	4	**7**	5	0	**12**	0	0	0	0	25
07:30 AM	0	7	2	9	1	0	5	6	2	6	0	8	0	0	0	0	23
07:45 AM	0	**10**	4	**14**	1	0	2	3	4	6	0	10	0	0	0	0	27
Total Volume	0	23	15	38	8	0	15	23	18	23	0	41	0	0	0	0	102
% App. Total	0	60.5	39.5		34.8	0	65.2		43.9	56.1	0		0	0	0		
PHF	.000	.575	.625	.679	.400	.000	.750	.575	.643	.958	.000	.854	.000	.000	.000	.000	.944

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	3	3	6	**5**	0	**5**	**10**	5	**6**	0	11	0	0	0	0
+15 mins.	0	3	**6**	9	1	0	3	4	**7**	5	0	**12**	0	0	0	0
+30 mins.	0	7	2	9	1	0	5	6	2	6	0	8	0	0	0	0
+45 mins.	0	**10**	4	**14**	1	0	2	3	4	6	0	10	0	0	0	0
Total Volume	0	23	15	38	8	0	15	23	18	23	0	41	0	0	0	0
% App. Total	0	60.5	39.5		34.8	0	65.2		43.9	56.1	0		0	0	0	
PHF	.000	.575	.625	.679	.400	.000	.750	.575	.643	.958	.000	.854	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

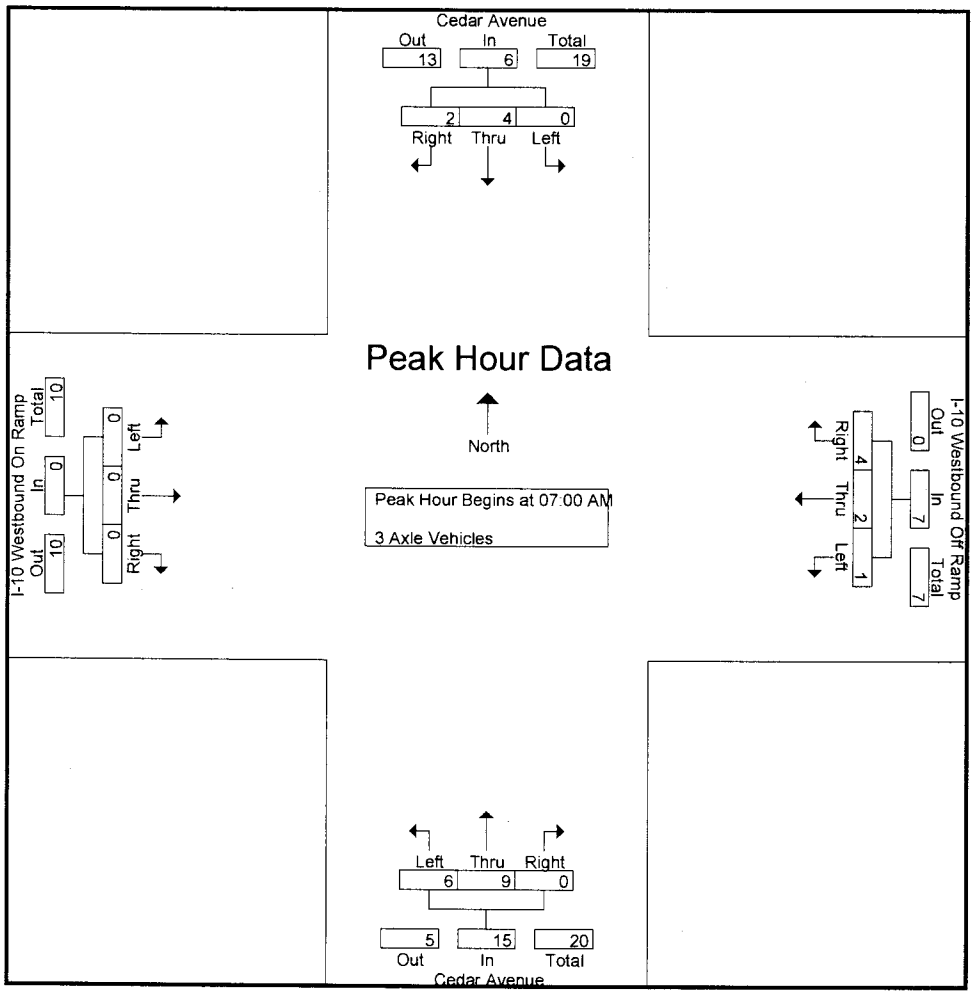
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	2	2	1	1	0	2	0	0	0	0	4
07:30 AM	0	2	0	2	0	1	1	2	4	3	0	7	0	0	0	0	11
07:45 AM	0	2	2	4	1	0	0	1	0	5	0	5	0	0	0	0	10
Total	0	4	2	6	1	2	4	7	6	9	0	15	0	0	0	0	28
08:00 AM	0	2	0	2	1	0	0	1	2	2	0	4	0	0	0	0	7
08:15 AM	0	1	4	5	1	0	0	1	2	2	0	4	0	0	0	0	10
08:30 AM	0	2	1	3	0	0	1	1	1	2	0	3	0	0	0	0	7
08:45 AM	0	0	2	2	0	0	0	0	2	1	0	3	0	0	0	0	5
Total	0	5	7	12	2	0	1	3	7	7	0	14	0	0	0	0	29
Grand Total	0	9	9	18	3	2	5	10	13	16	0	29	0	0	0	0	57
Apprch %	0	50	50		30	20	50		44.8	55.2	0		0	0	0		
Total %	0	15.8	15.8	31.6	5.3	3.5	8.8	17.5	22.8	28.1	0	50.9	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**1**	1	**2**	1	0	0	1	0	0	0	0	3
07:15 AM	0	0	0	0	0	0	**2**	2	1	1	0	2	0	0	0	0	4
07:30 AM	0	**2**	0	2	0	1	1	2	**4**	3	0	**7**	0	0	0	0	**11**
07:45 AM	0	2	**2**	**4**	**1**	0	0	1	0	**5**	0	5	0	0	0	0	10
Total Volume	0	4	2	6	1	2	4	7	6	9	0	15	0	0	0	0	28
% App. Total	0	66.7	33.3		14.3	28.6	57.1		40	60	0		0	0	0		
PHF	.000	.500	.250	.375	.250	.500	.500	.875	.375	.450	.000	.536	.000	.000	.000	.000	.636

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	**1**	1	**2**	1	0	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	**2**	2	1	1	0	2	0	0	0	0
+30 mins.	0	**2**	0	2	0	1	1	2	**4**	3	0	**7**	0	0	0	0
+45 mins.	0	2	**2**	**4**	**1**	0	0	1	0	**5**	0	5	0	0	0	0
Total Volume	0	4	2	6	1	2	4	7	6	9	0	15	0	0	0	0
% App. Total	0	66.7	33.3		14.3	28.6	57.1		40	60	0		0	0	0	
PHF	.000	.500	.250	.375	.250	.500	.500	.875	.375	.450	.000	.536	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

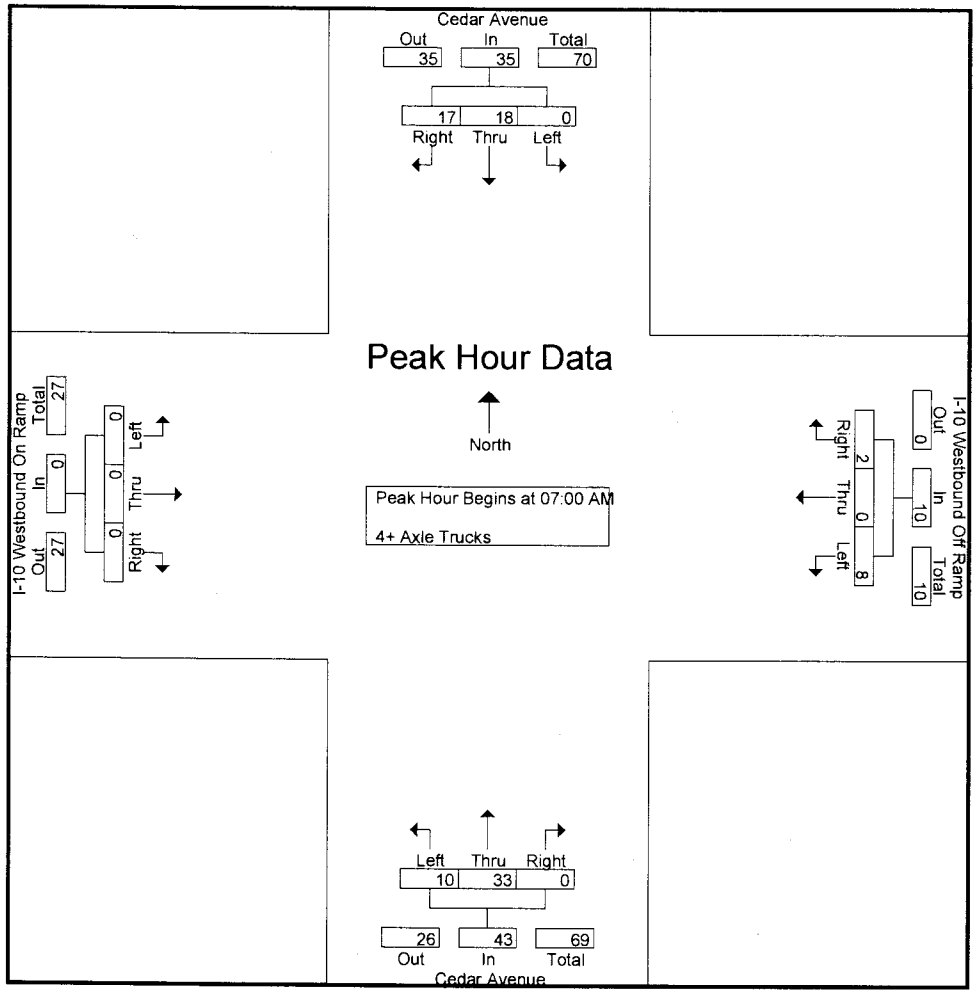
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	6	4	10	3	0	1	4	2	8	0	10	0	0	0	0	24
07:15 AM	0	3	4	7	1	0	1	2	2	7	0	9	0	0	0	0	18
07:30 AM	0	3	5	8	3	0	0	3	2	8	0	10	0	0	0	0	21
07:45 AM	0	6	4	10	1	0	0	1	4	10	0	14	0	0	0	0	25
Total	0	18	17	35	8	0	2	10	10	33	0	43	0	0	0	0	88
08:00 AM	0	5	7	12	2	0	0	2	4	8	0	12	0	0	0	0	26
08:15 AM	0	4	4	8	5	0	0	5	4	5	0	9	0	0	0	0	22
08:30 AM	0	4	10	14	1	0	0	1	4	4	0	8	0	0	0	0	23
08:45 AM	0	3	2	5	2	0	1	3	7	6	0	13	0	0	0	0	21
Total	0	16	23	39	10	0	1	11	19	23	0	42	0	0	0	0	92
Grand Total	0	34	40	74	18	0	3	21	29	56	0	85	0	0	0	0	180
Apprch %	0	45.9	54.1		85.7	0	14.3		34.1	65.9	0		0	0	0		
Total %	0	18.9	22.2	41.1	10	0	1.7	11.7	16.1	31.1	0	47.2	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**6**	4	**10**	**3**	0	**1**	**4**	2	8	0	10	0	0	0	0	24
07:15 AM	0	3	4	7	1	0	1	2	2	7	0	9	0	0	0	0	18
07:30 AM	0	3	**5**	8	3	0	0	3	2	8	0	10	0	0	0	0	21
07:45 AM	0	6	4	10	1	0	0	1	**4**	**10**	0	**14**	0	0	0	0	**25**
Total Volume	0	18	17	35	8	0	2	10	10	33	0	43	0	0	0	0	88
% App. Total	0	51.4	48.6		80	0	20		23.3	76.7	0		0	0	0		
PHF	.000	.750	.850	.875	.667	.000	.500	.625	.625	.825	.000	.768	.000	.000	.000	.000	.880

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	**6**	4	**10**	**3**	0	**1**	**4**	2	8	0	10	0	0	0	0
+15 mins.	0	3	4	7	1	0	1	2	2	7	0	9	0	0	0	0
+30 mins.	0	3	**5**	8	3	0	0	3	2	8	0	10	0	0	0	0
+45 mins.	0	6	4	10	1	0	0	1	**4**	**10**	0	**14**	0	0	0	0
Total Volume	0	18	17	35	8	0	2	10	10	33	0	43	0	0	0	0
% App. Total	0	51.4	48.6		80	0	20		23.3	76.7	0		0	0	0	
PHF	.000	.750	.850	.875	.667	.000	.500	.625	.625	.825	.000	.768	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

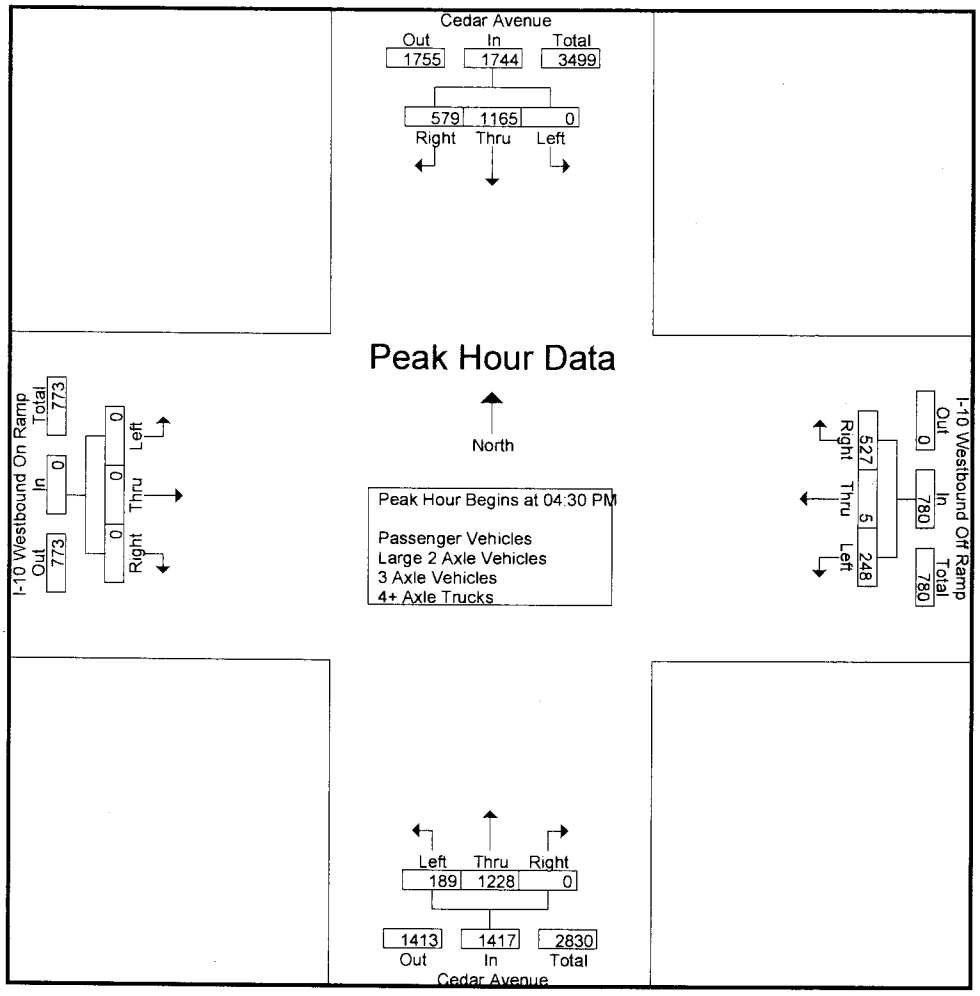
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	271	143	414	55	0	114	169	53	335	0	388	0	0	0	0	971
04:15 PM	0	252	134	386	58	5	121	184	37	331	0	368	0	0	0	0	938
04:30 PM	0	295	156	451	73	2	127	202	52	323	0	375	0	0	0	0	1028
04:45 PM	0	275	142	417	70	0	130	200	47	293	0	340	0	0	0	0	957
Total	0	1093	575	1668	256	7	492	755	189	1282	0	1471	0	0	0	0	3894
05:00 PM	0	292	139	431	51	2	131	184	54	303	0	357	0	0	0	0	972
05:15 PM	0	303	142	445	54	1	139	194	36	309	0	345	0	0	0	0	984
05:30 PM	0	278	164	442	76	0	101	177	37	309	0	346	0	0	0	0	965
05:45 PM	0	281	127	408	49	2	103	154	53	340	0	393	0	0	0	0	955
Total	0	1154	572	1726	230	5	474	709	180	1261	0	1441	0	0	0	0	3876
Grand Total	0	2247	1147	3394	486	12	966	1464	369	2543	0	2912	0	0	0	0	7770
Apprch %	0	66.2	33.8		33.2	0.8	66		12.7	87.3	0		0	0	0		
Total %	0	28.9	14.8	43.7	6.3	0.2	12.4	18.8	4.7	32.7	0	37.5	0	0	0	0	
Passenger Vehicles	0	2166	1107	3273	460	5	927	1392	333	2434	0	2767	0	0	0	0	7432
% Passenger Vehicles	0	96.4	96.5	96.4	94.7	41.7	96	95.1	90.2	95.7	0	95	0	0	0	0	95.6
Large 2 Axle Vehicles	0	35	20	55	11	2	15	28	10	55	0	65	0	0	0	0	148
% Large 2 Axle Vehicles	0	1.6	1.7	1.6	2.3	16.7	1.6	1.9	2.7	2.2	0	2.2	0	0	0	0	1.9
3 Axle Vehicles	0	22	6	28	4	5	3	12	7	13	0	20	0	0	0	0	60
% 3 Axle Vehicles	0	1	0.5	0.8	0.8	41.7	0.3	0.8	1.9	0.5	0	0.7	0	0	0	0	0.8
4+ Axle Trucks	0	24	14	38	11	0	21	32	19	41	0	60	0	0	0	0	130
% 4+ Axle Trucks	0	1.1	1.2	1.1	2.3	0	2.2	2.2	5.1	1.6	0	2.1	0	0	0	0	1.7

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	295	**156**	**451**	**73**	**2**	127	**202**	52	**323**	0	**375**	0	0	0	0	**1028**
04:45 PM	0	275	142	417	70	0	130	200	47	293	0	340	0	0	0	0	957
05:00 PM	0	292	139	431	51	2	131	184	**54**	303	0	357	0	0	0	0	972
05:15 PM	0	**303**	142	445	54	1	**139**	194	36	309	0	345	0	0	0	0	984
Total Volume	0	1165	579	1744	248	5	527	780	189	1228	0	1417	0	0	0	0	3941
% App. Total	0	66.8	33.2		31.8	0.6	67.6		13.3	86.7	0		0	0	0		
PHF	.000	.961	.928	.967	.849	.625	.948	.965	.875	.950	.000	.945	.000	.000	.000	.000	.958

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:00 PM				04:00 PM			
+0 mins.	0	295	**156**	**451**	**73**	**2**	127	**202**	**53**	**335**	0	**388**	0	0	0	0
+15 mins.	0	275	142	417	70	0	130	200	37	331	0	368	0	0	0	0
+30 mins.	0	292	139	431	51	2	131	184	52	323	0	375	0	0	0	0
+45 mins.	0	**303**	142	445	54	1	**139**	194	47	293	0	340	0	0	0	0
Total Volume	0	1165	579	1744	248	5	527	780	189	1282	0	1471	0	0	0	0
% App. Total	0	66.8	33.2		31.8	0.6	67.6		12.8	87.2	0		0	0	0	
PHF	.000	.961	.928	.967	.849	.625	.948	.965	.892	.957	.000	.948	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

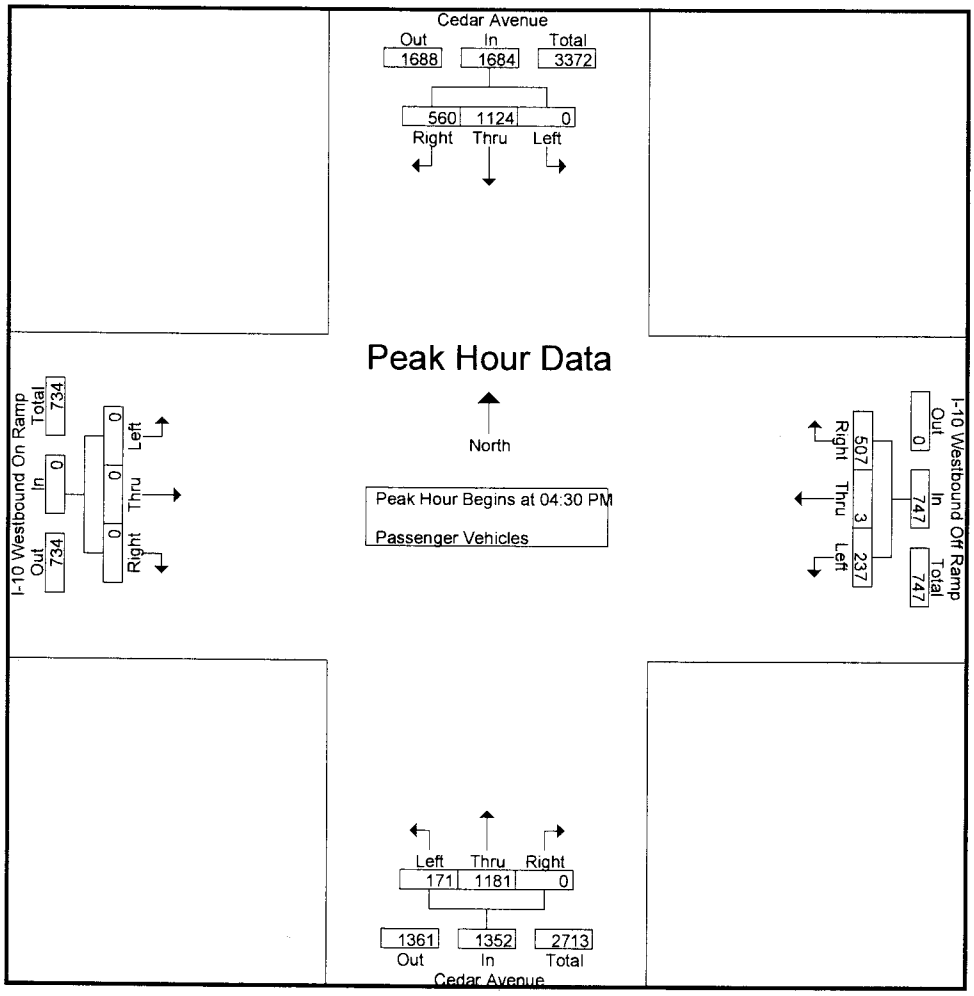
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	255	138	393	48	0	110	158	43	316	0	359	0	0	0	0	910
04:15 PM	0	247	128	375	53	0	114	167	32	318	0	350	0	0	0	0	892
04:30 PM	0	280	145	425	69	1	122	192	49	305	0	354	0	0	0	0	971
04:45 PM	0	266	139	405	66	0	126	192	44	279	0	323	0	0	0	0	920
Total	0	1048	550	1598	236	1	472	709	168	1218	0	1386	0	0	0	0	3693
05:00 PM	0	284	136	420	50	2	122	174	45	297	0	342	0	0	0	0	936
05:15 PM	0	294	140	434	52	0	137	189	33	300	0	333	0	0	0	0	956
05:30 PM	0	268	158	426	74	0	97	171	36	293	0	329	0	0	0	0	926
05:45 PM	0	272	123	395	48	2	99	149	51	326	0	377	0	0	0	0	921
Total	0	1118	557	1675	224	4	455	683	165	1216	0	1381	0	0	0	0	3739
Grand Total	0	2166	1107	3273	460	5	927	1392	333	2434	0	2767	0	0	0	0	7432
Apprch %	0	66.2	33.8		33	0.4	66.6		12	88	0		0	0	0		
Total %	0	29.1	14.9	44	6.2	0.1	12.5	18.7	4.5	32.8	0	37.2	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	280	**145**	425	**69**	1	122	**192**	**49**	**305**	0	**354**	0	0	0	0	**971**
04:45 PM	0	266	139	405	66	0	126	192	44	279	0	323	0	0	0	0	920
05:00 PM	0	284	136	420	50	**2**	122	174	45	297	0	342	0	0	0	0	936
05:15 PM	0	**294**	140	**434**	52	0	**137**	189	33	300	0	333	0	0	0	0	956
Total Volume	0	1124	560	1684	237	3	507	747	171	1181	0	1352	0	0	0	0	3783
% App. Total	0	66.7	33.3		31.7	0.4	67.9		12.6	87.4	0		0	0	0		
PHF	.000	.956	.966	.970	.859	.375	.925	.973	.872	.968	.000	.955	.000	.000	.000	.000	.974

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	280	**145**	425	**69**	1	122	**192**	**49**	**305**	0	**354**	0	0	0	0
+15 mins.	0	266	139	405	66	0	126	192	44	279	0	323	0	0	0	0
+30 mins.	0	284	136	420	50	**2**	122	174	45	297	0	342	0	0	0	0
+45 mins.	0	**294**	140	**434**	52	0	**137**	189	33	300	0	333	0	0	0	0
Total Volume	0	1124	560	1684	237	3	507	747	171	1181	0	1352	0	0	0	0
% App. Total	0	66.7	33.3		31.7	0.4	67.9		12.6	87.4	0		0	0	0	
PHF	.000	.956	.966	.970	.859	.375	.925	.973	.872	.968	.000	.955	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

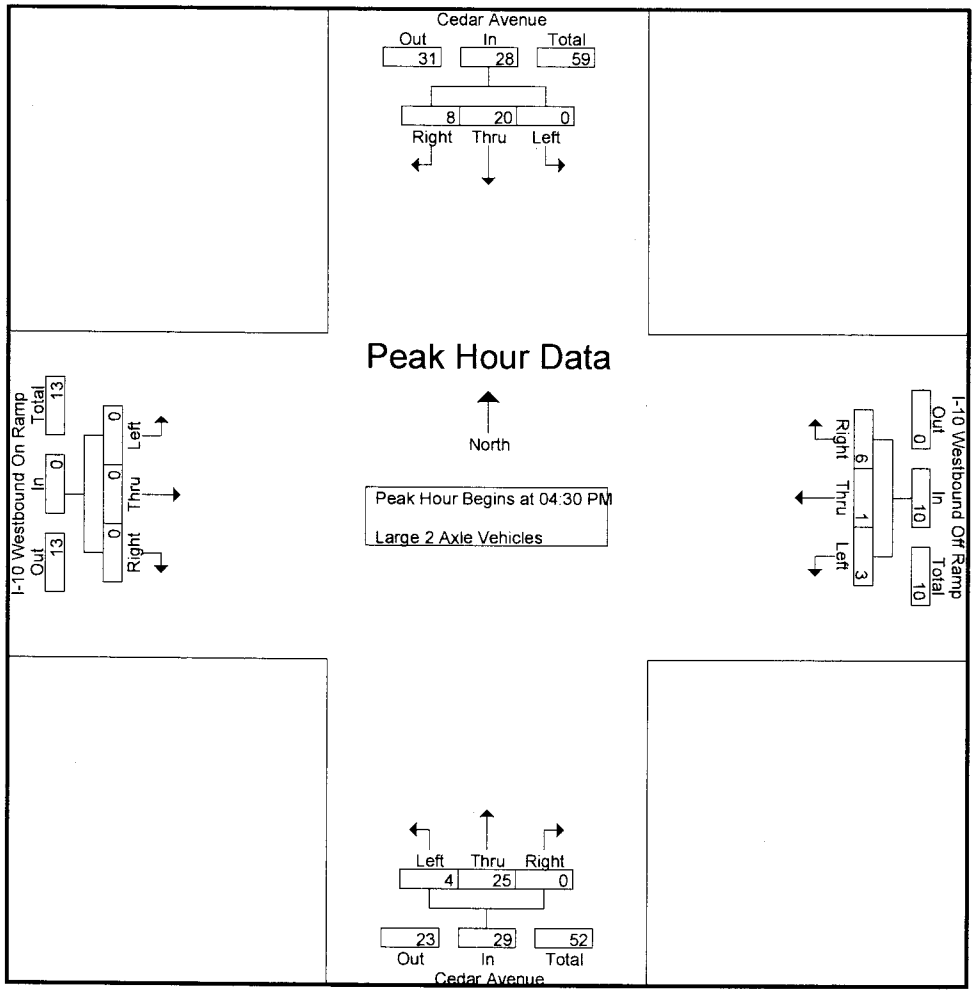
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	10	3	13	5	0	2	7	5	10	0	15	0	0	0	0	35
04:15 PM	0	1	4	5	3	1	5	9	1	8	0	9	0	0	0	0	23
04:30 PM	0	5	4	9	1	0	1	2	1	11	0	12	0	0	0	0	23
04:45 PM	0	3	2	5	1	0	1	2	1	3	0	4	0	0	0	0	11
Total	0	19	13	32	10	1	9	20	8	32	0	40	0	0	0	0	92
05:00 PM	0	6	1	7	0	0	4	4	2	4	0	6	0	0	0	0	17
05:15 PM	0	6	1	7	1	1	0	2	0	7	0	7	0	0	0	0	16
05:30 PM	0	2	3	5	0	0	0	0	0	6	0	6	0	0	0	0	11
05:45 PM	0	2	2	4	0	0	2	2	0	6	0	6	0	0	0	0	12
Total	0	16	7	23	1	1	6	8	2	23	0	25	0	0	0	0	56
Grand Total	0	35	20	55	11	2	15	28	10	55	0	65	0	0	0	0	148
Apprch %	0	63.6	36.4		39.3	7.1	53.6		15.4	84.6	0		0	0	0		
Total %	0	23.6	13.5	37.2	7.4	1.4	10.1	18.9	6.8	37.2	0	43.9	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	5	**4**	**9**	**1**	0	1	2	1	**11**	0	**12**	0	0	0	0	**23**
04:45 PM	0	3	2	5	1	0	1	2	1	3	0	4	0	0	0	0	11
05:00 PM	0	**6**	1	7	0	0	**4**	**4**	**2**	4	0	6	0	0	0	0	17
05:15 PM	0	6	1	7	1	**1**	0	2	0	7	0	7	0	0	0	0	16
Total Volume	0	20	8	28	3	1	6	10	4	25	0	29	0	0	0	0	67
% App. Total	0	71.4	28.6		30	10	60		13.8	86.2	0		0	0	0		
PHF	.000	.833	.500	.778	.750	.250	.375	.625	.500	.568	.000	.604	.000	.000	.000	.000	.728

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	5	**4**	**9**	**1**	0	1	2	1	**11**	0	**12**	0	0	0	0
+15 mins.	0	3	2	5	1	0	1	2	1	3	0	4	0	0	0	0
+30 mins.	0	**6**	1	7	0	0	**4**	**4**	**2**	4	0	6	0	0	0	0
+45 mins.	0	6	1	7	1	**1**	0	2	0	7	0	7	0	0	0	0
Total Volume	0	20	8	28	3	1	6	10	4	25	0	29	0	0	0	0
% App. Total	0	71.4	28.6		30	10	60		13.8	86.2	0		0	0	0	
PHF	.000	.833	.500	.778	.750	.250	.375	.625	.500	.568	.000	.604	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

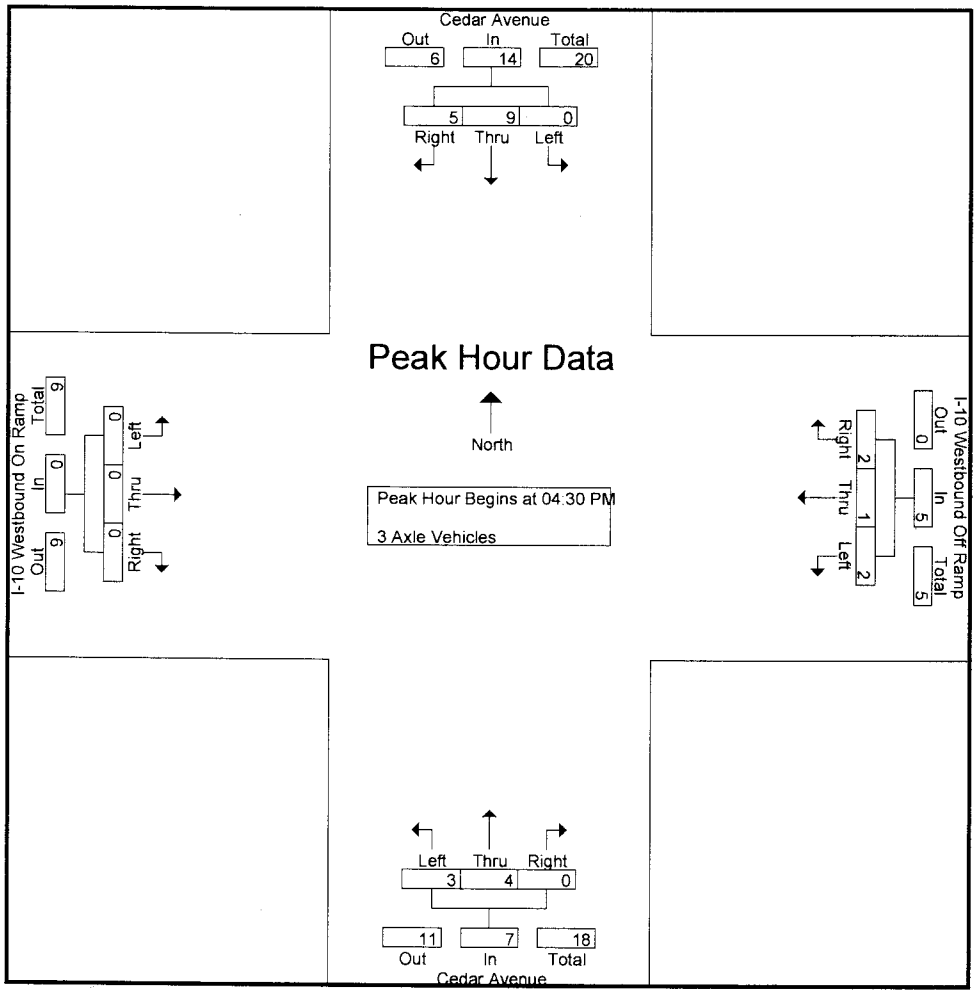
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	1	0	1	2	1	5	0	6	0	0	0	0	10
04:15 PM	0	3	0	3	0	4	0	4	2	1	0	3	0	0	0	0	10
04:30 PM	0	2	5	7	0	1	1	2	1	0	0	1	0	0	0	0	10
04:45 PM	0	4	0	4	2	0	1	3	0	3	0	3	0	0	0	0	10
Total	0	11	5	16	3	5	3	11	4	9	0	13	0	0	0	0	40
05:00 PM	0	1	0	1	0	0	0	0	2	1	0	3	0	0	0	0	4
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	4	1	5	1	0	0	1	0	1	0	1	0	0	0	0	7
05:45 PM	0	4	0	4	0	0	0	0	1	2	0	3	0	0	0	0	7
Total	0	11	1	12	1	0	0	1	3	4	0	7	0	0	0	0	20
Grand Total	0	22	6	28	4	5	3	12	7	13	0	20	0	0	0	0	60
Apprch %	0	78.6	21.4		33.3	41.7	25		35	65	0		0	0	0		
Total %	0	36.7	10	46.7	6.7	8.3	5	20	11.7	21.7	0	33.3	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	2	**5**	**7**	0	**1**	**1**	2	1	0	0	1	0	0	0	0	**10**
04:45 PM	0	**4**	0	4	**2**	0	1	**3**	0	**3**	0	**3**	0	0	0	0	10
05:00 PM	0	1	0	1	0	0	0	0	**2**	1	0	3	0	0	0	0	**4**
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	9	5	14	2	1	2	5	3	4	0	7	0	0	0	0	26
% App. Total	0	64.3	35.7		40	20	40		42.9	57.1	0		0	0	0		
PHF	.000	.563	.250	.500	.250	.250	.500	.417	.375	.333	.000	.583	.000	.000	.000	.000	.650

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	2	**5**	**7**	0	**1**	**1**	2	1	0	0	1	0	0	0	0
+15 mins.	0	**4**	0	4	**2**	0	1	**3**	0	**3**	0	**3**	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	**2**	1	0	3	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	9	5	14	2	1	2	5	3	4	0	7	0	0	0	0
% App. Total	0	64.3	35.7		40	20	40		42.9	57.1	0		0	0	0	
PHF	.000	.563	.250	.500	.250	.250	.500	.417	.375	.333	.000	.583	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

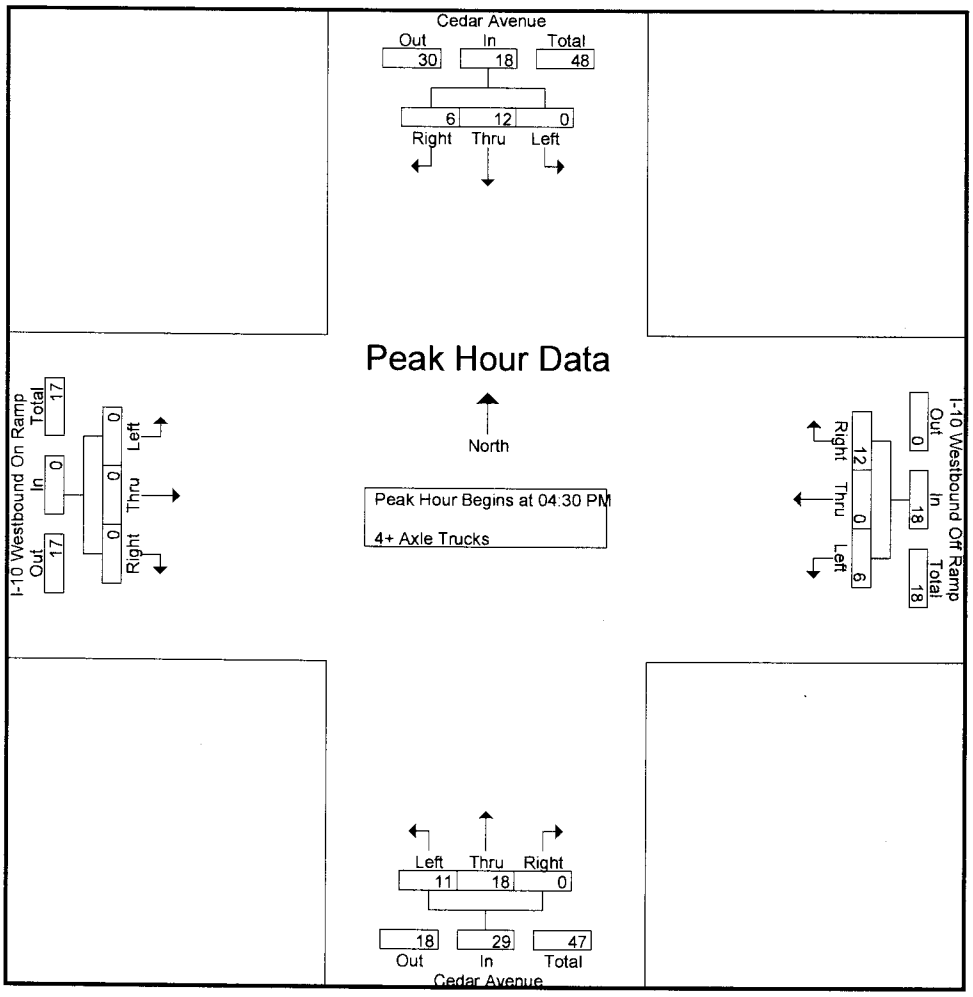
	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	2	6	1	0	1	2	4	4	0	8	0	0	0	0	16
04:15 PM	0	1	2	3	2	0	2	4	2	4	0	6	0	0	0	0	13
04:30 PM	0	8	2	10	3	0	3	6	1	7	0	8	0	0	0	0	24
04:45 PM	0	2	1	3	1	0	2	3	2	8	0	10	0	0	0	0	16
Total	0	15	7	22	7	0	8	15	9	23	0	32	0	0	0	0	69
05:00 PM	0	1	2	3	1	0	5	6	5	1	0	6	0	0	0	0	15
05:15 PM	0	1	1	2	1	0	2	3	3	2	0	5	0	0	0	0	10
05:30 PM	0	4	2	6	1	0	4	5	1	9	0	10	0	0	0	0	21
05:45 PM	0	3	2	5	1	0	2	3	1	6	0	7	0	0	0	0	15
Total	0	9	7	16	4	0	13	17	10	18	0	28	0	0	0	0	61
Grand Total	0	24	14	38	11	0	21	32	19	41	0	60	0	0	0	0	130
Apprch %	0	63.2	36.8		34.4	0	65.6		31.7	68.3	0		0	0	0		
Total %	0	18.5	10.8	29.2	8.5	0	16.2	24.6	14.6	31.5	0	46.2	0	0	0	0	

	Cedar Avenue Southbound				I-10 Westbound Off Ramp Westbound				Cedar Avenue Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**8**	**2**	**10**	**3**	0	3	**6**	1	7	0	8	0	0	0	0	**24**
04:45 PM	0	2	1	3	1	0	2	3	2	**8**	0	**10**	0	0	0	0	16
05:00 PM	0	1	2	3	1	0	**5**	6	**5**	1	0	6	0	0	0	0	15
05:15 PM	0	1	1	2	1	0	2	3	3	2	0	5	0	0	0	0	10
Total Volume	0	12	6	18	6	0	12	18	11	18	0	29	0	0	0	0	65
% App. Total	0	66.7	33.3		33.3	0	66.7		37.9	62.1	0		0	0	0		
PHF	.000	.375	.750	.450	.500	.000	.600	.750	.550	.563	.000	.725	.000	.000	.000	.000	.677

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : CSBCE10WPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	**8**	**2**	**10**	**3**	0	3	**6**	1	7	0	8	0	0	0	0
+15 mins.	0	2	1	3	1	0	2	3	2	**8**	0	**10**	0	0	0	0
+30 mins.	0	1	2	3	1	0	**5**	6	**5**	1	0	6	0	0	0	0
+45 mins.	0	1	1	2	1	0	2	3	3	2	0	5	0	0	0	0
Total Volume	0	12	6	18	6	0	12	18	11	18	0	29	0	0	0	0
% App. Total	0	66.7	33.3		33.3	0	66.7		37.9	62.1	0		0	0	0	
PHF	.000	.375	.750	.450	.500	.000	.600	.750	.550	.563	.000	.725	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

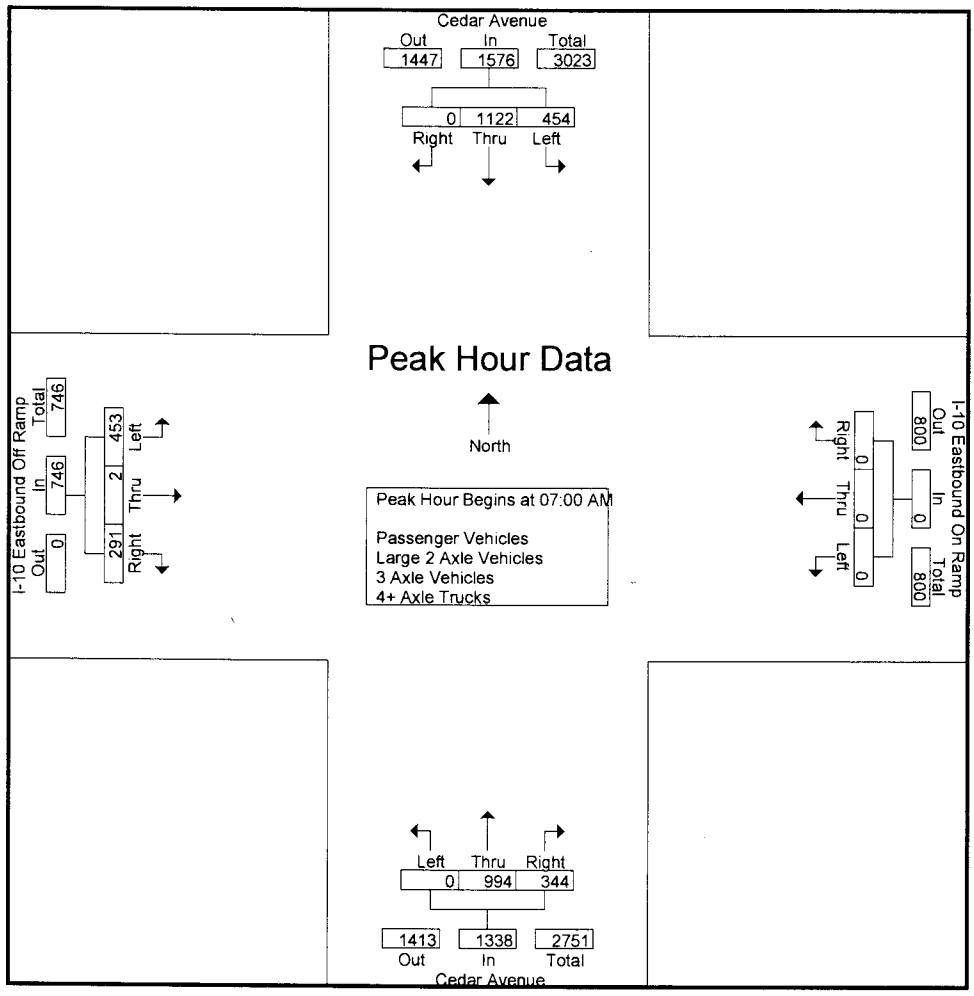
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	104	273	0	377	0	0	0	0	0	213	67	280	102	1	58	161	818
07:15 AM	114	271	0	385	0	0	0	0	0	266	89	355	130	0	75	205	945
07:30 AM	114	288	0	402	0	0	0	0	0	268	110	378	109	0	95	204	984
07:45 AM	122	290	0	412	0	0	0	0	0	247	78	325	112	1	63	176	913
Total	454	1122	0	1576	0	0	0	0	0	994	344	1338	453	2	291	746	3660
08:00 AM	98	246	0	344	0	0	0	0	0	189	65	254	108	3	55	166	764
08:15 AM	103	228	0	331	0	0	0	0	0	177	87	264	136	1	47	184	779
08:30 AM	84	193	0	277	0	0	0	0	0	194	52	246	96	1	53	150	673
08:45 AM	102	191	0	293	0	0	0	0	0	192	81	273	96	0	55	151	717
Total	387	858	0	1245	0	0	0	0	0	752	285	1037	436	5	210	651	2933
Grand Total	841	1980	0	2821	0	0	0	0	0	1746	629	2375	889	7	501	1397	6593
Apprch %	29.8	70.2	0		0	0	0		0	73.5	26.5		63.6	0.5	35.9		
Total %	12.8	30	0	42.8	0	0	0	0	0	26.5	9.5	36	13.5	0.1	7.6	21.2	
Passenger Vehicles	795	1871	0	2666	0	0	0	0	0	1594	584	2178	801	6	422	1229	6073
% Passenger Vehicles	94.5	94.5	0	94.5	0	0	0	0	0	91.3	92.8	91.7	90.1	85.7	84.2	88	92.1
Large 2 Axle Vehicles	25	63	0	88	0	0	0	0	0	77	25	102	34	0	21	55	245
% Large 2 Axle Vehicles	3	3.2	0	3.1	0	0	0	0	0	4.4	4	4.3	3.8	0	4.2	3.9	3.7
3 Axle Vehicles	4	9	0	13	0	0	0	0	0	27	6	33	18	1	16	35	81
% 3 Axle Vehicles	0.5	0.5	0	0.5	0	0	0	0	0	1.5	1	1.4	2	14.3	3.2	2.5	1.2
4+ Axle Trucks	17	37	0	54	0	0	0	0	0	48	14	62	36	0	42	78	194
% 4+ Axle Trucks	2	1.9	0	1.9	0	0	0	0	0	2.7	2.2	2.6	4	0	8.4	5.6	2.9

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	104	273	0	377	0	0	0	0	0	213	67	280	102	**1**	58	161	818
07:15 AM	114	271	0	385	0	0	0	0	0	266	89	355	**130**	0	75	**205**	945
07:30 AM	114	288	0	402	0	0	0	0	0	**268**	**110**	**378**	109	0	**95**	204	**984**
07:45 AM	**122**	**290**	0	**412**	0	0	0	0	0	247	78	325	112	1	63	176	913
Total Volume	454	1122	0	1576	0	0	0	0	0	994	344	1338	453	2	291	746	3660
% App. Total	28.8	71.2	0		0	0	0		0	74.3	25.7		60.7	0.3	39		
PHF	.930	.967	.000	.956	.000	.000	.000	.000	.000	.927	.782	.885	.871	.500	.766	.910	.930

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	104	273	0	377	0	0	0	0	0	213	67	280	**130**	0	75	**205**
+15 mins.	114	271	0	385	0	0	0	0	0	266	89	355	109	0	**95**	204
+30 mins.	114	288	0	402	0	0	0	0	0	**268**	**110**	**378**	112	1	63	176
+45 mins.	**122**	**290**	0	**412**	0	0	0	0	0	247	78	325	108	**3**	55	166
Total Volume	454	1122	0	1576	0	0	0	0	0	994	344	1338	459	4	288	751
% App. Total	28.8	71.2	0		0	0	0		0	74.3	25.7		61.1	0.5	38.3	
PHF	.930	.967	.000	.956	.000	.000	.000	.000	.000	.927	.782	.885	.883	.333	.758	.916

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

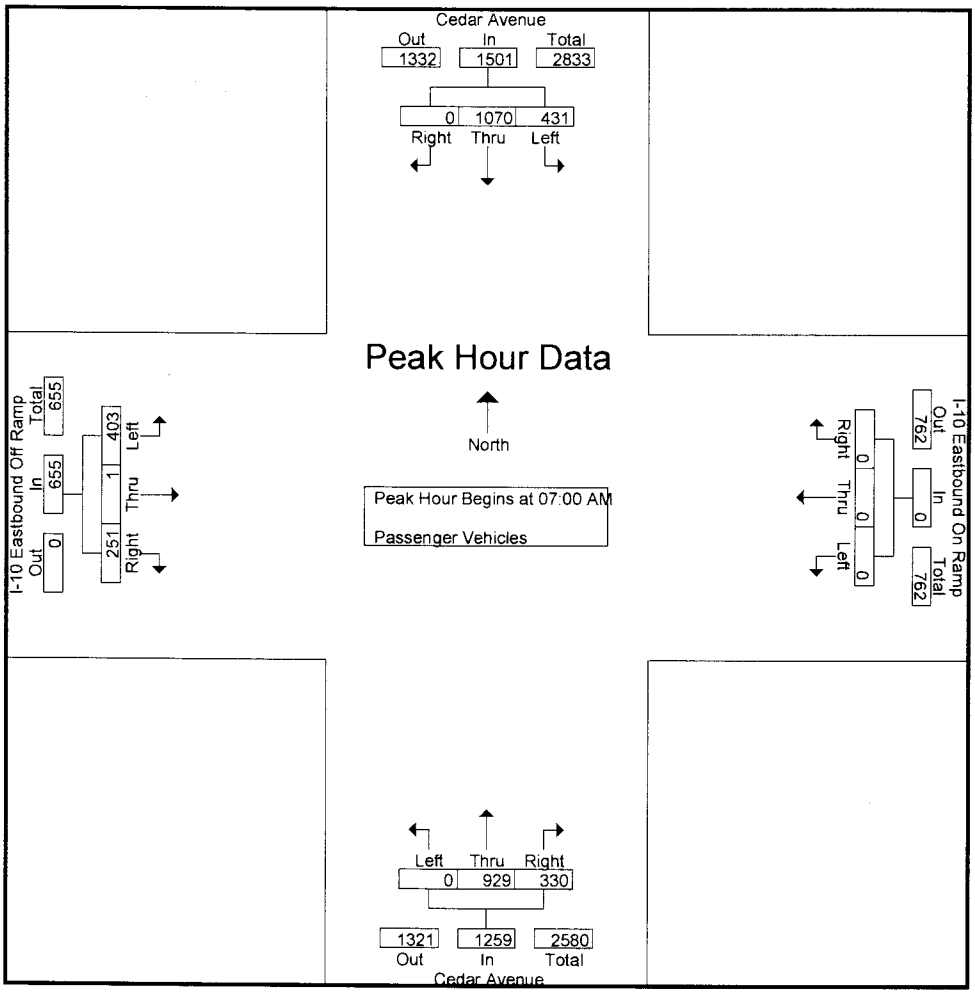
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	98	260	0	358	0	0	0	0	0	198	64	262	94	1	48	143	763
07:15 AM	109	262	0	371	0	0	0	0	0	253	86	339	115	0	66	181	891
07:30 AM	109	273	0	382	0	0	0	0	0	249	105	354	97	0	80	177	913
07:45 AM	115	275	0	390	0	0	0	0	0	229	75	304	97	0	57	154	848
Total	431	1070	0	1501	0	0	0	0	0	929	330	1259	403	1	251	655	3415
08:00 AM	92	230	0	322	0	0	0	0	0	168	59	227	99	3	43	145	694
08:15 AM	95	213	0	308	0	0	0	0	0	160	76	236	126	1	39	166	710
08:30 AM	81	178	0	259	0	0	0	0	0	164	49	213	86	1	48	135	607
08:45 AM	96	180	0	276	0	0	0	0	0	173	70	243	87	0	41	128	647
Total	364	801	0	1165	0	0	0	0	0	665	254	919	398	5	171	574	2658
Grand Total	795	1871	0	2666	0	0	0	0	0	1594	584	2178	801	6	422	1229	6073
Apprch %	29.8	70.2	0		0	0	0		0	73.2	26.8		65.2	0.5	34.3		
Total %	13.1	30.8	0	43.9	0	0	0	0	0	26.2	9.6	35.9	13.2	0.1	6.9	20.2	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	98	260	0	358	0	0	0	0	0	198	64	262	94	**1**	48	143	763
07:15 AM	109	262	0	371	0	0	0	0	0	**253**	86	339	**115**	0	66	**181**	891
07:30 AM	109	273	0	382	0	0	0	0	0	249	**105**	**354**	97	0	**80**	177	**913**
07:45 AM	**115**	**275**	0	**390**	0	0	0	0	0	229	75	304	97	0	57	154	848
Total Volume	431	1070	0	1501	0	0	0	0	0	929	330	1259	403	1	251	655	3415
% App. Total	28.7	71.3	0		0	0	0		0	73.8	26.2		61.5	0.2	38.3		
PHF	.937	.973	.000	.962	.000	.000	.000	.000	.000	.918	.786	.889	.876	.250	.784	.905	.935

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	98	260	0	358	0	0	0	0	0	198	64	262	94	**1**	48	143
+15 mins.	109	262	0	371	0	0	0	0	0	**253**	86	339	**115**	0	66	**181**
+30 mins.	109	273	0	382	0	0	0	0	0	249	**105**	**354**	97	0	**80**	177
+45 mins.	**115**	**275**	0	**390**	0	0	0	0	0	229	75	304	97	0	57	154
Total Volume	431	1070	0	1501	0	0	0	0	0	929	330	1259	403	1	251	655
% App. Total	28.7	71.3	0		0	0	0		0	73.8	26.2		61.5	0.2	38.3	
PHF	.937	.973	.000	.962	.000	.000	.000	.000	.000	.918	.786	.889	.876	.250	.784	.905

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

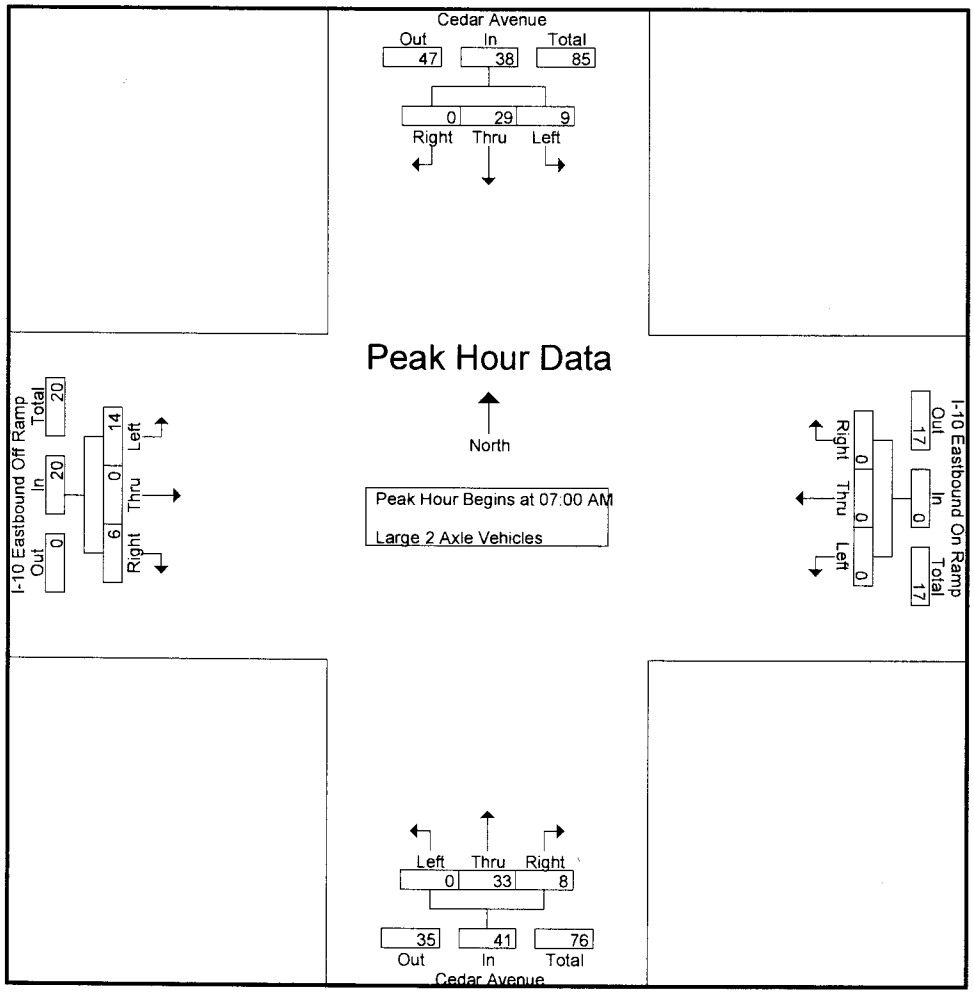
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	8	0	8	0	0	0	0	0	11	2	13	2	0	0	2	23
07:15 AM	4	5	0	9	0	0	0	0	0	9	1	10	7	0	0	7	26
07:30 AM	2	8	0	10	0	0	0	0	0	6	3	9	1	0	4	5	24
07:45 AM	3	8	0	11	0	0	0	0	0	7	2	9	4	0	2	6	26
Total	9	29	0	38	0	0	0	0	0	33	8	41	14	0	6	20	99
08:00 AM	3	8	0	11	0	0	0	0	0	9	2	11	3	0	5	8	30
08:15 AM	6	9	0	15	0	0	0	0	0	6	7	13	5	0	4	9	37
08:30 AM	2	7	0	9	0	0	0	0	0	22	2	24	7	0	1	8	41
08:45 AM	5	10	0	15	0	0	0	0	0	7	6	13	5	0	5	10	38
Total	16	34	0	50	0	0	0	0	0	44	17	61	20	0	15	35	146
Grand Total	25	63	0	88	0	0	0	0	0	77	25	102	34	0	21	55	245
Apprch %	28.4	71.6	0		0	0	0		0	75.5	24.5		61.8	0	38.2		
Total %	10.2	25.7	0	35.9	0	0	0	0	0	31.4	10.2	41.6	13.9	0	8.6	22.4	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**8**	0	8	0	0	0	0	0	**11**	2	**13**	2	0	0	2	23
07:15 AM	**4**	5	0	9	0	0	0	0	0	9	1	10	**7**	0	0	**7**	**26**
07:30 AM	2	8	0	10	0	0	0	0	0	6	**3**	9	1	0	**4**	5	24
07:45 AM	3	8	0	**11**	0	0	0	0	0	7	2	9	4	0	2	6	26
Total Volume	9	29	0	38	0	0	0	0	0	33	8	41	14	0	6	20	99
% App. Total	23.7	76.3	0		0	0	0		0	80.5	19.5		70	0	30		
PHF	.563	.906	.000	.864	.000	.000	.000	.000	.000	.750	.667	.788	.500	.000	.375	.714	.952

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	**8**	0	8	0	0	0	0	0	**11**	2	**13**	2	0	0	2
+15 mins.	**4**	5	0	9	0	0	0	0	0	9	1	10	**7**	0	0	**7**
+30 mins.	2	8	0	10	0	0	0	0	0	6	**3**	9	1	0	**4**	5
+45 mins.	3	8	0	**11**	0	0	0	0	0	7	2	9	4	0	2	6
Total Volume	9	29	0	38	0	0	0	0	0	33	8	41	14	0	6	20
% App. Total	23.7	76.3	0		0	0	0		0	80.5	19.5		70	0	30	
PHF	.563	.906	.000	.864	.000	.000	.000	.000	.000	.750	.667	.788	.500	.000	.375	.714

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

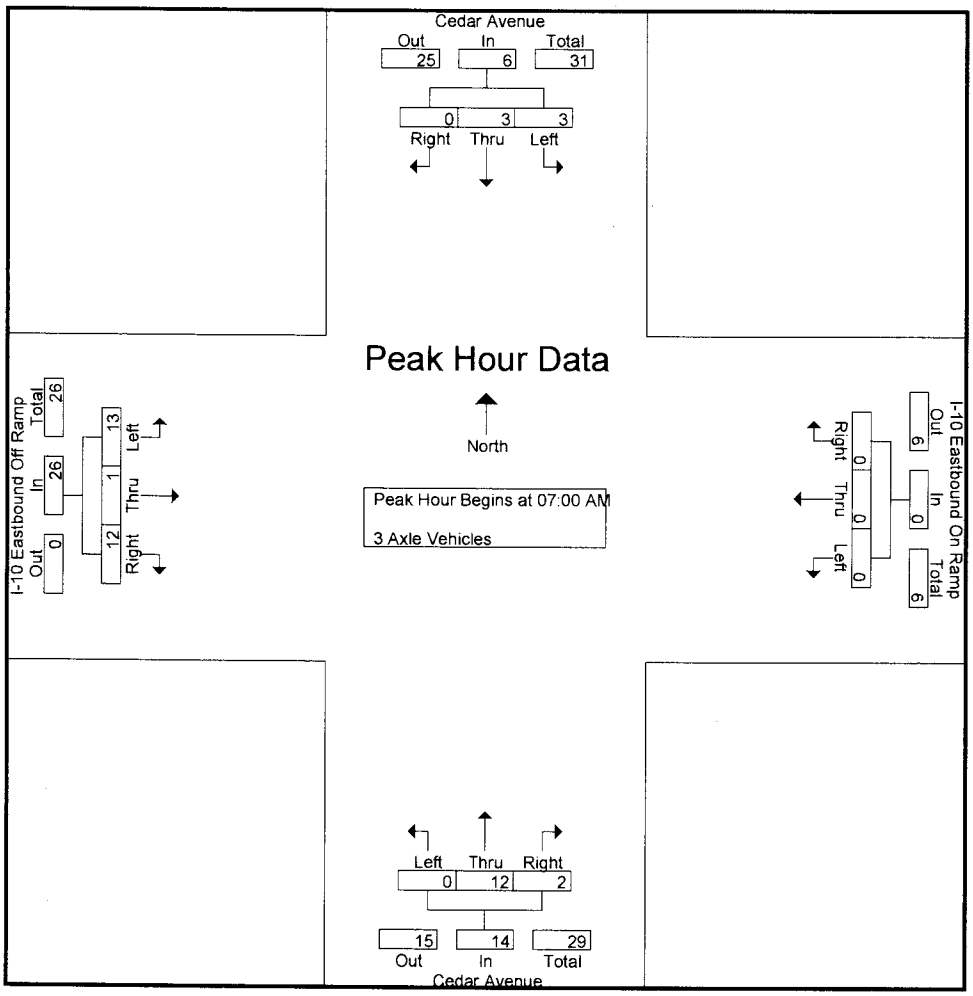
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	4	4	7
07:15 AM	0	0	0	0	0	0	0	0	0	1	1	2	2	0	4	6	8
07:30 AM	1	0	0	1	0	0	0	0	0	7	1	8	5	0	3	8	17
07:45 AM	2	2	0	4	0	0	0	0	0	2	0	2	6	1	1	8	14
Total	3	3	0	6	0	0	0	0	0	12	2	14	13	1	12	26	46
08:00 AM	1	3	0	4	0	0	0	0	0	5	2	7	2	0	1	3	14
08:15 AM	0	1	0	1	0	0	0	0	0	6	1	7	1	0	0	1	9
08:30 AM	0	2	0	2	0	0	0	0	0	2	0	2	1	0	2	3	7
08:45 AM	0	0	0	0	0	0	0	0	0	2	1	3	1	0	1	2	5
Total	1	6	0	7	0	0	0	0	0	15	4	19	5	0	4	9	35
Grand Total	4	9	0	13	0	0	0	0	0	27	6	33	18	1	16	35	81
Apprch %	30.8	69.2	0		0	0	0		0	81.8	18.2		51.4	2.9	45.7		
Total %	4.9	11.1	0	16	0	0	0	0	0	33.3	7.4	40.7	22.2	1.2	19.8	43.2	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	**4**	4	7
07:15 AM	0	0	0	0	0	0	0	0	0	1	**1**	2	2	0	4	6	8
07:30 AM	1	0	0	1	0	0	0	0	0	**7**	1	**8**	5	0	3	**8**	**17**
07:45 AM	**2**	**2**	0	**4**	0	0	0	0	0	2	0	2	**6**	**1**	1	8	14
Total Volume	3	3	0	6	0	0	0	0	0	12	2	14	13	1	12	26	46
% App. Total	50	50	0		0	0	0		0	85.7	14.3		50	3.8	46.2		
PHF	.375	.375	.000	.375	.000	.000	.000	.000	.000	.429	.500	.438	.542	.250	.750	.813	.676

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	2	0	2	0	0	**4**	4
+15 mins.	0	0	0	0	0	0	0	0	0	1	**1**	2	2	0	4	6
+30 mins.	1	0	0	1	0	0	0	0	0	**7**	1	**8**	5	0	3	**8**
+45 mins.	**2**	**2**	0	**4**	0	0	0	0	0	2	0	2	**6**	**1**	1	8
Total Volume	3	3	0	6	0	0	0	0	0	12	2	14	13	1	12	26
% App. Total	50	50	0		0	0	0		0	85.7	14.3		50	3.8	46.2	
PHF	.375	.375	.000	.375	.000	.000	.000	.000	.000	.429	.500	.438	.542	.250	.750	.813

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

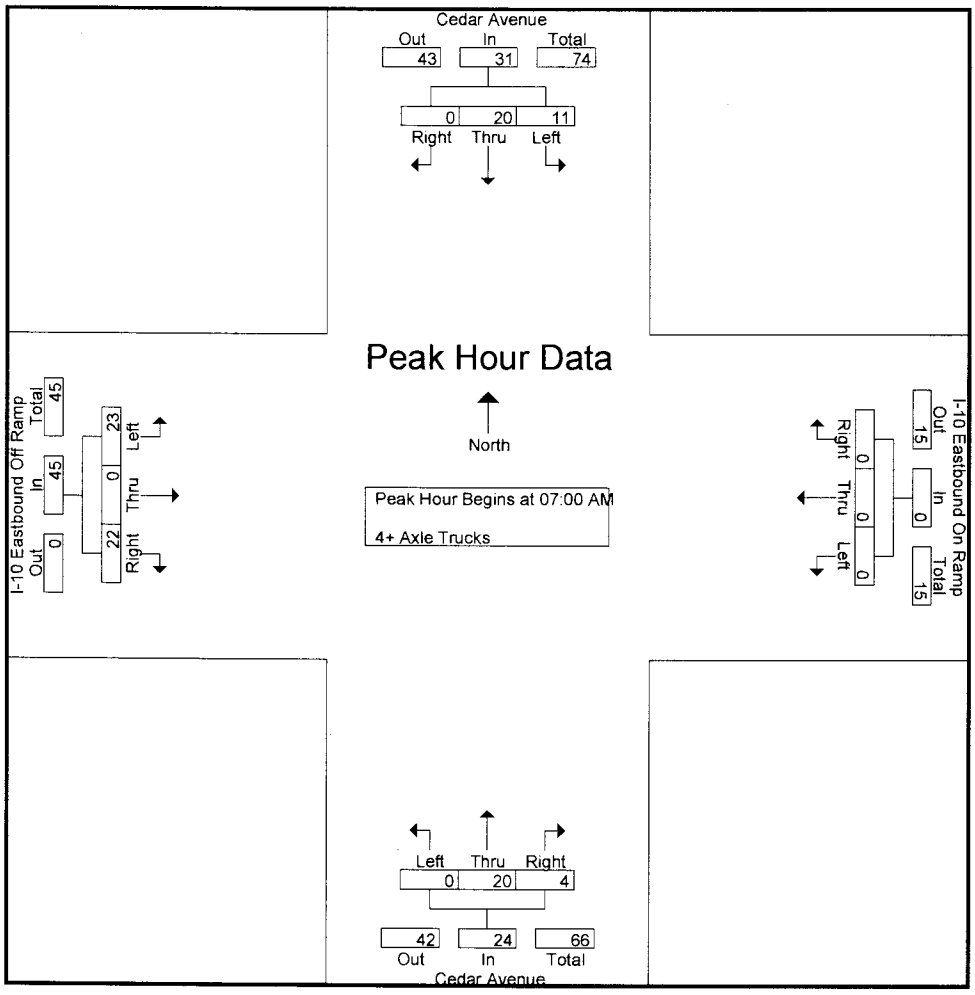
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	4	0	10	0	0	0	0	0	2	1	3	6	0	6	12	25
07:15 AM	1	4	0	5	0	0	0	0	0	3	1	4	6	0	5	11	20
07:30 AM	2	7	0	9	0	0	0	0	0	6	1	7	6	0	8	14	30
07:45 AM	2	5	0	7	0	0	0	0	0	9	1	10	5	0	3	8	25
Total	11	20	0	31	0	0	0	0	0	20	4	24	23	0	22	45	100
08:00 AM	2	5	0	7	0	0	0	0	0	7	2	9	4	0	6	10	26
08:15 AM	2	5	0	7	0	0	0	0	0	5	3	8	4	0	4	8	23
08:30 AM	1	6	0	7	0	0	0	0	0	6	1	7	2	0	2	4	18
08:45 AM	1	1	0	2	0	0	0	0	0	10	4	14	3	0	8	11	27
Total	6	17	0	23	0	0	0	0	0	28	10	38	13	0	20	33	94
Grand Total	17	37	0	54	0	0	0	0	0	48	14	62	36	0	42	78	194
Apprch %	31.5	68.5	0		0	0	0		0	77.4	22.6		46.2	0	53.8		
Total %	8.8	19.1	0	27.8	0	0	0	0	0	24.7	7.2	32	18.6	0	21.6	40.2	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**6**	4	0	**10**	0	0	0	0	0	2	**1**	3	**6**	0	6	12	25
07:15 AM	1	4	0	5	0	0	0	0	0	3	1	4	6	0	5	11	20
07:30 AM	2	**7**	0	9	0	0	0	0	0	6	1	7	6	0	**8**	**14**	**30**
07:45 AM	2	5	0	7	0	0	0	0	0	**9**	1	**10**	5	0	3	8	25
Total Volume	11	20	0	31	0	0	0	0	0	20	4	24	23	0	22	45	100
% App. Total	35.5	64.5	0		0	0	0		0	83.3	16.7		51.1	0	48.9		
PHF	.458	.714	.000	.775	.000	.000	.000	.000	.000	.556	1.00	.600	.958	.000	.688	.804	.833

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**6**	4	0	**10**	0	0	0	0	0	2	**1**	3	**6**	0	6	12
+15 mins.	1	4	0	5	0	0	0	0	0	3	1	4	6	0	5	11
+30 mins.	2	**7**	0	9	0	0	0	0	0	6	1	7	6	0	**8**	**14**
+45 mins.	2	5	0	7	0	0	0	0	0	**9**	1	**10**	5	0	3	8
Total Volume	11	20	0	31	0	0	0	0	0	20	4	24	23	0	22	45
% App. Total	35.5	64.5	0		0	0	0		0	83.3	16.7		51.1	0	48.9	
PHF	.458	.714	.000	.775	.000	.000	.000	.000	.000	.556	1.000	.600	.958	.000	.688	.804

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

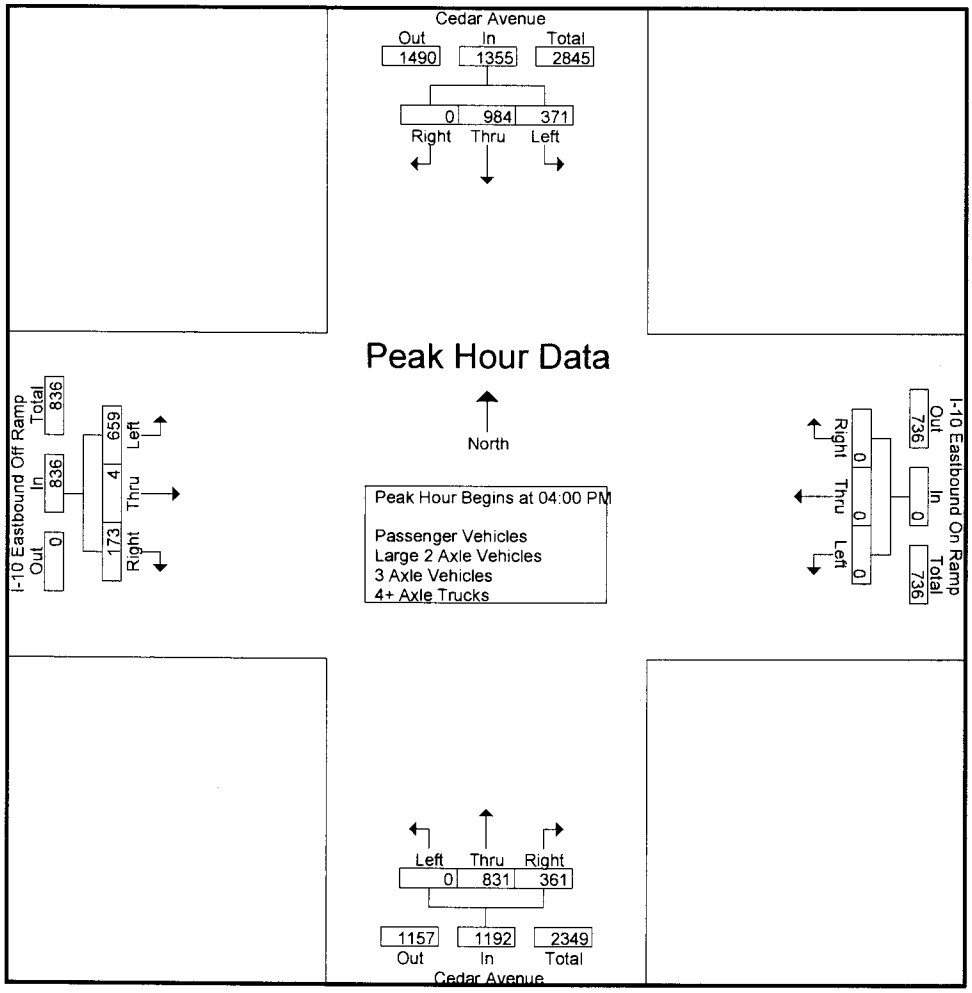
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	97	236	0	333	0	0	0	0	0	223	90	313	173	0	44	217	863
04:15 PM	84	222	0	306	0	0	0	0	0	193	80	273	177	1	54	232	811
04:30 PM	101	266	0	367	0	0	0	0	0	212	95	307	166	1	32	199	873
04:45 PM	89	260	0	349	0	0	0	0	0	203	96	299	143	2	43	188	836
Total	371	984	0	1355	0	0	0	0	0	831	361	1192	659	4	173	836	3383
05:00 PM	98	249	0	347	0	0	0	0	0	209	76	285	159	1	42	202	834
05:15 PM	97	258	0	355	0	0	0	0	0	185	54	239	163	0	35	198	792
05:30 PM	87	261	0	348	0	0	0	0	0	216	48	264	133	0	30	163	775
05:45 PM	102	238	0	340	0	0	0	0	0	230	88	318	162	0	38	200	858
Total	384	1006	0	1390	0	0	0	0	0	840	266	1106	617	1	145	763	3259
Grand Total	755	1990	0	2745	0	0	0	0	0	1671	627	2298	1276	5	318	1599	6642
Apprch %	27.5	72.5	0		0	0	0		0	72.7	27.3		79.8	0.3	19.9		
Total %	11.4	30	0	41.3	0	0	0	0	0	25.2	9.4	34.6	19.2	0.1	4.8	24.1	
Passenger Vehicles	726	1901	0	2627	0	0	0	0	0	1588	594	2182	1213	2	262	1477	6286
% Passenger Vehicles	96.2	95.5	0	95.7	0	0	0	0	0	95	94.7	95	95.1	40	82.4	92.4	94.6
Large 2 Axle Vehicles	12	45	0	57	0	0	0	0	0	40	13	53	27	0	26	53	163
% Large 2 Axle Vehicles	1.6	2.3	0	2.1	0	0	0	0	0	2.4	2.1	2.3	2.1	0	8.2	3.3	2.5
3 Axle Vehicles	3	25	0	28	0	0	0	0	0	11	2	13	11	3	9	23	64
% 3 Axle Vehicles	0.4	1.3	0	1	0	0	0	0	0	0.7	0.3	0.6	0.9	60	2.8	1.4	1
4+ Axle Trucks	14	19	0	33	0	0	0	0	0	32	18	50	25	0	21	46	129
% 4+ Axle Trucks	1.9	1	0	1.2	0	0	0	0	0	1.9	2.9	2.2	2	0	6.6	2.9	1.9

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	97	236	0	333	0	0	0	0	0	**223**	90	**313**	173	0	44	217	863
04:15 PM	84	222	0	306	0	0	0	0	0	193	80	273	**177**	1	**54**	**232**	811
04:30 PM	**101**	**266**	0	**367**	0	0	0	0	0	212	95	307	166	1	32	199	**873**
04:45 PM	89	260	0	349	0	0	0	0	0	203	**96**	299	143	**2**	43	188	836
Total Volume	371	984	0	1355	0	0	0	0	0	831	361	1192	659	4	173	836	3383
% App. Total	27.4	72.6	0		0	0	0		0	69.7	30.3		78.8	0.5	20.7		
PHF	.918	.925	.000	.923	.000	.000	.000	.000	.000	.932	.940	.952	.931	.500	.801	.901	.969

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**101**	**266**	0	**367**	0	0	0	0	0	**223**	90	**313**	173	0	44	217
+15 mins.	89	260	0	349	0	0	0	0	0	193	80	273	**177**	1	**54**	**232**
+30 mins.	98	249	0	347	0	0	0	0	0	212	95	307	166	1	32	199
+45 mins.	97	258	0	355	0	0	0	0	0	203	**96**	299	143	**2**	43	188
Total Volume	385	1033	0	1418	0	0	0	0	0	831	361	1192	659	4	173	836
% App. Total	27.2	72.8	0		0	0	0		0	69.7	30.3		78.8	0.5	20.7	
PHF	.953	.971	.000	.966	.000	.000	.000	.000	.000	.932	.940	.952	.931	.500	.801	.901

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

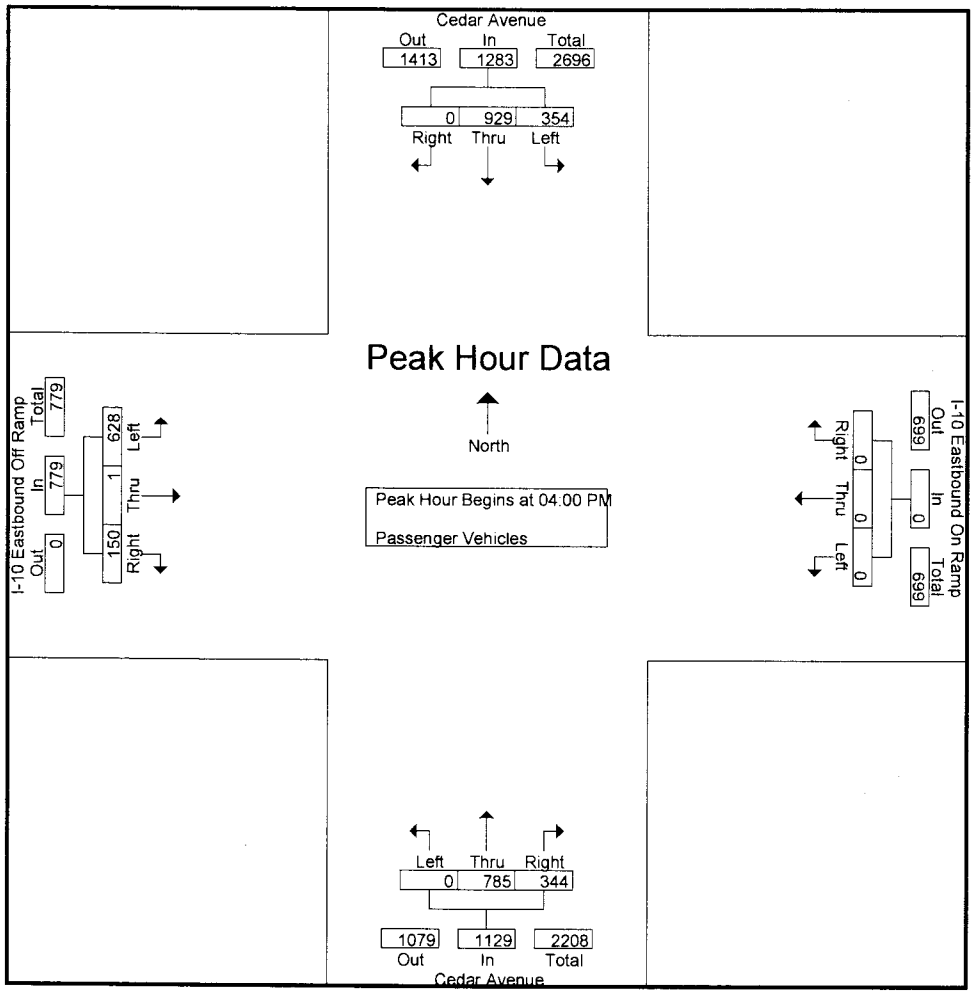
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	90	215	0	305	0	0	0	0	0	207	87	294	161	0	40	201	800
04:15 PM	81	215	0	296	0	0	0	0	0	184	75	259	172	1	48	221	776
04:30 PM	95	255	0	350	0	0	0	0	0	199	90	289	159	0	26	185	824
04:45 PM	88	244	0	332	0	0	0	0	0	195	92	287	136	0	36	172	791
Total	354	929	0	1283	0	0	0	0	0	785	344	1129	628	1	150	779	3191
05:00 PM	97	239	0	336	0	0	0	0	0	197	72	269	154	1	32	187	792
05:15 PM	94	254	0	348	0	0	0	0	0	176	49	225	157	0	32	189	762
05:30 PM	85	249	0	334	0	0	0	0	0	205	46	251	123	0	20	143	728
05:45 PM	96	230	0	326	0	0	0	0	0	225	83	308	151	0	28	179	813
Total	372	972	0	1344	0	0	0	0	0	803	250	1053	585	1	112	698	3095
Grand Total	726	1901	0	2627	0	0	0	0	0	1588	594	2182	1213	2	262	1477	6286
Apprch %	27.6	72.4	0		0	0	0		0	72.8	27.2		82.1	0.1	17.7		
Total %	11.5	30.2	0	41.8	0	0	0	0	0	25.3	9.4	34.7	19.3	0	4.2	23.5	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	90	215	0	305	0	0	0	0	0	**207**	87	**294**	161	0	40	201	800
04:15 PM	81	215	0	296	0	0	0	0	0	184	75	259	**172**	**1**	**48**	**221**	776
04:30 PM	**95**	**255**	0	**350**	0	0	0	0	0	199	90	289	159	0	26	185	**824**
04:45 PM	88	244	0	332	0	0	0	0	0	195	**92**	287	136	0	36	172	791
Total Volume	354	929	0	1283	0	0	0	0	0	785	344	1129	628	1	150	779	3191
% App. Total	27.6	72.4	0		0	0	0		0	69.5	30.5		80.6	0.1	19.3		
PHF	.932	.911	.000	.916	.000	.000	.000	.000	.000	.948	.935	.960	.913	.250	.781	.881	.968

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	90	215	0	305	0	0	0	0	0	**207**	87	**294**	161	0	40	201
+15 mins.	81	215	0	296	0	0	0	0	0	184	75	259	**172**	**1**	**48**	**221**
+30 mins.	**95**	**255**	0	**350**	0	0	0	0	0	199	90	289	159	0	26	185
+45 mins.	88	244	0	332	0	0	0	0	0	195	**92**	287	136	0	36	172
Total Volume	354	929	0	1283	0	0	0	0	0	785	344	1129	628	1	150	779
% App. Total	27.6	72.4	0		0	0	0		0	69.5	30.5		80.6	0.1	19.3	
PHF	.932	.911	.000	.916	.000	.000	.000	.000	.000	.948	.935	.960	.913	.250	.781	.881

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

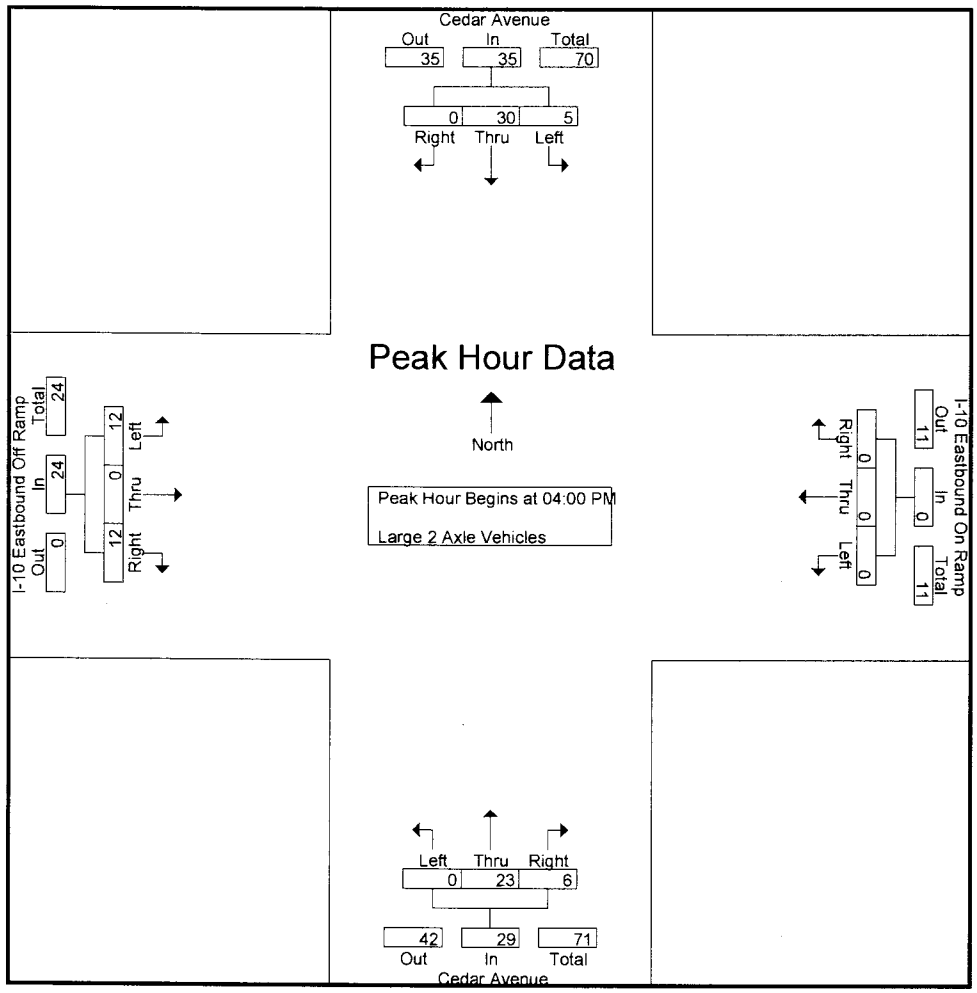
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	16	0	19	0	0	0	0	0	8	2	10	4	0	2	6	35
04:15 PM	0	2	0	2	0	0	0	0	0	5	1	6	1	0	4	5	13
04:30 PM	2	4	0	6	0	0	0	0	0	9	3	12	4	0	3	7	25
04:45 PM	0	8	0	8	0	0	0	0	0	1	0	1	3	0	3	6	15
Total	5	30	0	35	0	0	0	0	0	23	6	29	12	0	12	24	88
05:00 PM	1	6	0	7	0	0	0	0	0	4	2	6	3	0	4	7	20
05:15 PM	2	2	0	4	0	0	0	0	0	5	2	7	4	0	2	6	17
05:30 PM	1	4	0	5	0	0	0	0	0	6	1	7	3	0	4	7	19
05:45 PM	3	3	0	6	0	0	0	0	0	2	2	4	5	0	4	9	19
Total	7	15	0	22	0	0	0	0	0	17	7	24	15	0	14	29	75
Grand Total	12	45	0	57	0	0	0	0	0	40	13	53	27	0	26	53	163
Apprch %	21.1	78.9	0		0	0	0		0	75.5	24.5		50.9	0	49.1		
Total %	7.4	27.6	0	35	0	0	0	0	0	24.5	8	32.5	16.6	0	16	32.5	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**3**	**16**	0	**19**	0	0	0	0	0	8	2	10	**4**	0	2	6	**35**
04:15 PM	0	2	0	2	0	0	0	0	0	5	1	6	1	0	**4**	5	13
04:30 PM	2	4	0	6	0	0	0	0	0	**9**	**3**	**12**	4	0	3	**7**	25
04:45 PM	0	8	0	8	0	0	0	0	0	1	0	1	3	0	3	6	15
Total Volume	5	30	0	35	0	0	0	0	0	23	6	29	12	0	12	24	88
% App. Total	14.3	85.7	0		0	0	0		0	79.3	20.7		50	0	50		
PHF	.417	.469	.000	.461	.000	.000	.000	.000	.000	.639	.500	.604	.750	.000	.750	.857	.629

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**3**	**16**	0	**19**	0	0	0	0	0	8	2	10	**4**	0	2	6
+15 mins.	0	2	0	2	0	0	0	0	0	5	1	6	1	0	**4**	5
+30 mins.	2	4	0	6	0	0	0	0	0	**9**	**3**	**12**	4	0	3	**7**
+45 mins.	0	8	0	8	0	0	0	0	0	1	0	1	3	0	3	6
Total Volume	5	30	0	35	0	0	0	0	0	23	6	29	12	0	12	24
% App. Total	14.3	85.7	0		0	0	0		0	79.3	20.7		50	0	50	
PHF	.417	.469	.000	.461	.000	.000	.000	.000	.000	.639	.500	.604	.750	.000	.750	.857

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

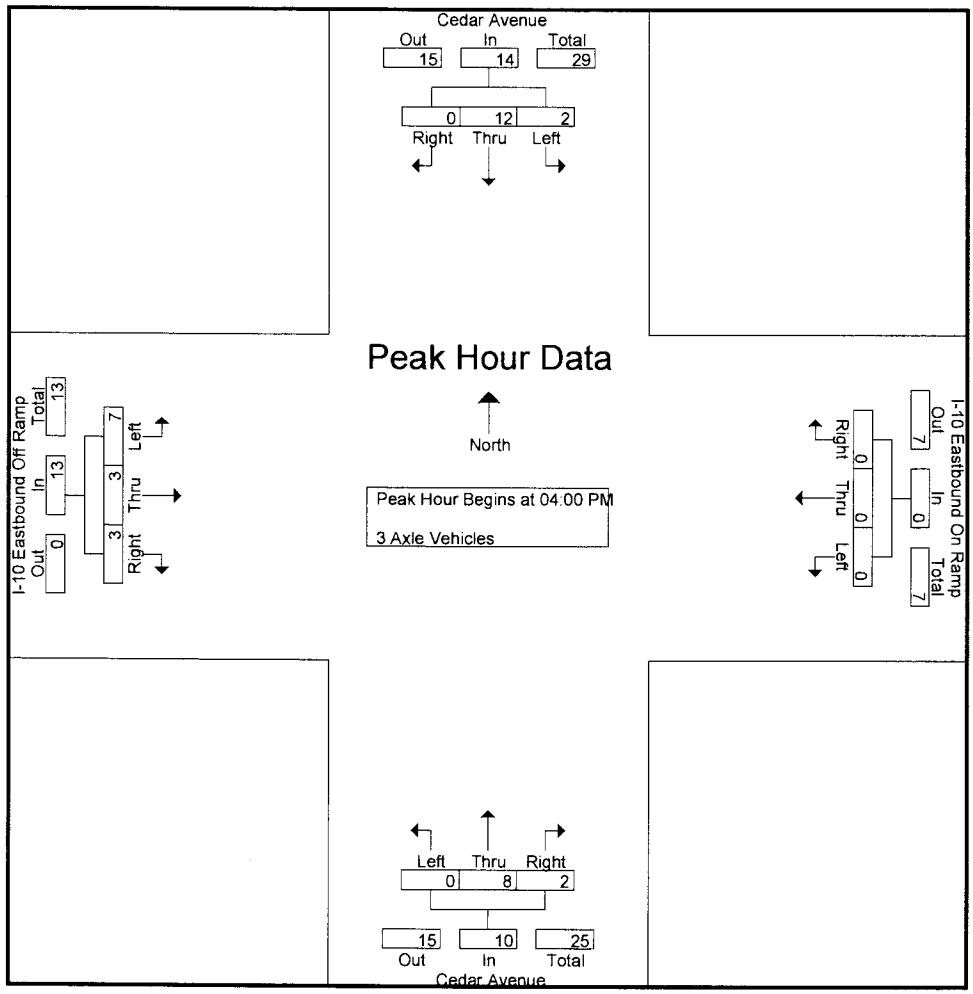
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	2	0	3	0	0	0	0	0	2	0	2	4	0	0	4	9
04:15 PM	1	2	0	3	0	0	0	0	0	2	1	3	1	0	0	1	7
04:30 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	1	1	2	6
04:45 PM	0	5	0	5	0	0	0	0	0	3	1	4	2	2	2	6	15
Total	2	12	0	14	0	0	0	0	0	8	2	10	7	3	3	13	37
05:00 PM	0	3	0	3	0	0	0	0	0	2	0	2	1	0	1	2	7
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
05:30 PM	0	4	0	4	0	0	0	0	0	0	0	0	1	0	1	2	6
05:45 PM	1	4	0	5	0	0	0	0	0	1	0	1	2	0	3	5	11
Total	1	13	0	14	0	0	0	0	0	3	0	3	4	0	6	10	27
Grand Total	3	25	0	28	0	0	0	0	0	11	2	13	11	3	9	23	64
Apprch %	10.7	89.3	0		0	0	0		0	84.6	15.4		47.8	13	39.1		
Total %	4.7	39.1	0	43.8	0	0	0	0	0	17.2	3.1	20.3	17.2	4.7	14.1	35.9	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	2	0	3	0	0	0	0	0	2	0	2	**4**	0	0	**4**	9
04:15 PM	1	2	0	3	0	0	0	0	0	2	**1**	3	1	0	0	1	7
04:30 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	1	1	2	6
04:45 PM	0	**5**	0	**5**	0	0	0	0	0	**3**	1	**4**	2	**2**	**2**	**6**	**15**
Total Volume	2	12	0	14	0	0	0	0	0	8	2	10	7	3	3	13	37
% App. Total	14.3	85.7	0		0	0	0		0	80	20		53.8	23.1	23.1		
PHF	.500	.600	.000	.700	.000	.000	.000	.000	.000	.667	.500	.625	.438	.375	.375	.542	.617

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**1**	2	0	3	0	0	0	0	0	2	0	2	**4**	0	0	4
+15 mins.	1	2	0	3	0	0	0	0	0	2	**1**	3	1	0	0	1
+30 mins.	0	3	0	3	0	0	0	0	0	1	0	1	0	1	1	2
+45 mins.	0	**5**	0	**5**	0	0	0	0	0	**3**	1	**4**	2	**2**	**2**	**6**
Total Volume	2	12	0	14	0	0	0	0	0	8	2	10	7	3	3	13
% App. Total	14.3	85.7	0		0	0	0		0	80	20		53.8	23.1	23.1	
PHF	.500	.600	.000	.700	.000	.000	.000	.000	.000	.667	.500	.625	.438	.375	.375	.542

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

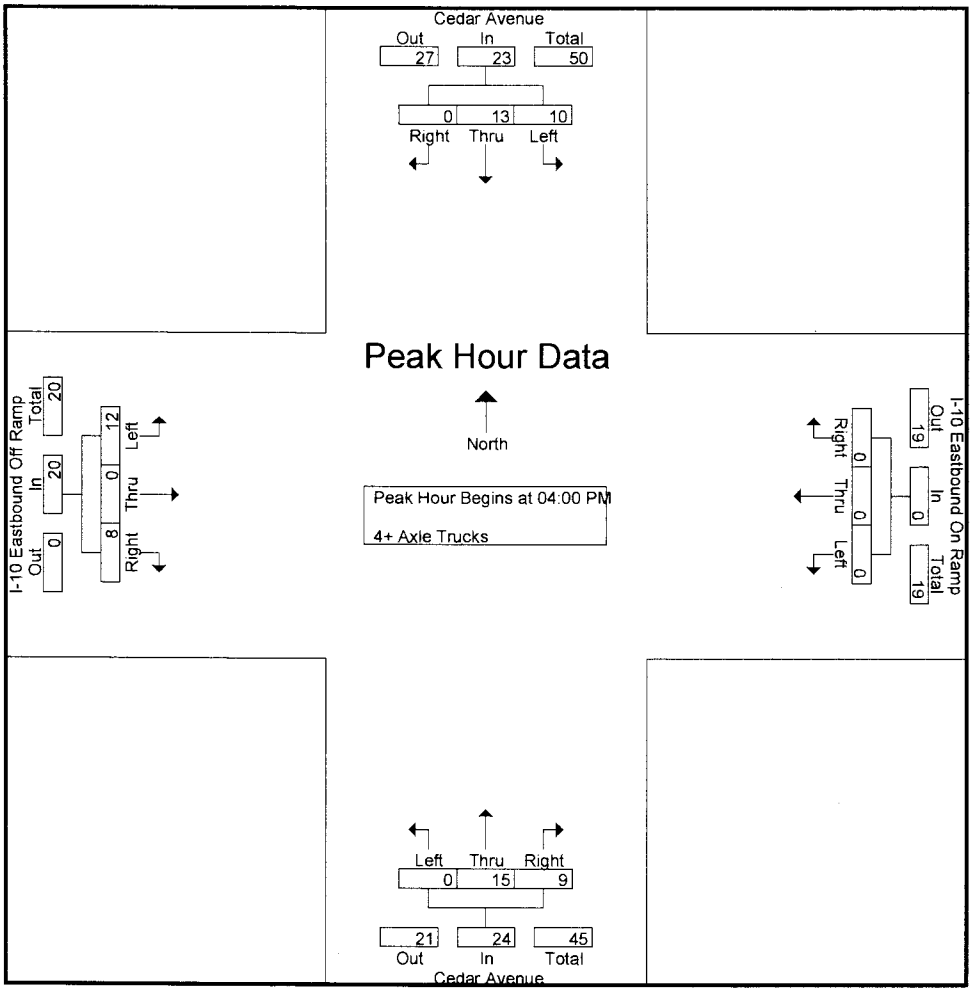
	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	3	0	6	0	0	0	0	0	6	1	7	4	0	2	6	19
04:15 PM	2	3	0	5	0	0	0	0	0	2	3	5	3	0	2	5	15
04:30 PM	4	4	0	8	0	0	0	0	0	3	2	5	3	0	2	5	18
04:45 PM	1	3	0	4	0	0	0	0	0	4	3	7	2	0	2	4	15
Total	10	13	0	23	0	0	0	0	0	15	9	24	12	0	8	20	67
05:00 PM	0	1	0	1	0	0	0	0	0	6	2	8	1	0	5	6	15
05:15 PM	1	0	0	1	0	0	0	0	0	4	3	7	2	0	0	2	10
05:30 PM	1	4	0	5	0	0	0	0	0	5	1	6	6	0	5	11	22
05:45 PM	2	1	0	3	0	0	0	0	0	2	3	5	4	0	3	7	15
Total	4	6	0	10	0	0	0	0	0	17	9	26	13	0	13	26	62
Grand Total	14	19	0	33	0	0	0	0	0	32	18	50	25	0	21	46	129
Apprch %	42.4	57.6	0		0	0	0		0	64	36		54.3	0	45.7		
Total %	10.9	14.7	0	25.6	0	0	0	0	0	24.8	14	38.8	19.4	0	16.3	35.7	

	Cedar Avenue Southbound				I-10 Eastbound On Ramp Westbound				Cedar Avenue Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	3	3	0	6	0	0	0	0	0	**6**	1	**7**	**4**	0	**2**	**6**	**19**
04:15 PM	2	3	0	5	0	0	0	0	0	2	**3**	5	3	0	2	5	15
04:30 PM	**4**	**4**	0	**8**	0	0	0	0	0	3	2	5	3	0	2	5	18
04:45 PM	1	3	0	4	0	0	0	0	0	4	3	7	2	0	2	4	15
Total Volume	10	13	0	23	0	0	0	0	0	15	9	24	12	0	8	20	67
% App. Total	43.5	56.5	0		0	0	0		0	62.5	37.5		60	0	40		
PHF	.625	.813	.000	.719	.000	.000	.000	.000	.000	.625	.750	.857	.750	.000	1.00	.833	.882

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : CSBCE10EPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	3	3	0	6	0	0	0	0	0	**6**	1	**7**	**4**	0	**2**	**6**
+15 mins.	2	3	0	5	0	0	0	0	0	2	**3**	5	3	0	2	5
+30 mins.	**4**	**4**	0	**8**	0	0	0	0	0	3	2	5	3	0	2	5
+45 mins.	1	3	0	4	0	0	0	0	0	4	3	7	2	0	2	4
Total Volume	10	13	0	23	0	0	0	0	0	15	9	24	12	0	8	20
% App. Total	43.5	56.5	0		0	0	0		0	62.5	37.5		60	0	40	
PHF	.625	.813	.000	.719	.000	.000	.000	.000	.000	.625	.750	.857	.750	.000	1.000	.833

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

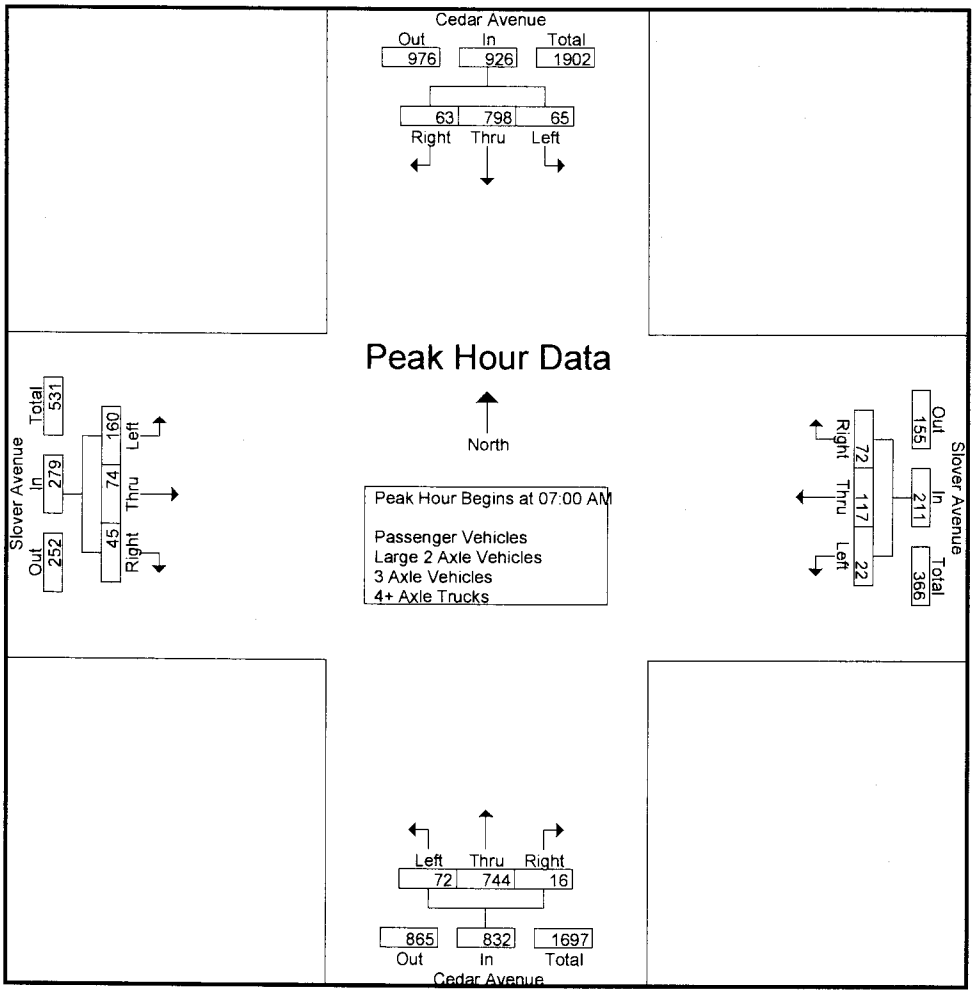
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	165	14	190	2	34	18	54	28	166	7	201	36	21	13	70	515
07:15 AM	14	194	17	225	5	33	28	66	19	190	4	213	46	14	8	68	572
07:30 AM	13	238	14	265	11	30	10	51	14	207	4	225	47	27	13	87	628
07:45 AM	27	201	18	246	4	20	16	40	11	181	1	193	31	12	11	54	533
Total	65	798	63	926	22	117	72	211	72	744	16	832	160	74	45	279	2248
08:00 AM	12	176	18	206	3	8	16	27	10	148	3	161	26	16	9	51	445
08:15 AM	12	167	15	194	2	13	19	34	12	134	2	148	38	8	8	54	430
08:30 AM	21	164	12	197	1	11	32	44	11	137	3	151	32	15	5	52	444
08:45 AM	12	140	19	171	2	21	21	44	12	153	4	169	34	15	12	61	445
Total	57	647	64	768	8	53	88	149	45	572	12	629	130	54	34	218	1764
Grand Total	122	1445	127	1694	30	170	160	360	117	1316	28	1461	290	128	79	497	4012
Apprch %	7.2	85.3	7.5		8.3	47.2	44.4		8	90.1	1.9		58.4	25.8	15.9		
Total %	3	36	3.2	42.2	0.7	4.2	4	9	2.9	32.8	0.7	36.4	7.2	3.2	2	12.4	
Passenger Vehicles	94	1358	117	1569	26	152	108	286	111	1230	25	1366	277	118	70	465	3686
% Passenger Vehicles	77	94	92.1	92.6	86.7	89.4	67.5	79.4	94.9	93.5	89.3	93.5	95.5	92.2	88.6	93.6	91.9
Large 2 Axle Vehicles	8	26	5	39	2	9	30	41	1	43	0	44	7	7	6	20	144
% Large 2 Axle Vehicles	6.6	1.8	3.9	2.3	6.7	5.3	18.8	11.4	0.9	3.3	0	3	2.4	5.5	7.6	4	3.6
3 Axle Vehicles	3	18	0	21	0	3	8	11	1	9	1	11	2	0	1	3	46
% 3 Axle Vehicles	2.5	1.2	0	1.2	0	1.8	5	3.1	0.9	0.7	3.6	0.8	0.7	0	1.3	0.6	1.1
4+ Axle Trucks	17	43	5	65	2	6	14	22	4	34	2	40	4	3	2	9	136
% 4+ Axle Trucks	13.9	3	3.9	3.8	6.7	3.5	8.8	6.1	3.4	2.6	7.1	2.7	1.4	2.3	2.5	1.8	3.4

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	11	165	14	190	2	**34**	18	54	**28**	166	**7**	201	36	21	**13**	70	515
07:15 AM	14	194	17	225	5	33	**28**	**66**	19	190	4	213	46	14	8	68	572
07:30 AM	13	**238**	14	**265**	**11**	30	10	51	14	**207**	4	**225**	**47**	**27**	13	**87**	**628**
07:45 AM	**27**	201	**18**	246	4	20	16	40	11	181	1	193	31	12	11	54	533
Total Volume	65	798	63	926	22	117	72	211	72	744	16	832	160	74	45	279	2248
% App. Total	7	86.2	6.8		10.4	55.5	34.1		8.7	89.4	1.9		57.3	26.5	16.1		
PHF	.602	.838	.875	.874	.500	.860	.643	.799	.643	.899	.571	.924	.851	.685	.865	.802	.895

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	14	194	17	225	2	**34**	18	54	**28**	166	**7**	201	36	21	**13**	70
+15 mins.	13	**238**	14	**265**	5	33	**28**	**66**	19	190	4	213	46	14	8	68
+30 mins.	**27**	201	**18**	246	**11**	30	10	51	14	**207**	4	**225**	**47**	**27**	13	**87**
+45 mins.	12	176	18	206	4	20	16	40	11	181	1	193	31	12	11	54
Total Volume	66	809	67	942	22	117	72	211	72	744	16	832	160	74	45	279
% App. Total	7	85.9	7.1		10.4	55.5	34.1		8.7	89.4	1.9		57.3	26.5	16.1	
PHF	.611	.850	.931	.889	.500	.860	.643	.799	.643	.899	.571	.924	.851	.685	.865	.802

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

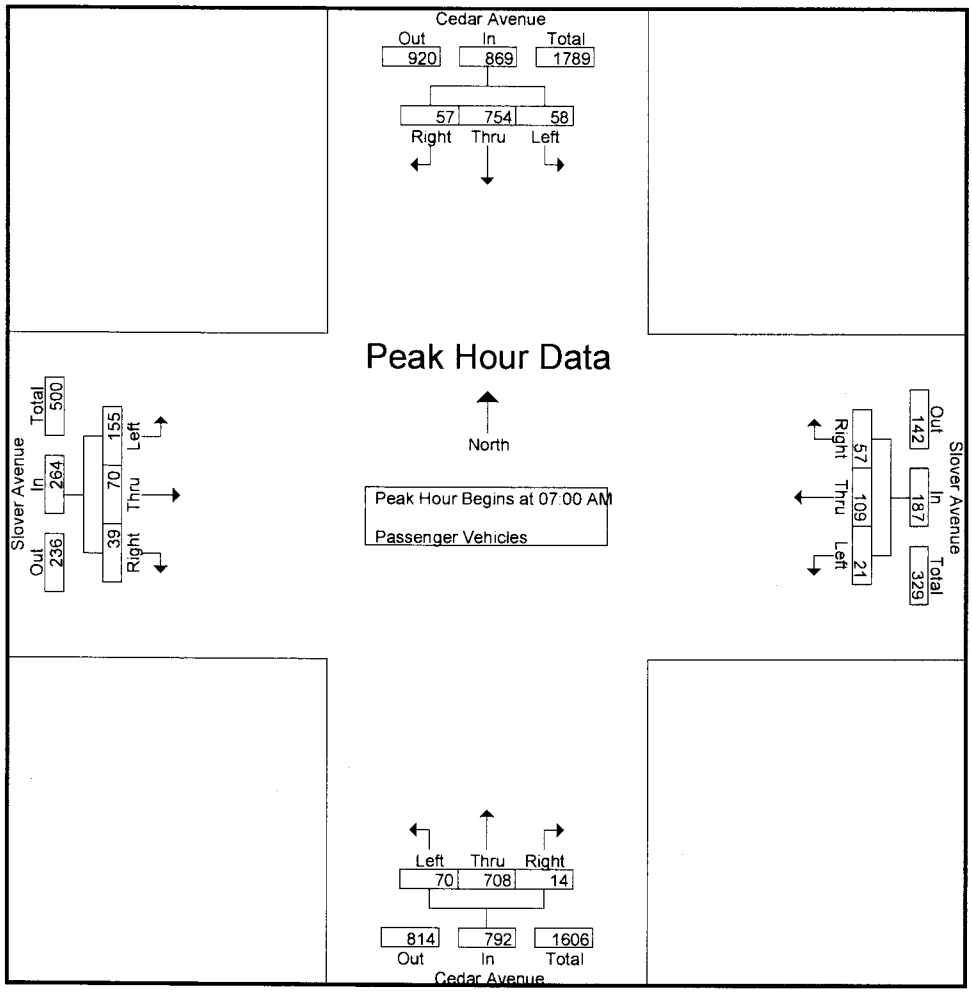
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	10	154	12	176	2	32	14	48	28	160	6	194	36	21	12	69	487
07:15 AM	14	182	16	212	4	30	23	57	18	184	4	206	45	14	6	65	540
07:30 AM	11	224	14	249	11	28	9	48	14	196	3	213	46	24	12	82	592
07:45 AM	23	194	15	232	4	19	11	34	10	168	1	179	28	11	9	48	493
Total	58	754	57	869	21	109	57	187	70	708	14	792	155	70	39	264	2112
08:00 AM	8	164	17	189	1	8	11	20	8	135	2	145	24	14	7	45	399
08:15 AM	8	155	14	177	2	11	14	27	10	124	2	136	34	7	8	49	389
08:30 AM	13	153	12	178	0	9	18	27	11	127	3	141	31	13	4	48	394
08:45 AM	7	132	17	156	2	15	8	25	12	136	4	152	33	14	12	59	392
Total	36	604	60	700	5	43	51	99	41	522	11	574	122	48	31	201	1574
Grand Total	94	1358	117	1569	26	152	108	286	111	1230	25	1366	277	118	70	465	3686
Apprch %	6	86.6	7.5		9.1	53.1	37.8		8.1	90	1.8		59.6	25.4	15.1		
Total %	2.6	36.8	3.2	42.6	0.7	4.1	2.9	7.8	3	33.4	0.7	37.1	7.5	3.2	1.9	12.6	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	10	154	12	176	2	**32**	14	48	**28**	160	**6**	194	36	21	**12**	69	487
07:15 AM	14	182	**16**	212	4	30	**23**	**57**	18	184	4	206	45	14	6	65	540
07:30 AM	11	**224**	14	**249**	**11**	28	9	48	14	**196**	3	**213**	**46**	**24**	12	**82**	**592**
07:45 AM	**23**	194	15	232	4	19	11	34	10	168	1	179	28	11	9	48	493
Total Volume	58	754	57	869	21	109	57	187	70	708	14	792	155	70	39	264	2112
% App. Total	6.7	86.8	6.6		11.2	58.3	30.5		8.8	89.4	1.8		58.7	26.5	14.8		
PHF	.630	.842	.891	.872	.477	.852	.620	.820	.625	.903	.583	.930	.842	.729	.813	.805	.892

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	10	154	12	176	2	**32**	14	48	**28**	160	**6**	194	36	21	**12**	69
+15 mins.	14	182	**16**	212	4	30	**23**	**57**	18	184	4	206	45	14	6	65
+30 mins.	11	**224**	14	**249**	**11**	28	9	48	14	**196**	3	**213**	**46**	**24**	12	**82**
+45 mins.	**23**	194	15	232	4	19	11	34	10	168	1	179	28	11	9	48
Total Volume	58	754	57	869	21	109	57	187	70	708	14	792	155	70	39	264
% App. Total	6.7	86.8	6.6		11.2	58.3	30.5		8.8	89.4	1.8		58.7	26.5	14.8	
PHF	.630	.842	.891	.872	.477	.852	.620	.820	.625	.903	.583	.930	.842	.729	.813	.805

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

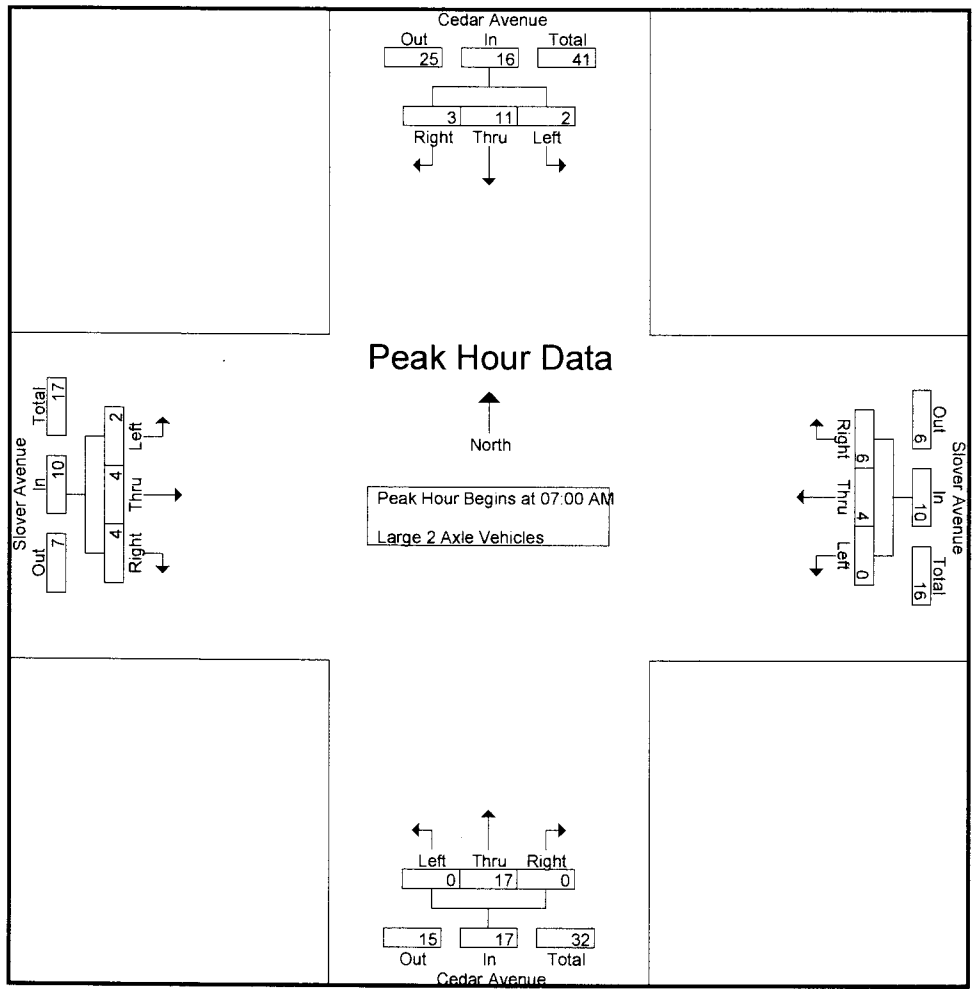
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	1	4	0	1	1	2	0	5	0	5	0	0	1	1	12
07:15 AM	0	2	1	3	0	1	1	2	0	1	0	1	0	0	0	0	6
07:30 AM	1	4	0	5	0	1	1	2	0	5	0	5	0	3	1	4	16
07:45 AM	1	2	1	4	0	1	3	4	0	6	0	6	2	1	2	5	19
Total	2	11	3	16	0	4	6	10	0	17	0	17	2	4	4	10	53
08:00 AM	1	2	1	4	2	0	2	4	0	7	0	7	0	1	1	2	17
08:15 AM	3	5	0	8	0	0	1	1	1	6	0	7	4	1	0	5	21
08:30 AM	1	5	0	6	0	0	11	11	0	7	0	7	1	0	1	2	26
08:45 AM	1	3	1	5	0	5	10	15	0	6	0	6	0	1	0	1	27
Total	6	15	2	23	2	5	24	31	1	26	0	27	5	3	2	10	91
Grand Total	8	26	5	39	2	9	30	41	1	43	0	44	7	7	6	20	144
Apprch %	20.5	66.7	12.8		4.9	22	73.2		2.3	97.7	0		35	35	30		
Total %	5.6	18.1	3.5	27.1	1.4	6.2	20.8	28.5	0.7	29.9	0	30.6	4.9	4.9	4.2	13.9	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	3	**1**	4	0	**1**	1	2	0	5	0	5	0	0	1	1	12
07:15 AM	0	2	1	3	0	1	1	2	0	1	0	1	0	0	0	0	6
07:30 AM	**1**	**4**	0	**5**	0	1	1	2	0	5	0	5	0	**3**	1	4	16
07:45 AM	1	2	1	4	0	1	**3**	4	0	**6**	0	**6**	**2**	1	**2**	**5**	**19**
Total Volume	2	11	3	16	0	4	6	10	0	17	0	17	2	4	4	10	53
% App. Total	12.5	68.8	18.8		0	40	60		0	100	0		20	40	40		
PHF	.500	.688	.750	.800	.000	1.00	.500	.625	.000	.708	.000	.708	.250	.333	.500	.500	.697

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	3	**1**	4	0	**1**	1	2	0	5	0	5	0	0	1	1
+15 mins.	0	2	1	3	0	1	1	2	0	1	0	1	0	0	0	0
+30 mins.	**1**	**4**	0	**5**	0	1	1	2	0	5	0	5	0	**3**	1	4
+45 mins.	1	2	1	4	0	1	**3**	**4**	0	**6**	0	**6**	**2**	1	**2**	**5**
Total Volume	2	11	3	16	0	4	6	10	0	17	0	17	2	4	4	10
% App. Total	12.5	68.8	18.8		0	40	60		0	100	0		20	40	40	
PHF	.500	.688	.750	.800	.000	1.000	.500	.625	.000	.708	.000	.708	.250	.333	.500	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

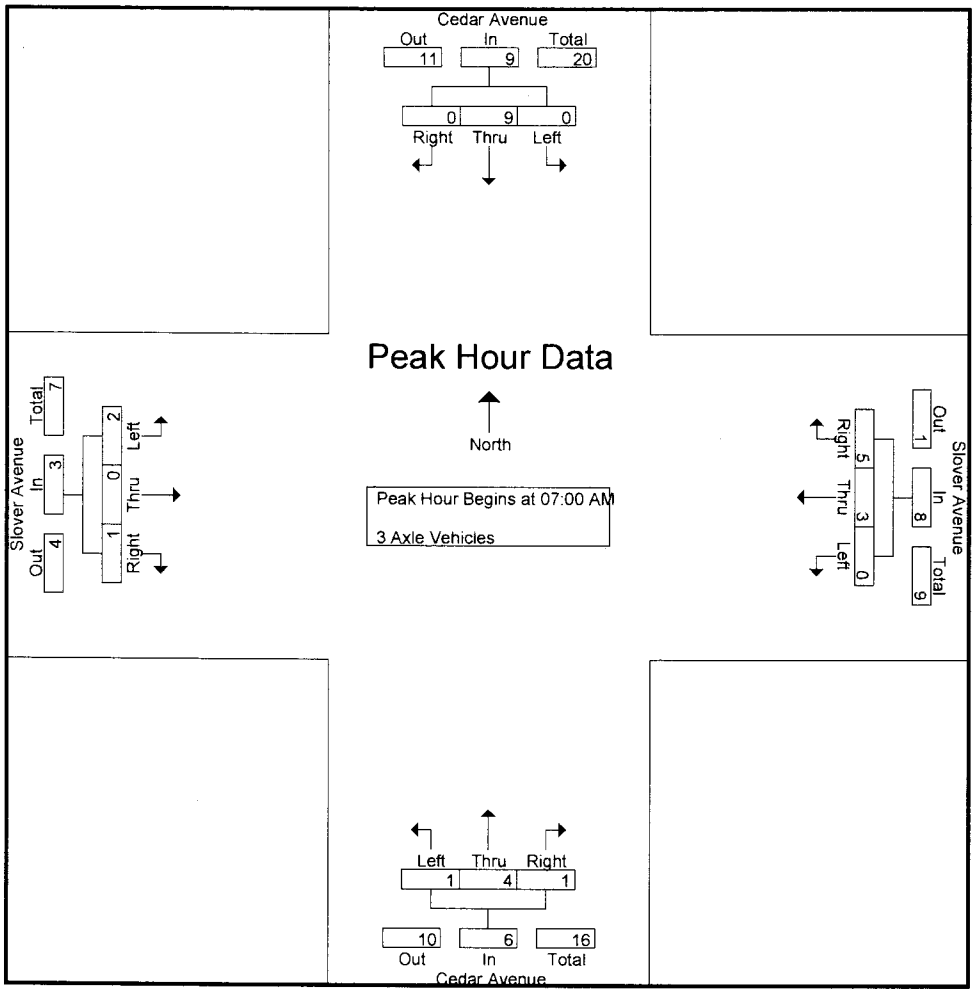
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	1	1	0	0	1	1	0	0	0	0	3
07:15 AM	0	3	0	3	0	2	3	5	1	1	0	2	1	0	1	2	12
07:30 AM	0	2	0	2	0	1	0	1	0	2	0	2	1	0	0	1	6
07:45 AM	0	3	0	3	0	0	1	1	0	1	0	1	0	0	0	0	5
Total	0	9	0	9	0	3	5	8	1	4	1	6	2	0	1	3	26
08:00 AM	1	5	0	6	0	0	1	1	0	1	0	1	0	0	0	0	8
08:15 AM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
08:30 AM	2	2	0	4	0	0	1	1	0	1	0	1	0	0	0	0	6
08:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	3	9	0	12	0	0	3	3	0	5	0	5	0	0	0	0	20
Grand Total	3	18	0	21	0	3	8	11	1	9	1	11	2	0	1	3	46
Apprch %	14.3	85.7	0		0	27.3	72.7		9.1	81.8	9.1		66.7	0	33.3		
Total %	6.5	39.1	0	45.7	0	6.5	17.4	23.9	2.2	19.6	2.2	23.9	4.3	0	2.2	6.5	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	1	1	0	0	**1**	1	0	0	0	0	3
07:15 AM	0	**3**	0	**3**	0	**2**	**3**	**5**	**1**	1	0	**2**	**1**	0	**1**	**2**	**12**
07:30 AM	0	2	0	2	0	1	0	1	0	**2**	0	2	1	0	0	1	6
07:45 AM	0	3	0	3	0	0	1	1	0	1	0	1	0	0	0	0	5
Total Volume	0	9	0	9	0	3	5	8	1	4	1	6	2	0	1	3	26
% App. Total	0	100	0		0	37.5	62.5		16.7	66.7	16.7		66.7	0	33.3		
PHF	.000	.750	.000	.750	.000	.375	.417	.400	.250	.500	.250	.750	.500	.000	.250	.375	.542

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	0	0	1	1	0	0	**1**	1	0	0	0	0
+15 mins.	0	**3**	0	**3**	0	**2**	**3**	**5**	**1**	1	0	**2**	**1**	0	**1**	**2**
+30 mins.	0	2	0	2	0	1	0	1	0	**2**	0	2	1	0	0	1
+45 mins.	0	3	0	3	0	0	1	1	0	1	0	1	0	0	0	0
Total Volume	0	9	0	9	0	3	5	8	1	4	1	6	2	0	1	3
% App. Total	0	100	0		0	37.5	62.5		16.7	66.7	16.7		66.7	0	33.3	
PHF	.000	.750	.000	.750	.000	.375	.417	.400	.250	.500	.250	.750	.500	.000	.250	.375

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

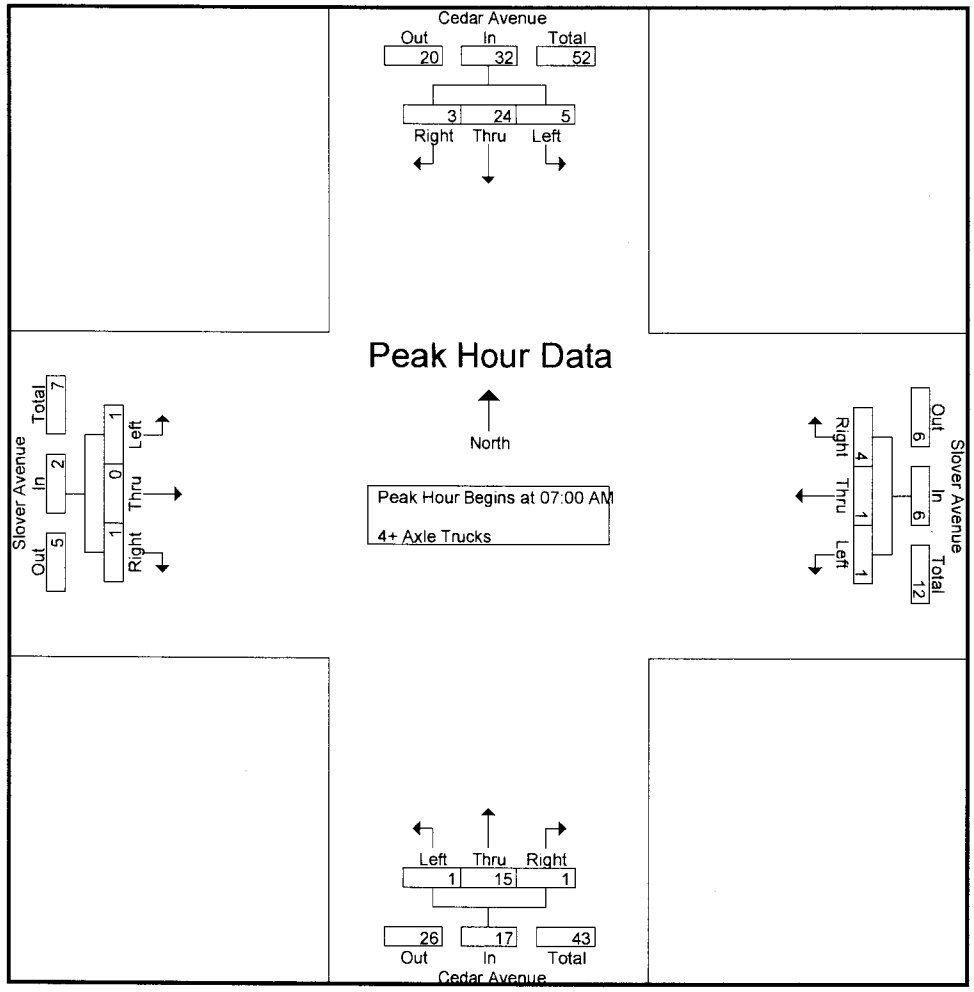
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	7	1	9	0	1	2	3	0	1	0	1	0	0	0	0	13
07:15 AM	0	7	0	7	1	0	1	2	0	4	0	4	0	0	1	1	14
07:30 AM	1	8	0	9	0	0	0	0	0	4	1	5	0	0	0	0	14
07:45 AM	3	2	2	7	0	0	1	1	1	6	0	7	1	0	0	1	16
Total	5	24	3	32	1	1	4	6	1	15	1	17	1	0	1	2	57
08:00 AM	2	5	0	7	0	0	2	2	2	5	1	8	2	1	1	4	21
08:15 AM	1	6	1	8	0	2	3	5	1	3	0	4	0	0	0	0	17
08:30 AM	5	4	0	9	1	2	2	5	0	2	0	2	0	2	0	2	18
08:45 AM	4	4	1	9	0	1	3	4	0	9	0	9	1	0	0	1	23
Total	12	19	2	33	1	5	10	16	3	19	1	23	3	3	1	7	79
Grand Total	17	43	5	65	2	6	14	22	4	34	2	40	4	3	2	9	136
Apprch %	26.2	66.2	7.7		9.1	27.3	63.6		10	85	5		44.4	33.3	22.2		
Total %	12.5	31.6	3.7	47.8	1.5	4.4	10.3	16.2	2.9	25	1.5	29.4	2.9	2.2	1.5	6.6	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	7	1	**9**	0	**1**	**2**	**3**	0	1	0	1	0	0	0	0	13
07:15 AM	0	7	0	7	**1**	0	1	2	0	4	0	4	0	0	**1**	**1**	14
07:30 AM	1	**8**	0	9	0	0	0	0	0	4	**1**	5	0	0	0	0	14
07:45 AM	**3**	2	**2**	7	0	0	1	1	**1**	**6**	0	**7**	**1**	0	0	1	**16**
Total Volume	5	24	3	32	1	1	4	6	1	15	1	17	1	0	1	2	57
% App. Total	15.6	75	9.4		16.7	16.7	66.7		5.9	88.2	5.9		50	0	50		
PHF	.417	.750	.375	.889	.250	.250	.500	.500	.250	.625	.250	.607	.250	.000	.250	.500	.891

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	1	7	1	**9**	0	**1**	**2**	**3**	0	1	0	1	0	0	0	0
+15 mins.	0	7	0	7	**1**	0	1	2	0	4	0	4	0	0	**1**	**1**
+30 mins.	1	**8**	0	9	0	0	0	0	0	4	**1**	5	0	0	0	0
+45 mins.	**3**	2	**2**	7	0	0	1	1	**1**	**6**	0	**7**	**1**	0	0	1
Total Volume	5	24	3	32	1	1	4	6	1	15	1	17	1	0	1	2
% App. Total	15.6	75	9.4		16.7	16.7	66.7		5.9	88.2	5.9		50	0	50	
PHF	.417	.750	.375	.889	.250	.250	.500	.500	.250	.625	.250	.607	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

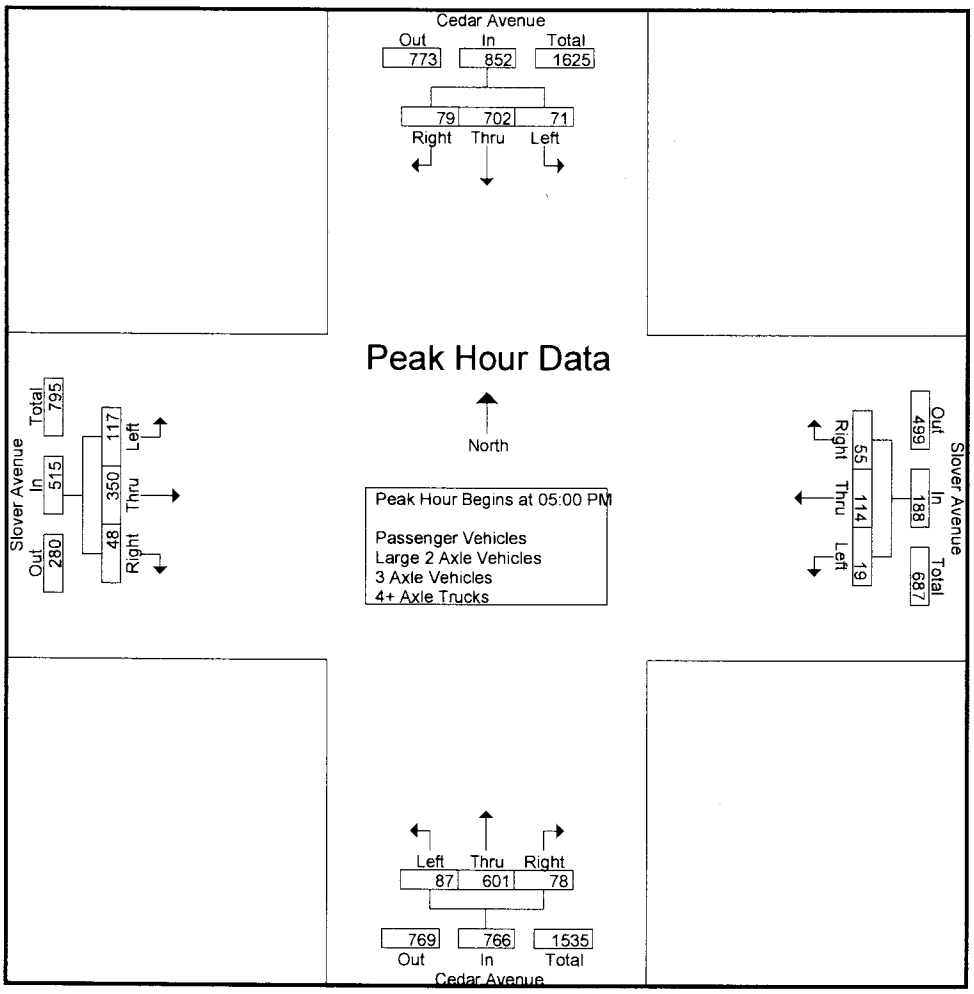
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	20	192	14	226	4	32	15	51	14	177	11	202	38	73	7	118	597
04:15 PM	20	180	16	216	4	33	16	53	25	149	5	179	34	59	15	108	556
04:30 PM	18	172	23	213	4	21	8	33	23	173	16	212	32	71	24	127	585
04:45 PM	20	184	21	225	11	22	20	53	25	156	12	193	33	60	13	106	577
Total	78	728	74	880	23	108	59	190	87	655	44	786	137	263	59	459	2315
05:00 PM	12	174	18	204	5	22	9	36	26	165	17	208	23	75	15	113	561
05:15 PM	25	181	26	232	4	32	16	52	20	148	18	186	24	81	8	113	583
05:30 PM	17	174	18	209	4	24	18	46	12	117	22	151	35	108	13	156	562
05:45 PM	17	173	17	207	6	36	12	54	29	171	21	221	35	86	12	133	615
Total	71	702	79	852	19	114	55	188	87	601	78	766	117	350	48	515	2321
Grand Total	149	1430	153	1732	42	222	114	378	174	1256	122	1552	254	613	107	974	4636
Apprch %	8.6	82.6	8.8		11.1	58.7	30.2		11.2	80.9	7.9		26.1	62.9	11		
Total %	3.2	30.8	3.3	37.4	0.9	4.8	2.5	8.2	3.8	27.1	2.6	33.5	5.5	13.2	2.3	21	
Passenger Vehicles	120	1362	144	1626	39	203	98	340	162	1200	115	1477	241	572	100	913	4356
% Passenger Vehicles	80.5	95.2	94.1	93.9	92.9	91.4	86	89.9	93.1	95.5	94.3	95.2	94.9	93.3	93.5	93.7	94
Large 2 Axle Vehicles	9	32	4	45	2	4	4	10	2	22	1	25	7	11	2	20	100
% Large 2 Axle Vehicles	6	2.2	2.6	2.6	4.8	1.8	3.5	2.6	1.1	1.8	0.8	1.6	2.8	1.8	1.9	2.1	2.2
3 Axle Vehicles	4	24	0	28	0	8	3	11	4	8	0	12	0	9	2	11	62
% 3 Axle Vehicles	2.7	1.7	0	1.6	0	3.6	2.6	2.9	2.3	0.6	0	0.8	0	1.5	1.9	1.1	1.3
4+ Axle Trucks	16	12	5	33	1	7	9	17	6	26	6	38	6	21	3	30	118
% 4+ Axle Trucks	10.7	0.8	3.3	1.9	2.4	3.2	7.9	4.5	3.4	2.1	4.9	2.4	2.4	3.4	2.8	3.1	2.5

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	174	18	204	5	22	9	36	26	165	17	208	23	75	**15**	113	561
05:15 PM	**25**	**181**	**26**	**232**	4	32	16	52	20	148	18	186	24	81	8	113	583
05:30 PM	17	174	18	209	4	24	**18**	46	12	117	**22**	151	**35**	**108**	13	**156**	562
05:45 PM	17	173	17	207	**6**	**36**	12	**54**	**29**	**171**	21	**221**	35	86	12	133	**615**
Total Volume	71	702	79	852	19	114	55	188	87	601	78	766	117	350	48	515	2321
% App. Total	8.3	82.4	9.3		10.1	60.6	29.3		11.4	78.5	10.2		22.7	68	9.3		
PHF	.710	.970	.760	.918	.792	.792	.764	.870	.750	.879	.886	.867	.836	.810	.800	.825	.943

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:30 PM				05:00 PM			
+0 mins.	**20**	**192**	14	**226**	4	32	15	51	23	**173**	16	**212**	23	75	**15**	113
+15 mins.	20	180	16	216	4	**33**	16	**53**	25	156	12	193	24	81	8	113
+30 mins.	18	172	**23**	213	4	21	8	33	**26**	165	17	208	**35**	**108**	13	**156**
+45 mins.	20	184	21	225	**11**	22	**20**	53	20	148	**18**	186	35	86	12	133
Total Volume	78	728	74	880	23	108	59	190	94	642	63	799	117	350	48	515
% App. Total	8.9	82.7	8.4		12.1	56.8	31.1		11.8	80.4	7.9		22.7	68	9.3	
PHF	.975	.948	.804	.973	.523	.818	.738	.896	.904	.928	.875	.942	.836	.810	.800	.825

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

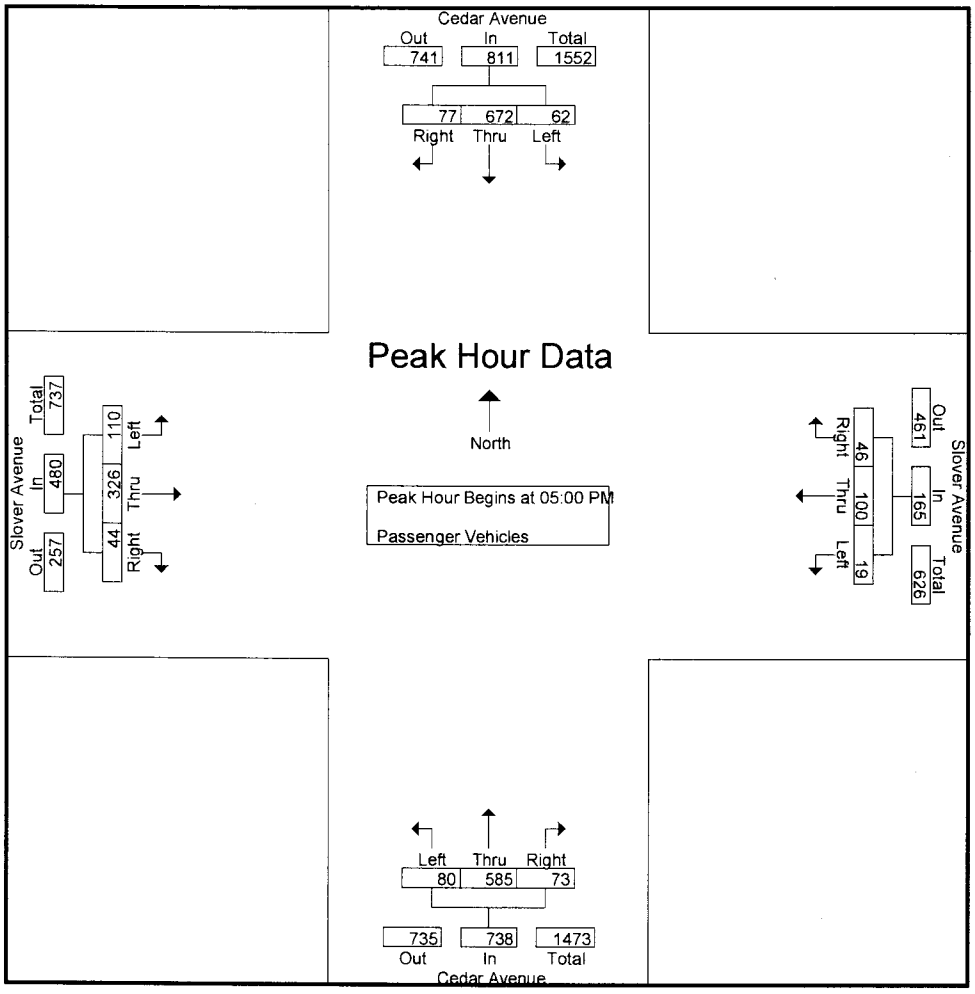
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	13	183	13	209	4	30	15	49	13	164	11	188	38	70	7	115	561
04:15 PM	17	174	14	205	3	32	13	48	24	138	5	167	32	58	14	104	524
04:30 PM	14	162	20	196	4	20	7	31	21	165	14	200	30	65	22	117	544
04:45 PM	14	171	20	205	9	21	17	47	24	148	12	184	31	53	13	97	533
Total	58	690	67	815	20	103	52	175	82	615	42	739	131	246	56	433	2162
05:00 PM	9	162	17	188	5	20	7	32	23	160	17	200	22	72	12	106	526
05:15 PM	22	177	25	224	4	30	12	46	20	143	18	181	21	76	8	105	556
05:30 PM	16	167	18	201	4	20	16	40	11	114	20	145	32	101	12	145	531
05:45 PM	15	166	17	198	6	30	11	47	26	168	18	212	35	77	12	124	581
Total	62	672	77	811	19	100	46	165	80	585	73	738	110	326	44	480	2194
Grand Total	120	1362	144	1626	39	203	98	340	162	1200	115	1477	241	572	100	913	4356
Apprch %	7.4	83.8	8.9		11.5	59.7	28.8		11	81.2	7.8		26.4	62.7	11		
Total %	2.8	31.3	3.3	37.3	0.9	4.7	2.2	7.8	3.7	27.5	2.6	33.9	5.5	13.1	2.3	21	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	9	162	17	188	5	20	7	32	23	160	17	200	22	72	**12**	106	526
05:15 PM	**22**	**177**	**25**	**224**	4	**30**	12	46	20	143	18	181	21	76	8	105	556
05:30 PM	16	167	18	201	4	20	**16**	40	11	114	**20**	145	32	**101**	12	**145**	531
05:45 PM	15	166	17	198	**6**	30	11	**47**	**26**	**168**	18	**212**	**35**	77	12	124	**581**
Total Volume	62	672	77	811	19	100	46	165	80	585	73	738	110	326	44	480	2194
% App. Total	7.6	82.9	9.5		11.5	60.6	27.9		10.8	79.3	9.9		22.9	67.9	9.2		
PHF	.705	.949	.770	.905	.792	.833	.719	.878	.769	.871	.913	.870	.786	.807	.917	.828	.944

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	9	162	17	188	5	20	7	32	23	160	17	200	22	72	**12**	106
+15 mins.	**22**	**177**	**25**	**224**	4	**30**	12	46	20	143	18	181	21	76	8	105
+30 mins.	16	167	18	201	4	20	**16**	40	11	114	**20**	145	32	**101**	12	**145**
+45 mins.	15	166	17	198	**6**	30	11	**47**	**26**	**168**	18	**212**	**35**	77	12	124
Total Volume	62	672	77	811	19	100	46	165	80	585	73	738	110	326	44	480
% App. Total	7.6	82.9	9.5		11.5	60.6	27.9		10.8	79.3	9.9		22.9	67.9	9.2	
PHF	.705	.949	.770	.905	.792	.833	.719	.878	.769	.871	.913	.870	.786	.807	.917	.828

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

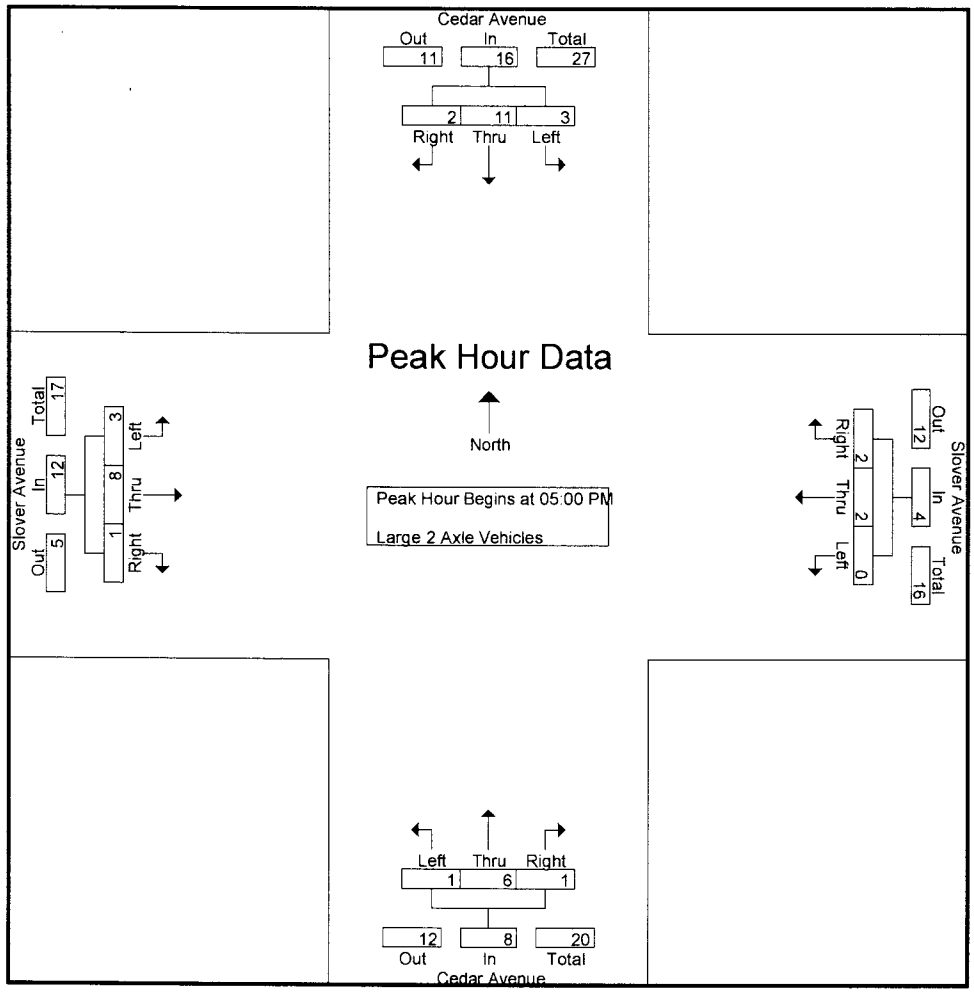
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	5	0	6	0	0	0	0	0	7	0	7	0	0	0	0	13
04:15 PM	1	3	1	5	1	1	2	4	0	4	0	4	2	0	0	2	15
04:30 PM	1	5	1	7	0	0	0	0	1	4	0	5	1	2	1	4	16
04:45 PM	3	8	0	11	1	1	0	2	0	1	0	1	1	1	0	2	16
Total	6	21	2	29	2	2	2	6	1	16	0	17	4	3	1	8	60
05:00 PM	1	6	1	8	0	0	1	1	0	2	0	2	0	0	1	1	12
05:15 PM	0	2	1	3	0	0	0	0	0	2	0	2	1	0	0	1	6
05:30 PM	0	1	0	1	0	1	1	2	1	1	1	3	2	5	0	7	13
05:45 PM	2	2	0	4	0	1	0	1	0	1	0	1	0	3	0	3	9
Total	3	11	2	16	0	2	2	4	1	6	1	8	3	8	1	12	40
Grand Total	9	32	4	45	2	4	4	10	2	22	1	25	7	11	2	20	100
Apprch %	20	71.1	8.9		20	40	40		8	88	4		35	55	10		
Total %	9	32	4	45	2	4	4	10	2	22	1	25	7	11	2	20	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	**6**	**1**	**8**	0	0	**1**	1	0	**2**	0	2	0	0	**1**	1	12
05:15 PM	0	2	1	3	0	0	0	0	0	2	0	2	1	0	0	1	6
05:30 PM	0	1	0	1	0	**1**	1	**2**	**1**	1	**1**	**3**	**2**	**5**	0	**7**	**13**
05:45 PM	**2**	2	0	**4**	0	1	0	1	0	1	0	1	0	3	0	3	9
Total Volume	3	11	2	16	0	2	2	4	1	6	1	8	3	8	1	12	40
% App. Total	18.8	68.8	12.5		0	50	50		12.5	75	12.5		25	66.7	8.3		
PHF	.375	.458	.500	.500	.000	.500	.500	.500	.250	.750	.250	.667	.375	.400	.250	.429	.769

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	1	**6**	**1**	**8**	0	0	**1**	1	0	**2**	0	2	0	0	**1**	1
+15 mins.	0	2	1	3	0	0	0	0	0	2	0	2	1	0	0	1
+30 mins.	0	1	0	1	0	**1**	1	**2**	**1**	1	**1**	**3**	**2**	**5**	0	**7**
+45 mins.	**2**	2	0	4	0	1	0	1	0	1	0	1	0	3	0	3
Total Volume	3	11	2	16	0	2	2	4	1	6	1	8	3	8	1	12
% App. Total	18.8	68.8	12.5		0	50	50		12.5	75	12.5		25	66.7	8.3	
PHF	.375	.458	.500	.500	.000	.500	.500	.500	.250	.750	.250	.667	.375	.400	.250	.429

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

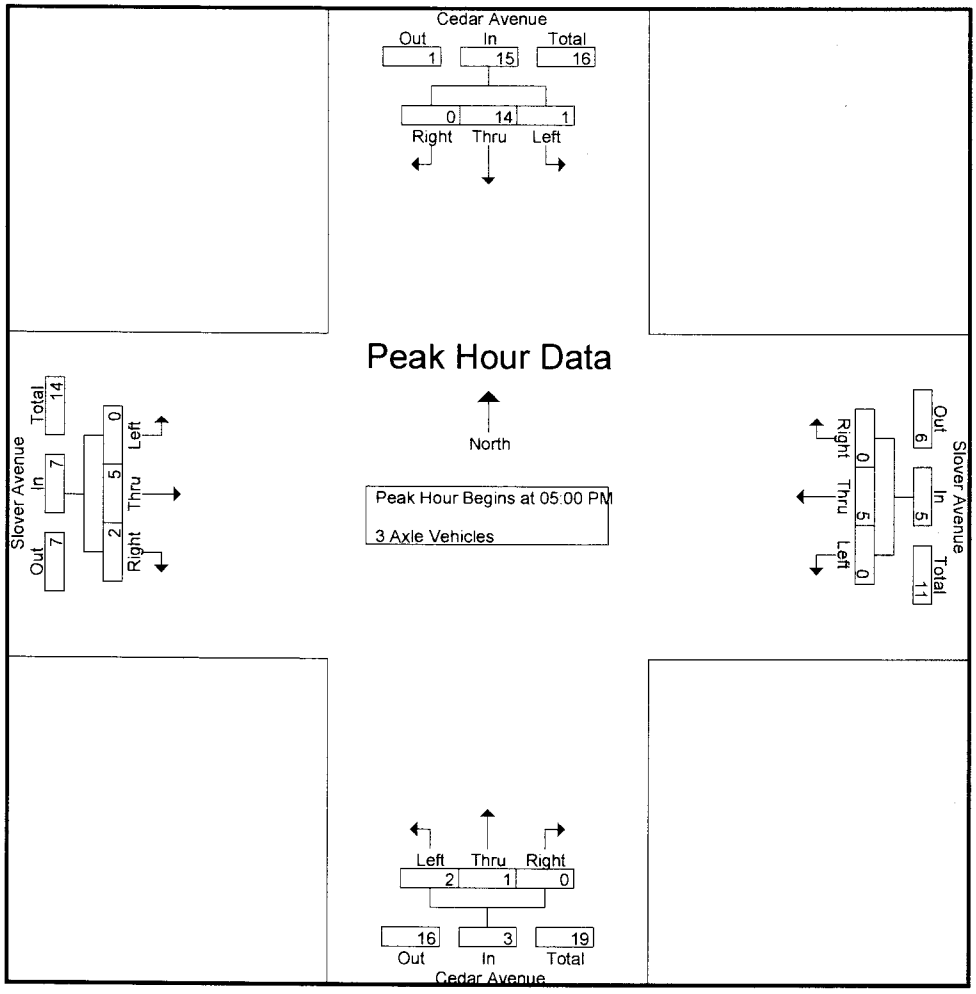
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	2	0	3	0	2	0	2	0	2	0	2	0	1	0	1	8
04:15 PM	0	1	0	1	0	0	1	1	1	2	0	3	0	0	0	0	5
04:30 PM	2	3	0	5	0	1	1	2	1	1	0	2	0	1	0	1	10
04:45 PM	0	4	0	4	0	0	1	1	0	2	0	2	0	2	0	2	9
Total	3	10	0	13	0	3	3	6	2	7	0	9	0	4	0	4	32
05:00 PM	0	5	0	5	0	1	0	1	1	0	0	1	0	1	2	3	10
05:15 PM	1	2	0	3	0	1	0	1	0	0	0	0	0	2	0	2	6
05:30 PM	0	3	0	3	0	1	0	1	0	1	0	1	0	1	0	1	6
05:45 PM	0	4	0	4	0	2	0	2	1	0	0	1	0	1	0	1	8
Total	1	14	0	15	0	5	0	5	2	1	0	3	0	5	2	7	30
Grand Total	4	24	0	28	0	8	3	11	4	8	0	12	0	9	2	11	62
Apprch %	14.3	85.7	0		0	72.7	27.3		33.3	66.7	0		0	81.8	18.2		
Total %	6.5	38.7	0	45.2	0	12.9	4.8	17.7	6.5	12.9	0	19.4	0	14.5	3.2	17.7	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**5**	0	**5**	0	1	0	1	**1**	0	0	**1**	0	1	**2**	**3**	**10**
05:15 PM	**1**	2	0	3	0	1	0	1	0	0	0	0	0	**2**	0	2	6
05:30 PM	0	3	0	3	0	1	0	1	0	**1**	0	1	0	1	0	1	6
05:45 PM	0	**4**	0	**4**	0	**2**	0	**2**	1	0	0	1	0	1	0	1	8
Total Volume	1	14	0	15	0	5	0	5	2	1	0	3	0	5	2	7	30
% App. Total	6.7	93.3	0		0	100	0		66.7	33.3	0		0	71.4	28.6		
PHF	.250	.700	.000	.750	.000	.625	.000	.625	.500	.250	.000	.750	.000	.625	.250	.583	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**5**	0	**5**	0	1	0	1	**1**	0	0	**1**	0	1	**2**	**3**
+15 mins.	**1**	2	0	3	0	1	0	1	0	0	0	0	0	**2**	0	2
+30 mins.	0	3	0	3	0	1	0	1	0	**1**	0	1	0	1	0	1
+45 mins.	0	4	0	4	0	**2**	0	**2**	1	0	0	1	0	1	0	1
Total Volume	1	14	0	15	0	5	0	5	2	1	0	3	0	5	2	7
% App. Total	6.7	93.3	0		0	100	0		66.7	33.3	0		0	71.4	28.6	
PHF	.250	.700	.000	.750	.000	.625	.000	.625	.500	.250	.000	.750	.000	.625	.250	.583

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

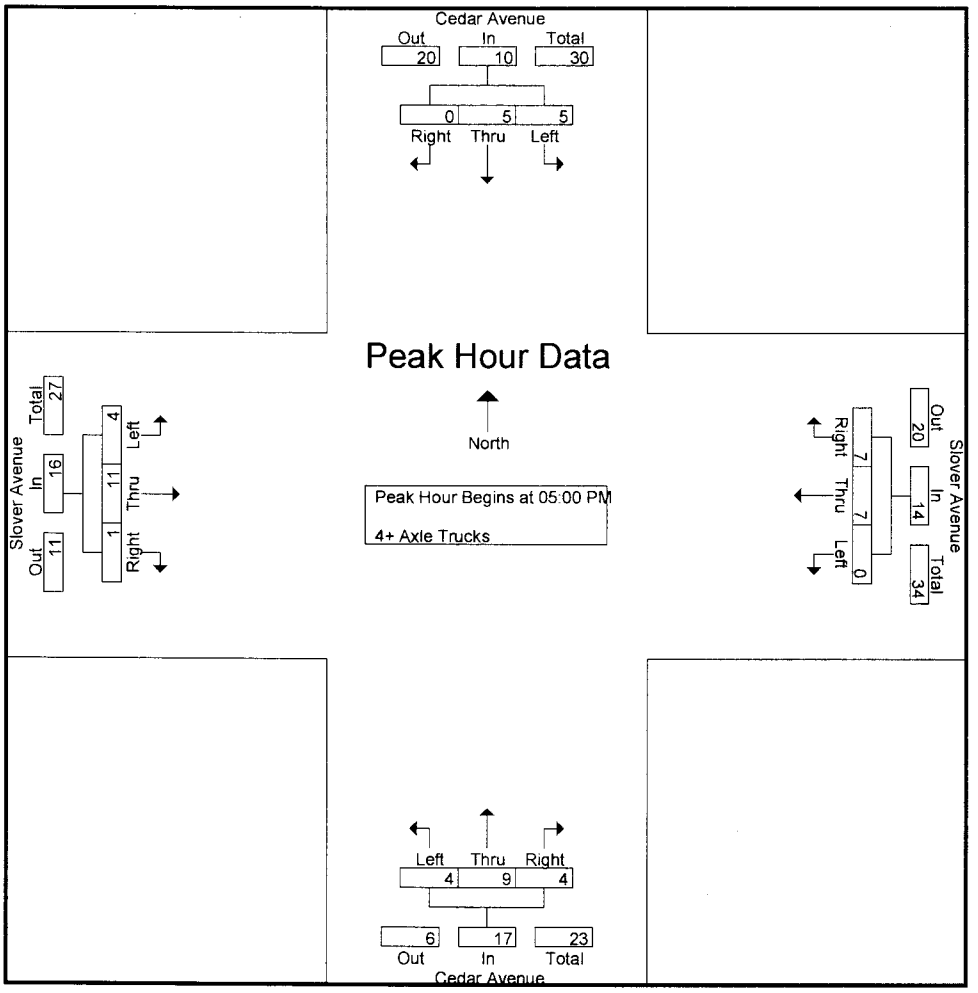
	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	5	2	1	8	0	0	0	0	1	4	0	5	0	2	0	2	15
04:15 PM	2	2	1	5	0	0	0	0	0	5	0	5	0	1	1	2	12
04:30 PM	1	2	2	5	0	0	0	0	0	3	2	5	1	3	1	5	15
04:45 PM	3	1	1	5	1	0	2	3	1	5	0	6	1	4	0	5	19
Total	11	7	5	23	1	0	2	3	2	17	2	21	2	10	2	14	61
05:00 PM	2	1	0	3	0	1	1	2	2	3	0	5	1	2	0	3	13
05:15 PM	2	0	0	2	0	1	4	5	0	3	0	3	2	3	0	5	15
05:30 PM	1	3	0	4	0	2	1	3	0	1	1	2	1	1	1	3	12
05:45 PM	0	1	0	1	0	3	1	4	2	2	3	7	0	5	0	5	17
Total	5	5	0	10	0	7	7	14	4	9	4	17	4	11	1	16	57
Grand Total	16	12	5	33	1	7	9	17	6	26	6	38	6	21	3	30	118
Apprch %	48.5	36.4	15.2		5.9	41.2	52.9		15.8	68.4	15.8		20	70	10		
Total %	13.6	10.2	4.2	28	0.8	5.9	7.6	14.4	5.1	22	5.1	32.2	5.1	17.8	2.5	25.4	

	Cedar Avenue Southbound				Slover Avenue Westbound				Cedar Avenue Northbound				Slover Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**2**	1	0	3	0	1	1	2	**2**	**3**	0	5	1	2	0	3	13
05:15 PM	2	0	0	2	0	1	**4**	**5**	0	3	0	3	**2**	3	0	**5**	15
05:30 PM	1	**3**	0	**4**	0	2	1	3	0	1	1	2	1	1	**1**	3	12
05:45 PM	0	1	0	1	0	**3**	1	4	2	2	**3**	**7**	0	**5**	0	5	**17**
Total Volume	5	5	0	10	0	7	7	14	4	9	4	17	4	11	1	16	57
% App. Total	50	50	0		0	50	50		23.5	52.9	23.5		25	68.8	6.2		
PHF	.625	.417	.000	.625	.000	.583	.438	.700	.500	.750	.333	.607	.500	.550	.250	.800	.838

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Slover Avenue
Weather: Clear

File Name : CSBCESLPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**2**	1	0	3	0	1	1	2	**2**	**3**	0	5	1	2	0	3
+15 mins.	2	0	0	2	0	1	**4**	**5**	0	3	0	3	**2**	3	0	**5**
+30 mins.	1	**3**	0	**4**	0	2	1	3	0	1	1	2	1	1	**1**	3
+45 mins.	0	1	0	1	0	**3**	1	4	2	2	**3**	**7**	0	**5**	0	5
Total Volume	5	5	0	10	0	7	7	14	4	9	4	17	4	11	1	16
% App. Total	50	50	0		0	50	50		23.5	52.9	23.5		25	68.8	6.2	
PHF	.625	.417	.000	.625	.000	.583	.438	.700	.500	.750	.333	.607	.500	.550	.250	.800

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

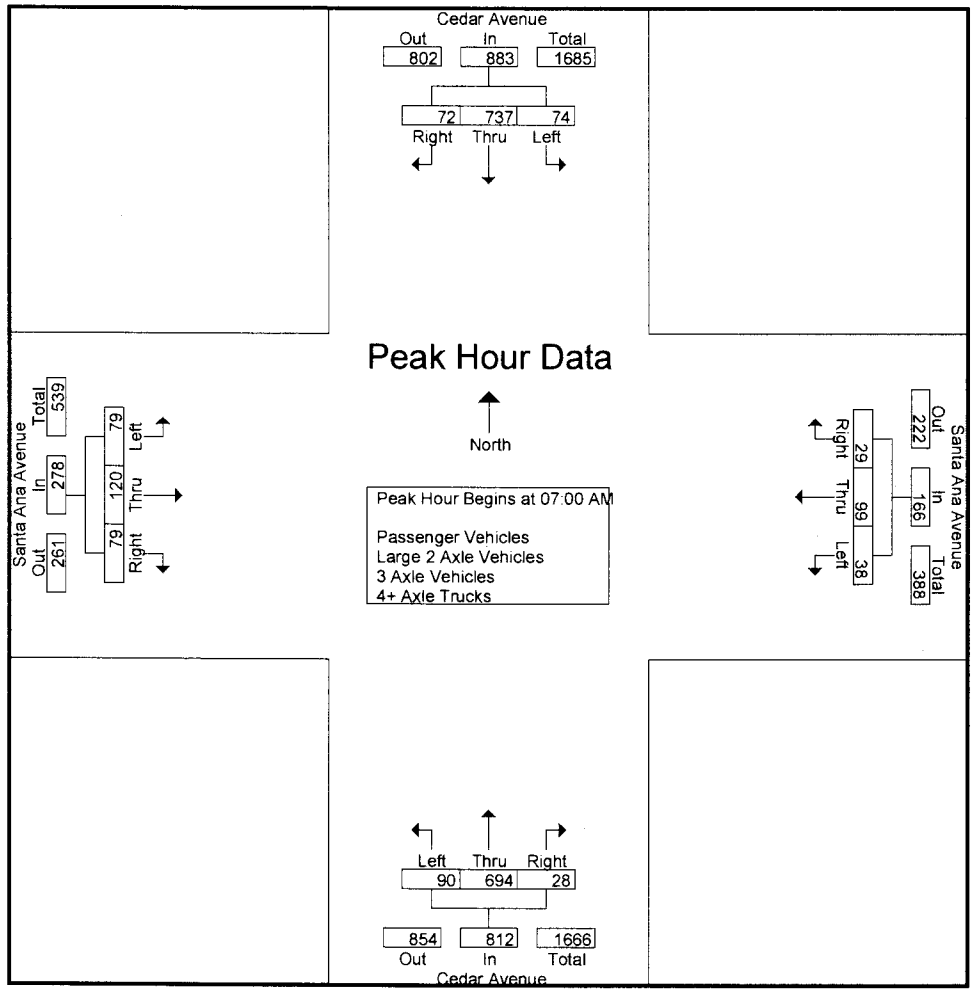
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	131	23	173	7	44	9	60	32	163	5	200	23	35	23	81	514
07:15 AM	22	164	18	204	8	23	8	39	22	161	4	187	18	35	28	81	511
07:30 AM	18	235	16	269	11	11	6	28	24	225	11	260	22	29	16	67	624
07:45 AM	15	207	15	237	12	21	6	39	12	145	8	165	16	21	12	49	490
Total	74	737	72	883	38	99	29	166	90	694	28	812	79	120	79	278	2139
08:00 AM	11	151	16	178	10	15	9	34	10	143	6	159	11	16	18	45	416
08:15 AM	4	151	12	167	4	13	3	20	9	111	3	123	11	8	10	29	339
08:30 AM	5	149	14	168	11	21	3	35	8	134	3	145	11	10	8	29	377
08:45 AM	4	121	8	133	7	9	5	21	10	132	4	146	11	10	8	29	329
Total	24	572	50	646	32	58	20	110	37	520	16	573	44	44	44	132	1461
Grand Total	98	1309	122	1529	70	157	49	276	127	1214	44	1385	123	164	123	410	3600
Apprch %	6.4	85.6	8		25.4	56.9	17.8		9.2	87.7	3.2		30	40	30		
Total %	2.7	36.4	3.4	42.5	1.9	4.4	1.4	7.7	3.5	33.7	1.2	38.5	3.4	4.6	3.4	11.4	
Passenger Vehicles	90	1229	117	1436	52	152	44	248	124	1142	38	1304	116	156	118	390	3378
% Passenger Vehicles	91.8	93.9	95.9	93.9	74.3	96.8	89.8	89.9	97.6	94.1	86.4	94.2	94.3	95.1	95.9	95.1	93.8
Large 2 Axle Vehicles	2	18	4	24	1	4	3	8	2	28	4	34	5	4	3	12	78
% Large 2 Axle Vehicles	2	1.4	3.3	1.6	1.4	2.5	6.1	2.9	1.6	2.3	9.1	2.5	4.1	2.4	2.4	2.9	2.2
3 Axle Vehicles	3	17	0	20	2	0	1	3	1	7	0	8	1	1	0	2	33
% 3 Axle Vehicles	3.1	1.3	0	1.3	2.9	0	2	1.1	0.8	0.6	0	0.6	0.8	0.6	0	0.5	0.9
4+ Axle Trucks	3	45	1	49	15	1	1	17	0	37	2	39	1	3	2	6	111
% 4+ Axle Trucks	3.1	3.4	0.8	3.2	21.4	0.6	2	6.2	0	3	4.5	2.8	0.8	1.8	1.6	1.5	3.1

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	19	131	**23**	173	7	**44**	**9**	**60**	**32**	163	5	200	**23**	**35**	23	**81**	514
07:15 AM	**22**	164	18	204	8	23	8	39	22	161	4	187	18	35	**28**	81	511
07:30 AM	18	**235**	16	**269**	11	11	6	28	24	**225**	**11**	**260**	22	29	16	67	**624**
07:45 AM	15	207	15	237	**12**	21	6	39	12	145	8	165	16	21	12	49	490
Total Volume	74	737	72	883	38	99	29	166	90	694	28	812	79	120	79	278	2139
% App. Total	8.4	83.5	8.2		22.9	59.6	17.5		11.1	85.5	3.4		28.4	43.2	28.4		
PHF	.841	.784	.783	.821	.792	.563	.806	.692	.703	.771	.636	.781	.859	.857	.705	.858	.857

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**22**	164	**18**	204	7	**44**	**9**	**60**	**32**	163	5	200	**23**	**35**	23	**81**
+15 mins.	18	**235**	16	**269**	8	23	8	39	22	161	4	187	18	35	**28**	81
+30 mins.	15	207	15	237	11	11	6	28	24	**225**	**11**	**260**	22	29	16	67
+45 mins.	11	151	16	178	**12**	21	6	39	12	145	8	165	16	21	12	49
Total Volume	66	757	65	888	38	99	29	166	90	694	28	812	79	120	79	278
% App. Total	7.4	85.2	7.3		22.9	59.6	17.5		11.1	85.5	3.4		28.4	43.2	28.4	
PHF	.750	.805	.903	.825	.792	.563	.806	.692	.703	.771	.636	.781	.859	.857	.705	.858

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

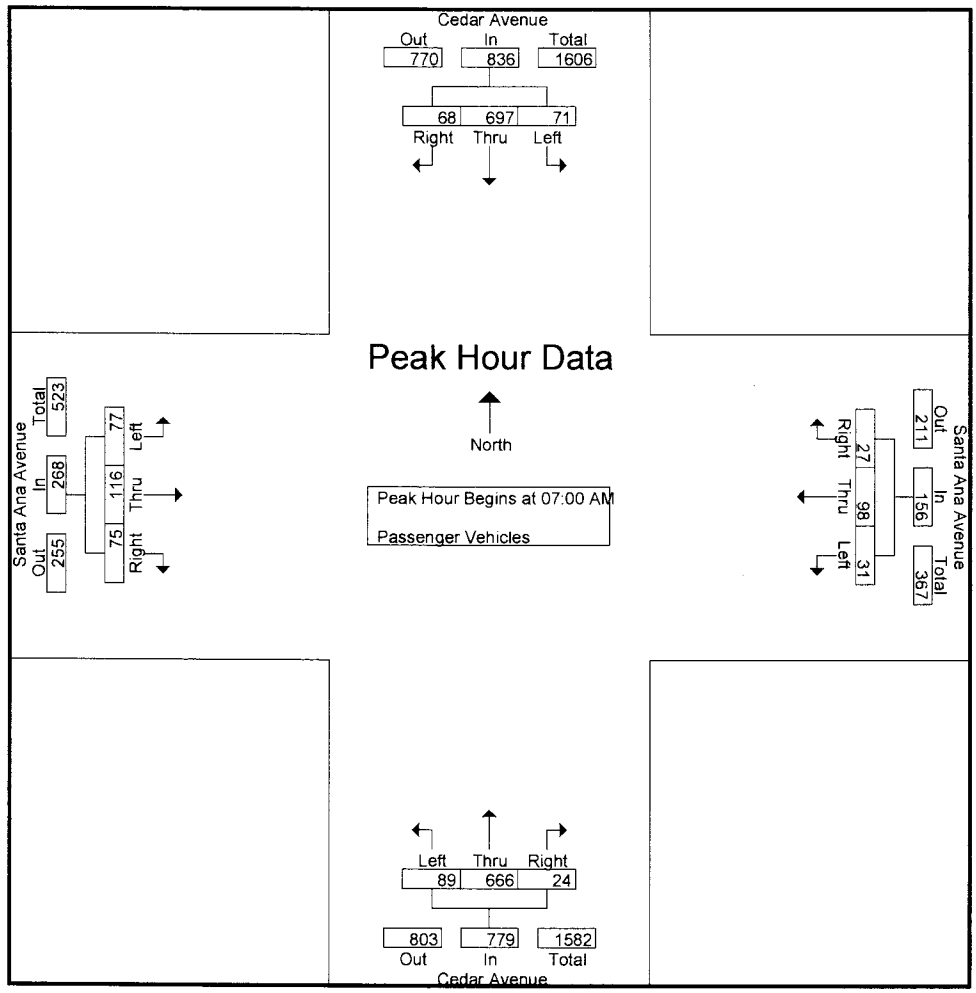
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	122	23	164	6	44	9	59	32	160	4	196	22	35	21	78	497
07:15 AM	21	150	16	187	6	23	7	36	22	158	3	183	18	34	27	79	485
07:30 AM	18	223	16	257	9	11	6	26	23	215	11	249	21	28	16	65	597
07:45 AM	13	202	13	228	10	20	5	35	12	133	6	151	16	19	11	46	460
Total	71	697	68	836	31	98	27	156	89	666	24	779	77	116	75	268	2039
08:00 AM	9	137	16	162	7	14	7	28	9	132	5	146	9	15	17	41	377
08:15 AM	3	142	12	157	2	12	3	17	9	99	3	111	10	6	10	26	311
08:30 AM	3	139	14	156	7	19	2	28	8	128	2	138	10	10	8	28	350
08:45 AM	4	114	7	125	5	9	5	19	9	117	4	130	10	9	8	27	301
Total	19	532	49	600	21	54	17	92	35	476	14	525	39	40	43	122	1339
Grand Total	90	1229	117	1436	52	152	44	248	124	1142	38	1304	116	156	118	390	3378
Apprch %	6.3	85.6	8.1		21	61.3	17.7		9.5	87.6	2.9		29.7	40	30.3		
Total %	2.7	36.4	3.5	42.5	1.5	4.5	1.3	7.3	3.7	33.8	1.1	38.6	3.4	4.6	3.5	11.5	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	19	122	**23**	164	6	**44**	**9**	**59**	**32**	160	4	196	**22**	**35**	21	78	497
07:15 AM	**21**	150	16	187	6	23	7	36	22	158	3	183	18	34	**27**	**79**	485
07:30 AM	18	**223**	16	**257**	9	11	6	26	23	**215**	**11**	**249**	21	28	16	65	**597**
07:45 AM	13	202	13	228	**10**	20	5	35	12	133	6	151	16	19	11	46	460
Total Volume	71	697	68	836	31	98	27	156	89	666	24	779	77	116	75	268	2039
% App. Total	8.5	83.4	8.1		19.9	62.8	17.3		11.4	85.5	3.1		28.7	43.3	28		
PHF	.845	.781	.739	.813	.775	.557	.750	.661	.695	.774	.545	.782	.875	.829	.694	.848	.854

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	19	122	**23**	164	6	**44**	**9**	**59**	**32**	160	4	196	**22**	**35**	21	78
+15 mins.	**21**	150	16	187	6	23	7	36	22	158	3	183	18	34	**27**	**79**
+30 mins.	18	**223**	16	**257**	9	11	6	26	23	**215**	**11**	**249**	21	28	16	65
+45 mins.	13	202	13	228	**10**	20	5	35	12	133	6	151	16	19	11	46
Total Volume	71	697	68	836	31	98	27	156	89	666	24	779	77	116	75	268
% App. Total	8.5	83.4	8.1		19.9	62.8	17.3		11.4	85.5	3.1		28.7	43.3	28	
PHF	.845	.781	.739	.813	.775	.557	.750	.661	.695	.774	.545	.782	.875	.829	.694	.848

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

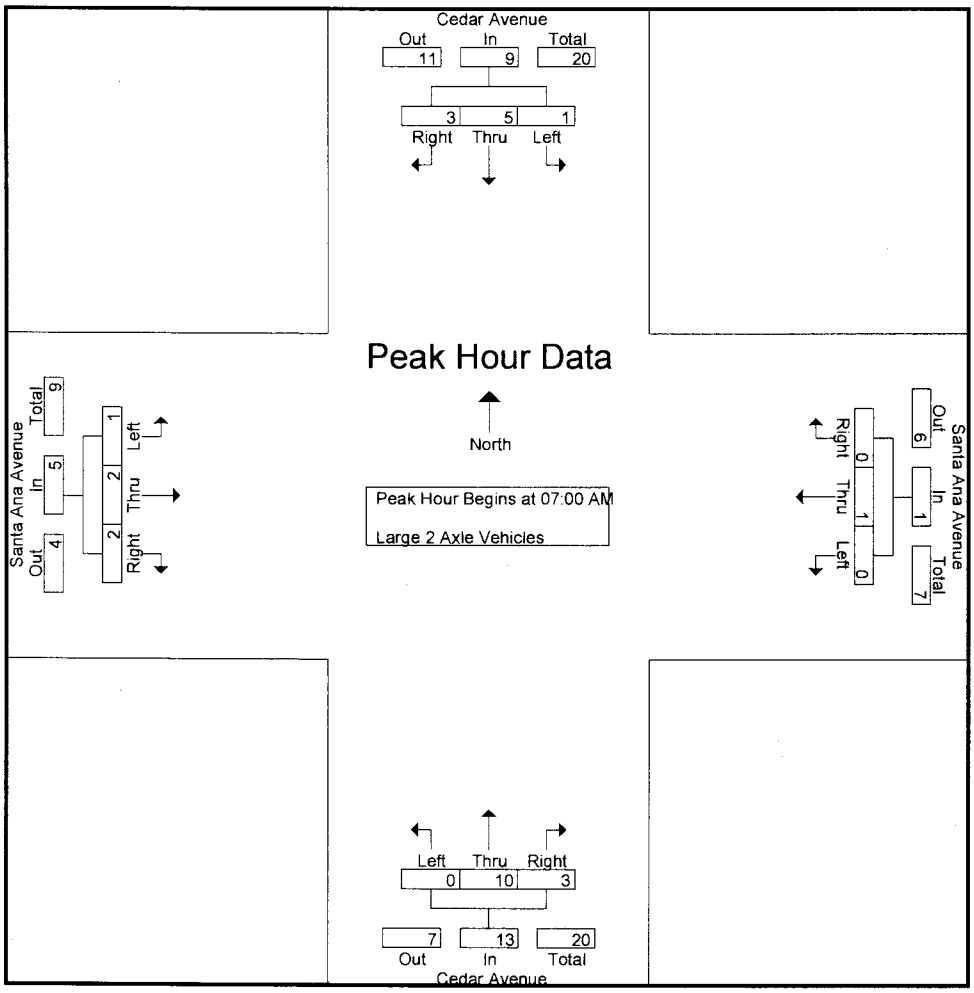
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	0	2	0	0	0	0	0	1	1	2	0	0	0	0	4
07:15 AM	1	1	1	3	0	0	0	0	0	0	1	1	0	0	1	1	5
07:30 AM	0	1	0	1	0	0	0	0	0	3	0	3	1	1	0	2	6
07:45 AM	0	1	2	3	0	1	0	1	0	6	1	7	0	1	1	2	13
Total	1	5	3	9	0	1	0	1	0	10	3	13	1	2	2	5	28
08:00 AM	0	5	0	5	0	0	2	2	1	3	1	5	2	0	1	3	15
08:15 AM	0	3	0	3	1	1	0	2	0	7	0	7	1	2	0	3	15
08:30 AM	1	3	0	4	0	2	1	3	0	4	0	4	0	0	0	0	11
08:45 AM	0	2	1	3	0	0	0	0	1	4	0	5	1	0	0	1	9
Total	1	13	1	15	1	3	3	7	2	18	1	21	4	2	1	7	50
Grand Total	2	18	4	24	1	4	3	8	2	28	4	34	5	4	3	12	78
Apprch %	8.3	75	16.7		12.5	50	37.5		5.9	82.4	11.8		41.7	33.3	25		
Total %	2.6	23.1	5.1	30.8	1.3	5.1	3.8	10.3	2.6	35.9	5.1	43.6	6.4	5.1	3.8	15.4	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**2**	0	2	0	0	0	0	0	1	**1**	2	0	0	0	0	4
07:15 AM	**1**	1	1	**3**	0	0	0	0	0	0	1	1	0	0	**1**	1	5
07:30 AM	0	1	0	1	0	0	0	0	0	3	0	3	**1**	**1**	0	**2**	6
07:45 AM	0	1	**2**	3	0	**1**	0	**1**	0	**6**	1	**7**	0	1	1	2	**13**
Total Volume	1	5	3	9	0	1	0	1	0	10	3	13	1	2	2	5	28
% App. Total	11.1	55.6	33.3		0	100	0		0	76.9	23.1		20	40	40		
PHF	.250	.625	.375	.750	.000	.250	.000	.250	.000	.417	.750	.464	.250	.500	.500	.625	.538

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	**2**	0	2	0	0	0	0	0	1	**1**	2	0	0	0	0
+15 mins.	**1**	1	1	**3**	0	0	0	0	0	0	1	1	0	0	**1**	1
+30 mins.	0	1	0	1	0	0	0	0	0	3	0	3	**1**	**1**	0	**2**
+45 mins.	0	1	**2**	3	0	**1**	0	**1**	0	**6**	1	**7**	0	1	1	2
Total Volume	1	5	3	9	0	1	0	1	0	10	3	13	1	2	2	5
% App. Total	11.1	55.6	33.3		0	100	0		0	76.9	23.1		20	40	40	
PHF	.250	.625	.375	.750	.000	.250	.000	.250	.000	.417	.750	.464	.250	.500	.500	.625

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

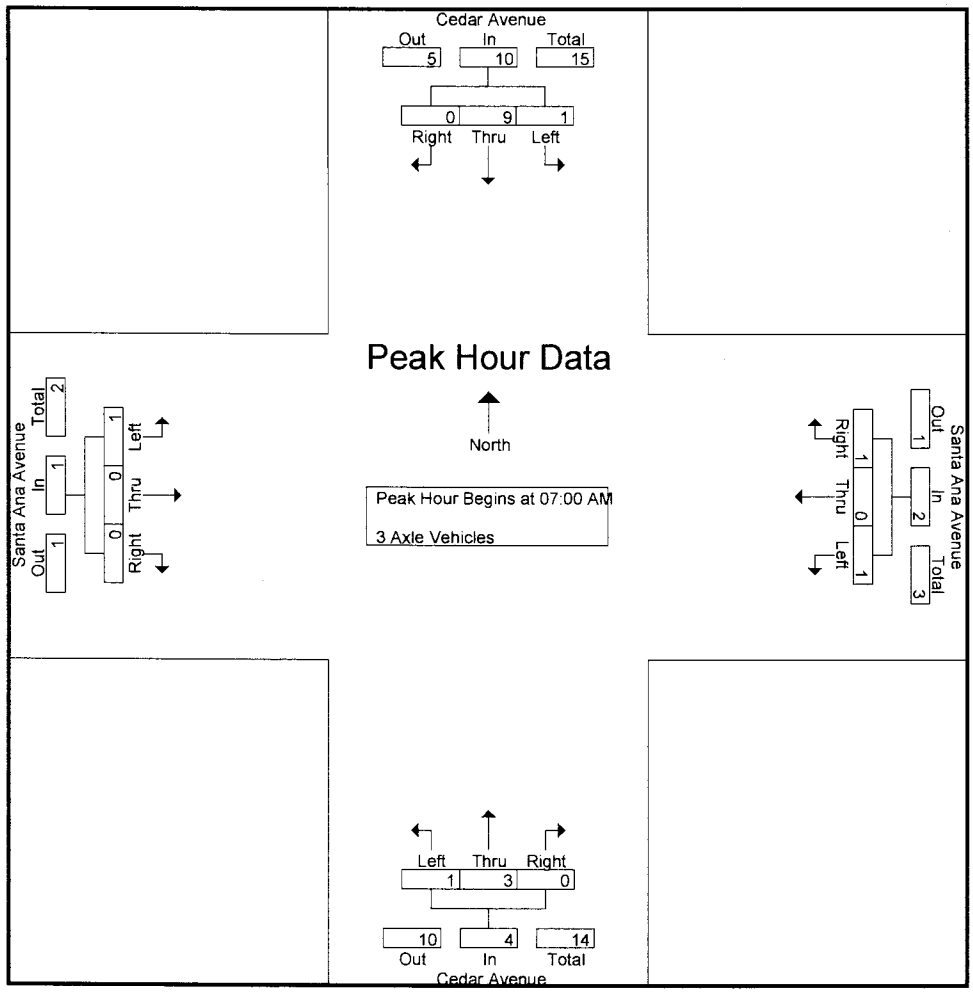
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
07:15 AM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
07:30 AM	0	3	0	3	0	0	0	0	1	1	0	2	0	0	0	0	5
07:45 AM	1	2	0	3	0	0	1	1	0	1	0	1	0	0	0	0	5
Total	1	9	0	10	1	0	1	2	1	3	0	4	1	0	0	1	17
08:00 AM	1	4	0	5	1	0	0	1	0	0	0	0	0	1	0	1	7
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:30 AM	1	2	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
08:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	2	8	0	10	1	0	0	1	0	4	0	4	0	1	0	1	16
Grand Total	3	17	0	20	2	0	1	3	1	7	0	8	1	1	0	2	33
Apprch %	15	85	0		66.7	0	33.3		12.5	87.5	0		50	50	0		
Total %	9.1	51.5	0	60.6	6.1	0	3	9.1	3	21.2	0	24.2	3	3	0	6.1	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**	0	0	**1**	2
07:15 AM	0	**4**	0	**4**	0	0	0	0	0	**1**	0	1	0	0	0	0	**5**
07:30 AM	0	3	0	3	0	0	0	0	**1**	1	0	**2**	0	0	0	0	5
07:45 AM	**1**	2	0	3	0	0	**1**	1	0	1	0	1	0	0	0	0	5
Total Volume	1	9	0	10	1	0	1	2	1	3	0	4	1	0	0	1	17
% App. Total	10	90	0		50	0	50		25	75	0		100	0	0		
PHF	.250	.563	.000	.625	.250	.000	.250	.500	.250	.750	.000	.500	.250	.000	.000	.250	.850

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**	0	0	**1**
+15 mins.	0	**4**	0	**4**	0	0	0	0	0	**1**	0	1	0	0	0	0
+30 mins.	0	3	0	3	0	0	0	0	**1**	1	0	**2**	0	0	0	0
+45 mins.	**1**	2	0	3	0	0	**1**	1	0	1	0	1	0	0	0	0
Total Volume	1	9	0	10	1	0	1	2	1	3	0	4	1	0	0	1
% App. Total	10	90	0		50	0	50		25	75	0		100	0	0	
PHF	.250	.563	.000	.625	.250	.000	.250	.500	.250	.750	.000	.500	.250	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

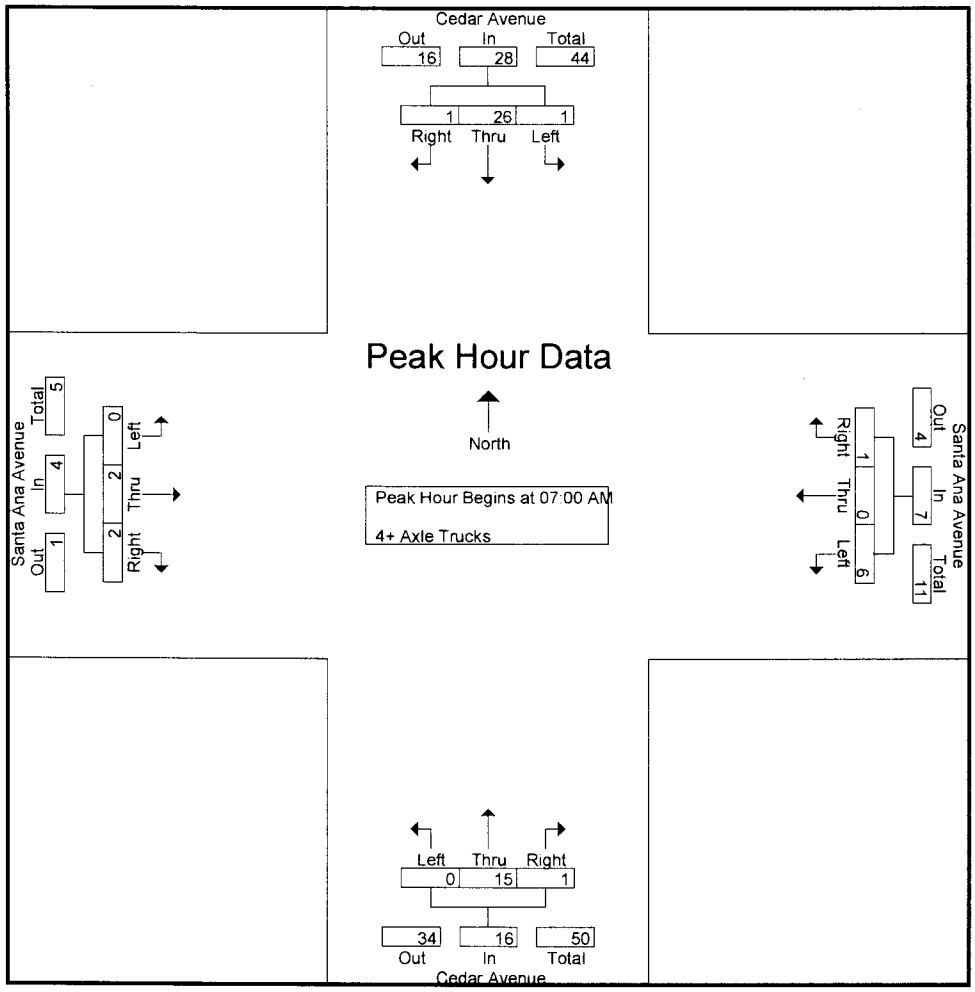
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	7	0	7	0	0	0	0	0	2	0	2	0	0	2	2	11
07:15 AM	0	9	1	10	2	0	1	3	0	2	0	2	0	1	0	1	16
07:30 AM	0	8	0	8	2	0	0	2	0	6	0	6	0	0	0	0	16
07:45 AM	1	2	0	3	2	0	0	2	0	5	1	6	0	1	0	1	12
Total	1	26	1	28	6	0	1	7	0	15	1	16	0	2	2	4	55
08:00 AM	1	5	0	6	2	1	0	3	0	8	0	8	0	0	0	0	17
08:15 AM	1	5	0	6	1	0	0	1	0	4	0	4	0	0	0	0	11
08:30 AM	0	5	0	5	4	0	0	4	0	1	1	2	1	0	0	1	12
08:45 AM	0	4	0	4	2	0	0	2	0	9	0	9	0	1	0	1	16
Total	2	19	0	21	9	1	0	10	0	22	1	23	1	1	0	2	56
Grand Total	3	45	1	49	15	1	1	17	0	37	2	39	1	3	2	6	111
Apprch %	6.1	91.8	2		88.2	5.9	5.9		0	94.9	5.1		16.7	50	33.3		
Total %	2.7	40.5	0.9	44.1	13.5	0.9	0.9	15.3	0	33.3	1.8	35.1	0.9	2.7	1.8	5.4	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	7	0	7	0	0	0	0	0	2	0	2	0	0	2	2	11
07:15 AM	0	9	1	10	2	0	1	3	0	2	0	2	0	1	0	1	16
07:30 AM	0	8	0	8	2	0	0	2	0	6	0	6	0	0	0	0	16
07:45 AM	1	2	0	3	2	0	0	2	0	5	1	6	0	1	0	1	12
Total Volume	1	26	1	28	6	0	1	7	0	15	1	16	0	2	2	4	55
% App. Total	3.6	92.9	3.6		85.7	0	14.3		0	93.8	6.2		0	50	50		
PHF	.250	.722	.250	.700	.750	.000	.250	.583	.000	.625	.250	.667	.000	.500	.250	.500	.859

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	7	0	7	0	0	0	0	0	2	0	2	0	0	**2**	**2**
+15 mins.	0	**9**	**1**	**10**	**2**	0	**1**	**3**	0	2	0	2	0	**1**	0	1
+30 mins.	0	8	0	8	2	0	0	2	0	**6**	0	**6**	0	0	0	0
+45 mins.	**1**	2	0	3	2	0	0	2	0	5	**1**	6	0	1	0	1
Total Volume	1	26	1	28	6	0	1	7	0	15	1	16	0	2	2	4
% App. Total	3.6	92.9	3.6		85.7	0	14.3		0	93.8	6.2		0	50	50	
PHF	.250	.722	.250	.700	.750	.000	.250	.583	.000	.625	.250	.667	.000	.500	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

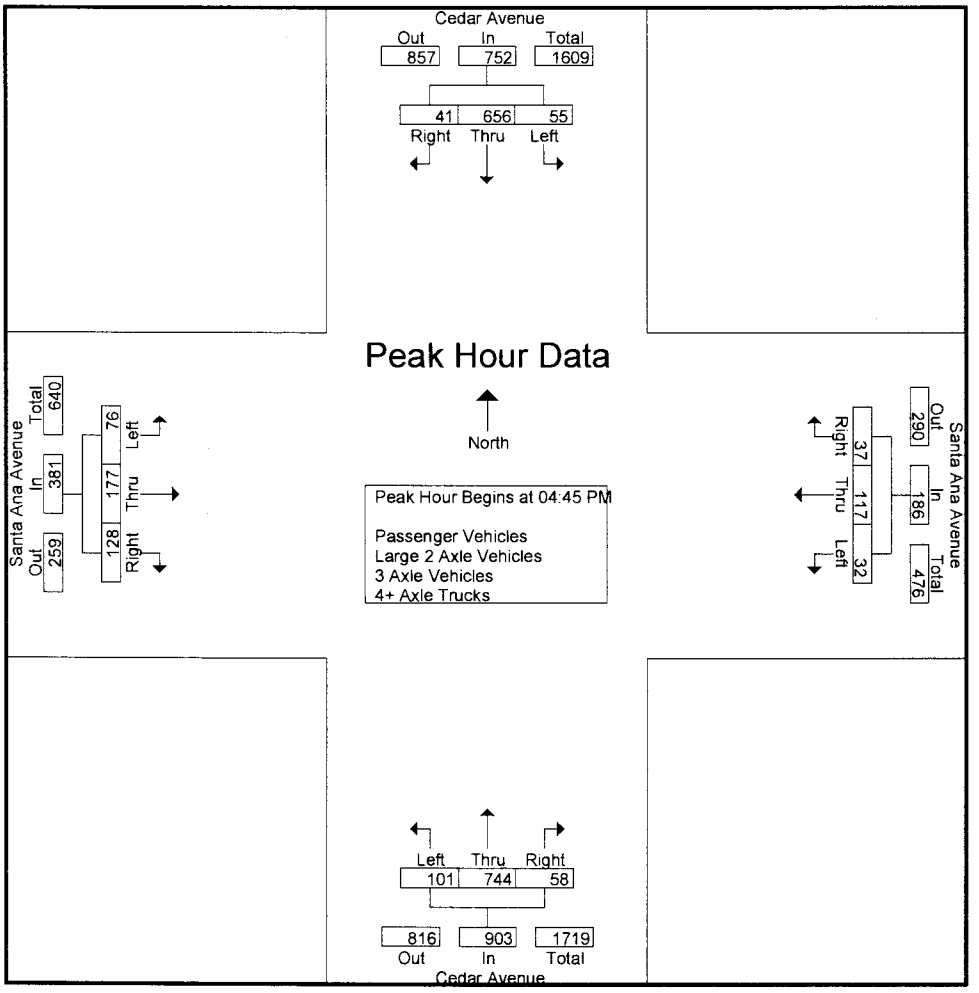
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	167	13	198	11	21	5	37	28	197	10	235	21	49	23	93	563
04:15 PM	10	175	17	202	9	17	4	30	17	190	7	214	20	26	28	74	520
04:30 PM	6	166	10	182	4	26	6	36	15	186	13	214	16	39	27	82	514
04:45 PM	8	175	4	187	9	28	12	49	16	173	5	194	11	48	49	108	538
Total	42	683	44	769	33	92	27	152	76	746	35	857	68	162	127	357	2135
05:00 PM	19	169	9	197	8	28	11	47	27	207	10	244	21	42	29	92	580
05:15 PM	12	157	9	178	7	25	6	38	35	208	26	269	24	39	31	94	579
05:30 PM	16	155	19	190	8	36	8	52	23	156	17	196	20	48	19	87	525
05:45 PM	13	157	15	185	12	32	7	51	14	151	11	176	18	44	21	83	495
Total	60	638	52	750	35	121	32	188	99	722	64	885	83	173	100	356	2179
Grand Total	102	1321	96	1519	68	213	59	340	175	1468	99	1742	151	335	227	713	4314
Apprch %	6.7	87	6.3		20	62.6	17.4		10	84.3	5.7		21.2	47	31.8		
Total %	2.4	30.6	2.2	35.2	1.6	4.9	1.4	7.9	4.1	34	2.3	40.4	3.5	7.8	5.3	16.5	
Passenger Vehicles	90	1262	95	1447	60	208	50	318	172	1410	87	1669	150	327	218	695	4129
% Passenger Vehicles	88.2	95.5	99	95.3	88.2	97.7	84.7	93.5	98.3	96	87.9	95.8	99.3	97.6	96	97.5	95.7
Large 2 Axle Vehicles	4	24	1	29	1	2	1	4	1	16	2	19	0	4	3	7	59
% Large 2 Axle Vehicles	3.9	1.8	1	1.9	1.5	0.9	1.7	1.2	0.6	1.1	2	1.1	0	1.2	1.3	1	1.4
3 Axle Vehicles	5	21	0	26	2	2	1	5	1	9	2	12	1	1	3	5	48
% 3 Axle Vehicles	4.9	1.6	0	1.7	2.9	0.9	1.7	1.5	0.6	0.6	2	0.7	0.7	0.3	1.3	0.7	1.1
4+ Axle Trucks	3	14	0	17	5	1	7	13	1	33	8	42	0	3	3	6	78
% 4+ Axle Trucks	2.9	1.1	0	1.1	7.4	0.5	11.9	3.8	0.6	2.2	8.1	2.4	0	0.9	1.3	0.8	1.8

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	8	**175**	4	187	**9**	28	**12**	49	16	173	5	194	11	**48**	**49**	**108**	538
05:00 PM	**19**	169	9	**197**	8	28	11	47	27	207	10	244	21	42	29	92	**580**
05:15 PM	12	157	9	178	7	25	6	38	**35**	**208**	**26**	**269**	**24**	39	31	94	579
05:30 PM	16	155	**19**	190	8	**36**	8	**52**	23	156	17	196	20	48	19	87	525
Total Volume	55	656	41	752	32	117	37	186	101	744	58	903	76	177	128	381	2222
% App. Total	7.3	87.2	5.5		17.2	62.9	19.9		11.2	82.4	6.4		19.9	46.5	33.6		
PHF	.724	.937	.539	.954	.889	.813	.771	.894	.721	.894	.558	.839	.792	.922	.653	.882	.958

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:30 PM				04:45 PM			
+0 mins.	**18**	167	13	198	8	28	**11**	47	15	186	13	214	11	**48**	**49**	**108**
+15 mins.	10	**175**	**17**	**202**	7	25	6	38	16	173	5	194	21	42	29	92
+30 mins.	6	166	10	182	8	**36**	8	**52**	27	207	10	244	**24**	39	31	94
+45 mins.	8	175	4	187	**12**	32	7	51	**35**	**208**	**26**	**269**	20	48	19	87
Total Volume	42	683	44	769	35	121	32	188	93	774	54	921	76	177	128	381
% App. Total	5.5	88.8	5.7		18.6	64.4	17		10.1	84	5.9		19.9	46.5	33.6	
PHF	.583	.976	.647	.952	.729	.840	.727	.904	.664	.930	.519	.856	.792	.922	.653	.882

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

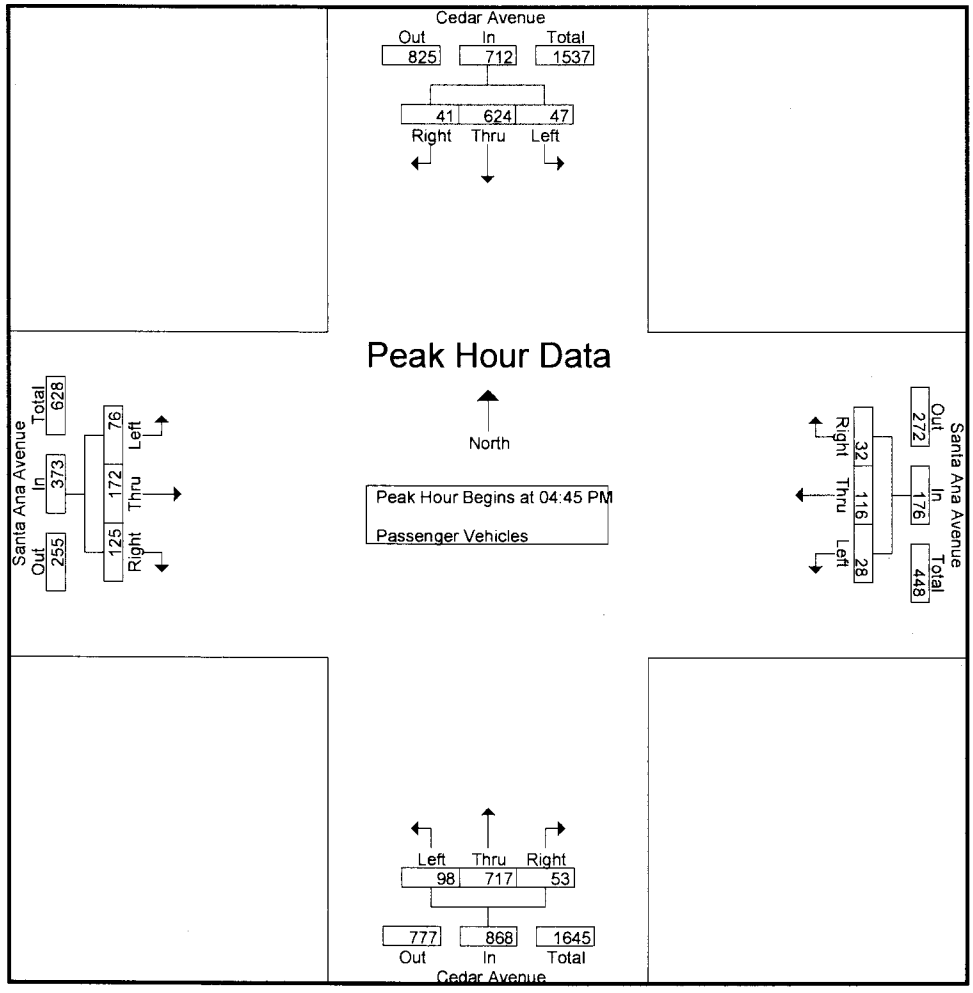
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	158	13	188	10	19	3	32	28	188	7	223	20	49	21	90	533
04:15 PM	9	170	16	195	7	17	4	28	17	180	7	204	20	25	28	73	500
04:30 PM	5	159	10	174	4	24	4	32	15	179	12	206	16	38	24	78	490
04:45 PM	6	165	4	175	7	28	10	45	16	162	5	183	11	45	49	105	508
Total	37	652	43	732	28	88	21	137	76	709	31	816	67	157	122	346	2031
05:00 PM	15	158	9	182	6	27	9	42	27	203	8	238	21	41	29	91	553
05:15 PM	11	154	9	174	7	25	5	37	34	201	24	259	24	38	29	91	561
05:30 PM	15	147	19	181	8	36	8	52	21	151	16	188	20	48	18	86	507
05:45 PM	12	151	15	178	11	32	7	50	14	146	8	168	18	43	20	81	477
Total	53	610	52	715	32	120	29	181	96	701	56	853	83	170	96	349	2098
Grand Total	90	1262	95	1447	60	208	50	318	172	1410	87	1669	150	327	218	695	4129
Apprch %	6.2	87.2	6.6		18.9	65.4	15.7		10.3	84.5	5.2		21.6	47.1	31.4		
Total %	2.2	30.6	2.3	35	1.5	5	1.2	7.7	4.2	34.1	2.1	40.4	3.6	7.9	5.3	16.8	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	6	**165**	4	175	7	28	**10**	45	16	162	5	183	11	45	**49**	**105**	508
05:00 PM	**15**	158	9	**182**	6	27	9	42	27	**203**	8	238	21	41	29	91	553
05:15 PM	11	154	9	174	7	25	5	37	**34**	201	**24**	**259**	**24**	38	29	91	**561**
05:30 PM	15	147	**19**	181	**8**	**36**	8	**52**	21	151	16	188	20	**48**	18	86	507
Total Volume	47	624	41	712	28	116	32	176	98	717	53	868	76	172	125	373	2129
% App. Total	6.6	87.6	5.8		15.9	65.9	18.2		11.3	82.6	6.1		20.4	46.1	33.5		
PHF	.783	.945	.539	.978	.875	.806	.800	.846	.721	.883	.552	.838	.792	.896	.638	.888	.949

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	6	**165**	4	175	7	28	**10**	45	16	162	5	183	11	45	**49**	**105**
+15 mins.	**15**	158	9	**182**	6	27	9	42	27	**203**	8	238	21	41	29	91
+30 mins.	11	154	9	174	7	25	5	37	**34**	201	**24**	**259**	**24**	38	29	91
+45 mins.	15	147	**19**	181	**8**	**36**	8	**52**	21	151	16	188	20	**48**	18	86
Total Volume	47	624	41	712	28	116	32	176	98	717	53	868	76	172	125	373
% App. Total	6.6	87.6	5.8		15.9	65.9	18.2		11.3	82.6	6.1		20.4	46.1	33.5	
PHF	.783	.945	.539	.978	.875	.806	.800	.846	.721	.883	.552	.838	.792	.896	.638	.888

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

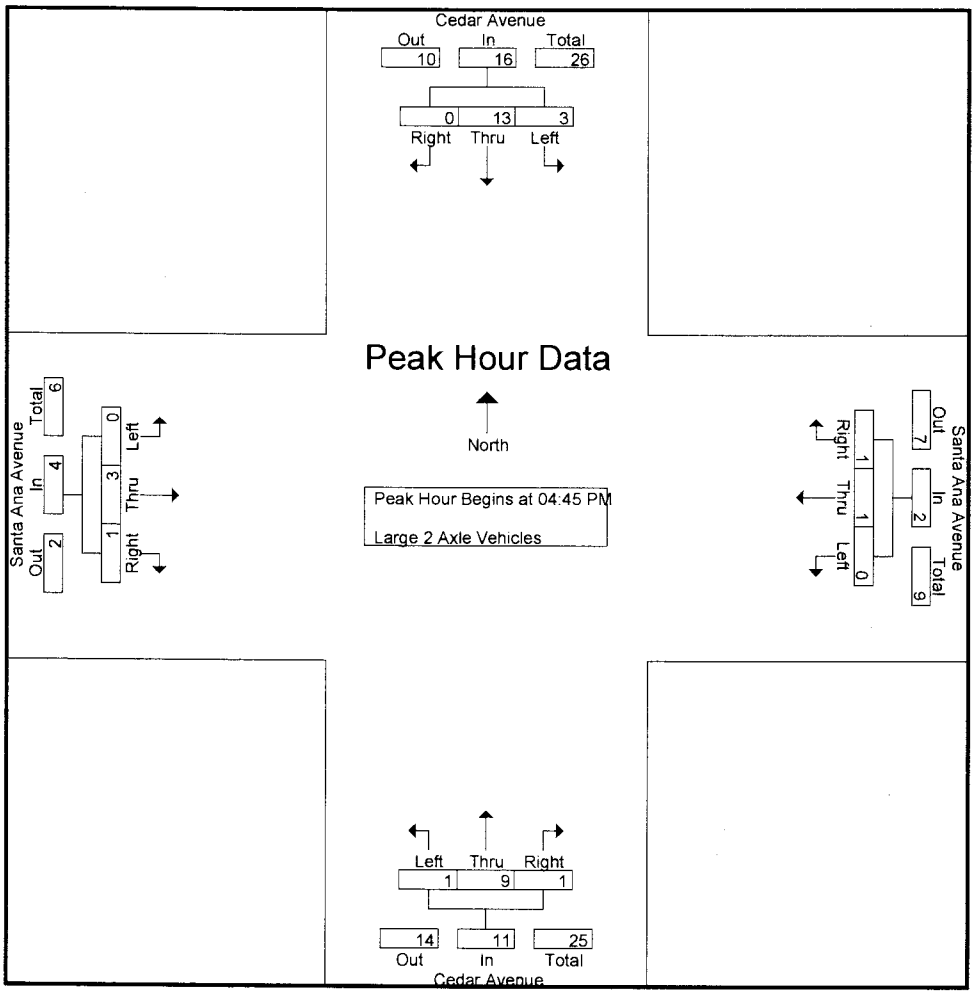
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	5	0	6	1	0	0	1	0	3	1	4	0	0	1	1	12
04:15 PM	0	2	1	3	0	0	0	0	0	2	0	2	0	0	0	0	5
04:30 PM	0	2	0	2	0	1	0	1	0	1	0	1	0	0	1	1	5
04:45 PM	1	6	0	7	0	0	0	0	0	2	0	2	0	1	0	1	10
Total	2	15	1	18	1	1	0	2	0	8	1	9	0	1	2	3	32
05:00 PM	1	5	0	6	0	1	0	1	0	4	0	4	0	1	0	1	12
05:15 PM	1	1	0	2	0	0	1	1	1	3	1	5	0	1	1	2	10
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	1	0	1	4
Total	2	9	0	11	0	1	1	2	1	8	1	10	0	3	1	4	27
Grand Total	4	24	1	29	1	2	1	4	1	16	2	19	0	4	3	7	59
Apprch %	13.8	82.8	3.4		25	50	25		5.3	84.2	10.5		0	57.1	42.9		
Total %	6.8	40.7	1.7	49.2	1.7	3.4	1.7	6.8	1.7	27.1	3.4	32.2	0	6.8	5.1	11.9	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**1**	**6**	0	**7**	0	0	0	0	0	2	0	2	0	**1**	0	1	10
05:00 PM	1	5	0	6	0	**1**	0	**1**	0	**4**	0	4	0	1	0	1	**12**
05:15 PM	1	1	0	2	0	0	**1**	1	**1**	3	**1**	**5**	0	1	**1**	**2**	10
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	3	13	0	16	0	1	1	2	1	9	1	11	0	3	1	4	33
% App. Total	18.8	81.2	0		0	50	50		9.1	81.8	9.1		0	75	25		
PHF	.750	.542	.000	.571	.000	.250	.250	.500	.250	.563	.250	.550	.000	.750	.250	.500	.688

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	**1**	**6**	0	**7**	0	0	0	0	0	2	0	2	0	**1**	0	1
+15 mins.	1	5	0	6	0	**1**	0	**1**	0	**4**	0	4	0	1	0	1
+30 mins.	1	1	0	2	0	0	**1**	1	**1**	3	**1**	**5**	0	1	**1**	**2**
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	3	13	0	16	0	1	1	2	1	9	1	11	0	3	1	4
% App. Total	18.8	81.2	0		0	50	50		9.1	81.8	9.1		0	75	25	
PHF	.750	.542	.000	.571	.000	.250	.250	.500	.250	.563	.250	.550	.000	.750	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

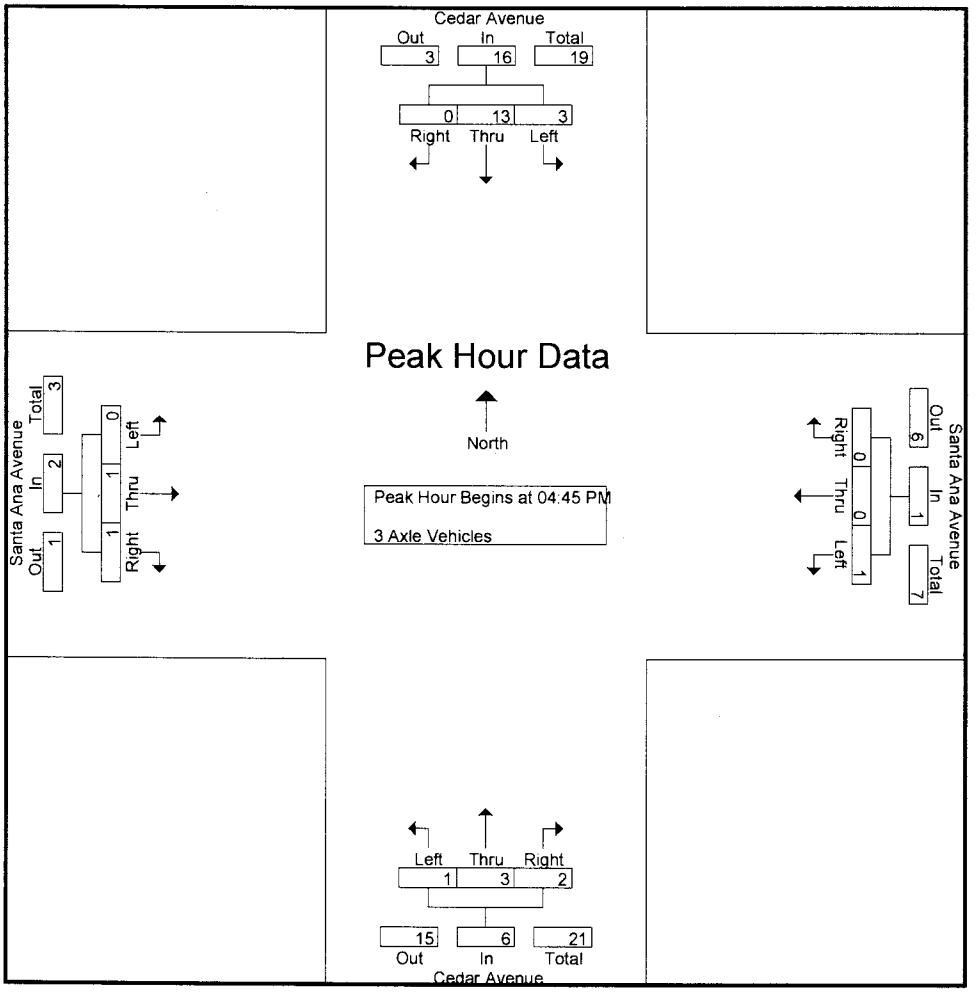
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	0	1	0	1	0	3	0	3	1	0	0	1	7
04:15 PM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
04:30 PM	1	2	0	3	0	1	1	2	0	2	0	2	0	0	2	2	9
04:45 PM	1	2	0	3	1	0	0	1	0	1	0	1	0	1	0	1	6
Total	2	7	0	9	2	2	1	5	0	7	0	7	1	1	2	4	25
05:00 PM	2	6	0	8	0	0	0	0	0	0	1	1	0	0	0	0	9
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
05:30 PM	0	3	0	3	0	0	0	0	1	2	1	4	0	0	0	0	7
05:45 PM	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	3	14	0	17	0	0	0	0	1	2	2	5	0	0	1	1	23
Grand Total	5	21	0	26	2	2	1	5	1	9	2	12	1	1	3	5	48
Apprch %	19.2	80.8	0		40	40	20		8.3	75	16.7		20	20	60		
Total %	10.4	43.8	0	54.2	4.2	4.2	2.1	10.4	2.1	18.8	4.2	25	2.1	2.1	6.2	10.4	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	2	0	3	**1**	0	0	**1**	0	1	0	1	0	**1**	0	**1**	6
05:00 PM	**2**	**6**	0	**8**	0	0	0	0	0	0	**1**	1	0	0	0	0	**9**
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	**1**	1	3
05:30 PM	0	3	0	3	0	0	0	0	**1**	**2**	1	**4**	0	0	0	0	7
Total Volume	3	13	0	16	1	0	0	1	1	3	2	6	0	1	1	2	25
% App. Total	18.8	81.2	0		100	0	0		16.7	50	33.3		0	50	50		
PHF	.375	.542	.000	.500	.250	.000	.000	.250	.250	.375	.500	.375	.000	.250	.250	.500	.694

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	1	2	0	3	**1**	0	0	**1**	0	1	0	1	0	**1**	0	**1**
+15 mins.	**2**	**6**	0	**8**	0	0	0	0	0	0	**1**	1	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	**1**	1
+45 mins.	0	3	0	3	0	0	0	0	**1**	**2**	1	**4**	0	0	0	0
Total Volume	3	13	0	16	1	0	0	1	1	3	2	6	0	1	1	2
% App. Total	18.8	81.2	0		100	0	0		16.7	50	33.3		0	50	50	
PHF	.375	.542	.000	.500	.250	.000	.000	.250	.250	.375	.500	.375	.000	.250	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

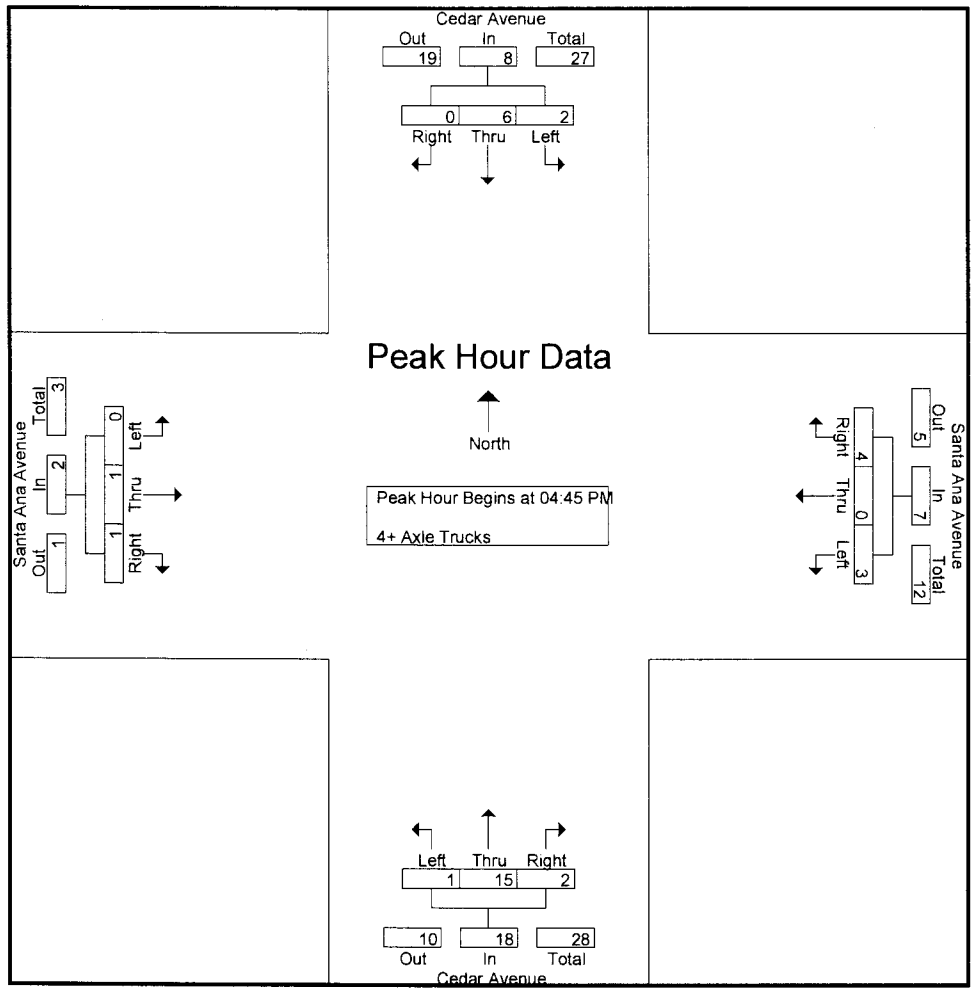
	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	0	1	2	3	0	3	2	5	0	0	1	1	11
04:15 PM	1	2	0	3	1	0	0	1	0	7	0	7	0	1	0	1	12
04:30 PM	0	3	0	3	0	0	1	1	0	4	1	5	0	1	0	1	10
04:45 PM	0	2	0	2	1	0	2	3	0	8	0	8	0	1	0	1	14
Total	1	9	0	10	2	1	5	8	0	22	3	25	0	3	1	4	47
05:00 PM	1	0	0	1	2	0	2	4	0	0	1	1	0	0	0	0	6
05:15 PM	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	5
05:30 PM	1	4	0	5	0	0	0	0	1	3	0	4	0	0	1	1	10
05:45 PM	0	1	0	1	1	0	0	1	0	4	3	7	0	0	1	1	10
Total	2	5	0	7	3	0	2	5	1	11	5	17	0	0	2	2	31
Grand Total	3	14	0	17	5	1	7	13	1	33	8	42	0	3	3	6	78
Apprch %	17.6	82.4	0		38.5	7.7	53.8		2.4	78.6	19		0	50	50		
Total %	3.8	17.9	0	21.8	6.4	1.3	9	16.7	1.3	42.3	10.3	53.8	0	3.8	3.8	7.7	

	Cedar Avenue Southbound				Santa Ana Avenue Westbound				Cedar Avenue Northbound				Santa Ana Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	2	0	2	1	0	**2**	3	0	**8**	0	**8**	0	**1**	0	**1**	**14**
05:00 PM	**1**	0	0	1	**2**	0	2	**4**	0	0	**1**	1	0	0	0	0	6
05:15 PM	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	5
05:30 PM	1	**4**	0	**5**	0	0	0	0	**1**	3	0	4	0	0	**1**	1	10
Total Volume	2	6	0	8	3	0	4	7	1	15	2	18	0	1	1	2	35
% App. Total	25	75	0		42.9	0	57.1		5.6	83.3	11.1		0	50	50		
PHF	.500	.375	.000	.400	.375	.000	.500	.438	.250	.469	.500	.563	.000	.250	.250	.500	.625

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Santa Ana Avenue
Weather: Clear

File Name : CSBCESAPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	2	0	2	1	0	**2**	3	0	**8**	0	**8**	0	**1**	0	**1**
+15 mins.	**1**	0	0	1	**2**	0	2	**4**	0	0	**1**	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0
+45 mins.	1	**4**	0	**5**	0	0	0	0	**1**	3	0	4	0	0	**1**	1
Total Volume	2	6	0	8	3	0	4	7	1	15	2	18	0	1	1	2
% App. Total	25	75	0		42.9	0	57.1		5.6	83.3	11.1		0	50	50	
PHF	.500	.375	.000	.400	.375	.000	.500	.438	.250	.469	.500	.563	.000	.250	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

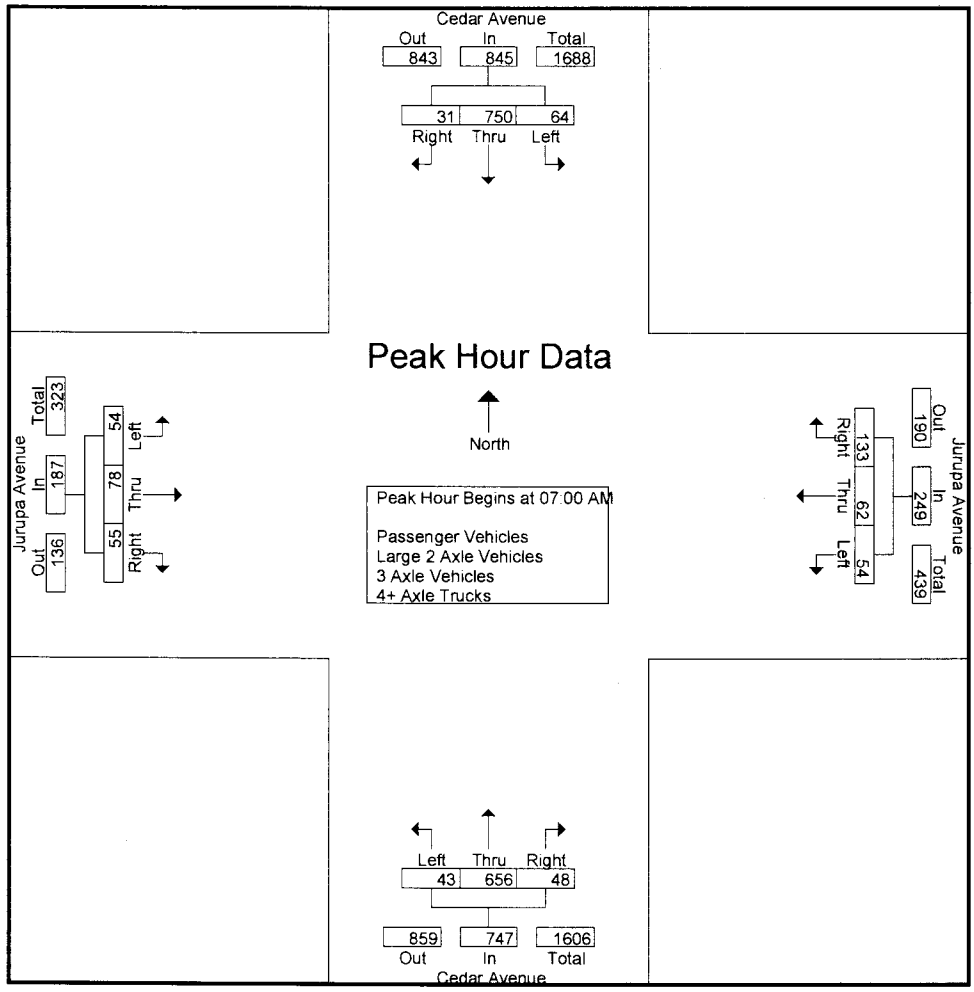
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	147	9	171	8	18	34	60	14	163	7	184	13	14	7	34	449
07:15 AM	16	174	7	197	13	24	32	69	12	154	14	180	10	30	16	56	502
07:30 AM	14	238	7	259	24	16	56	96	9	180	18	207	24	18	21	63	625
07:45 AM	19	191	8	218	9	4	11	24	8	159	9	176	7	16	11	34	452
Total	64	750	31	845	54	62	133	249	43	656	48	747	54	78	55	187	2028
08:00 AM	24	155	9	188	9	8	12	29	4	122	4	130	15	13	4	32	379
08:15 AM	8	163	6	177	5	6	9	20	7	119	6	132	6	12	4	22	351
08:30 AM	14	152	6	172	5	13	15	33	3	126	7	136	9	12	4	25	366
08:45 AM	10	130	0	140	6	7	8	21	3	125	3	131	8	6	4	18	310
Total	56	600	21	677	25	34	44	103	17	492	20	529	38	43	16	97	1406
Grand Total	120	1350	52	1522	79	96	177	352	60	1148	68	1276	92	121	71	284	3434
Apprch %	7.9	88.7	3.4		22.4	27.3	50.3		4.7	90	5.3		32.4	42.6	25		
Total %	3.5	39.3	1.5	44.3	2.3	2.8	5.2	10.3	1.7	33.4	2	37.2	2.7	3.5	2.1	8.3	
Passenger Vehicles	113	1230	51	1394	76	90	171	337	58	1063	66	1187	88	118	69	275	3193
% Passenger Vehicles	94.2	91.1	98.1	91.6	96.2	93.8	96.6	95.7	96.7	92.6	97.1	93	95.7	97.5	97.2	96.8	93
Large 2 Axle Vehicles	7	42	1	50	2	5	6	13	2	42	2	46	2	2	2	6	115
% Large 2 Axle Vehicles	5.8	3.1	1.9	3.3	2.5	5.2	3.4	3.7	3.3	3.7	2.9	3.6	2.2	1.7	2.8	2.1	3.3
3 Axle Vehicles	0	19	0	19	0	0	0	0	0	8	0	8	1	0	0	1	28
% 3 Axle Vehicles	0	1.4	0	1.2	0	0	0	0	0	0.7	0	0.6	1.1	0	0	0.4	0.8
4+ Axle Trucks	0	59	0	59	1	1	0	2	0	35	0	35	1	1	0	2	98
% 4+ Axle Trucks	0	4.4	0	3.9	1.3	1	0	0.6	0	3	0	2.7	1.1	0.8	0	0.7	2.9

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	15	147	**9**	171	8	18	34	60	**14**	163	7	184	13	14	7	34	449
07:15 AM	16	174	7	197	13	**24**	32	69	12	154	14	180	10	**30**	16	56	502
07:30 AM	14	**238**	7	**259**	**24**	16	**56**	**96**	9	**180**	**18**	**207**	**24**	18	**21**	**63**	**625**
07:45 AM	**19**	191	8	218	9	4	11	24	8	159	9	176	7	16	11	34	452
Total Volume	64	750	31	845	54	62	133	249	43	656	48	747	54	78	55	187	2028
% App. Total	7.6	88.8	3.7		21.7	24.9	53.4		5.8	87.8	6.4		28.9	41.7	29.4		
PHF	.842	.788	.861	.816	.563	.646	.594	.648	.768	.911	.667	.902	.563	.650	.655	.742	.811

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	16	174	7	197	8	18	34	60	**14**	163	7	184	13	14	7	34
+15 mins.	14	**238**	7	**259**	13	**24**	32	69	12	154	14	180	10	**30**	16	56
+30 mins.	19	191	8	218	**24**	16	**56**	**96**	9	**180**	**18**	**207**	**24**	18	**21**	**63**
+45 mins.	**24**	155	**9**	188	9	4	11	24	8	159	9	176	7	16	11	34
Total Volume	73	758	31	862	54	62	133	249	43	656	48	747	54	78	55	187
% App. Total	8.5	87.9	3.6		21.7	24.9	53.4		5.8	87.8	6.4		28.9	41.7	29.4	
PHF	.760	.796	.861	.832	.563	.646	.594	.648	.768	.911	.667	.902	.563	.650	.655	.742

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

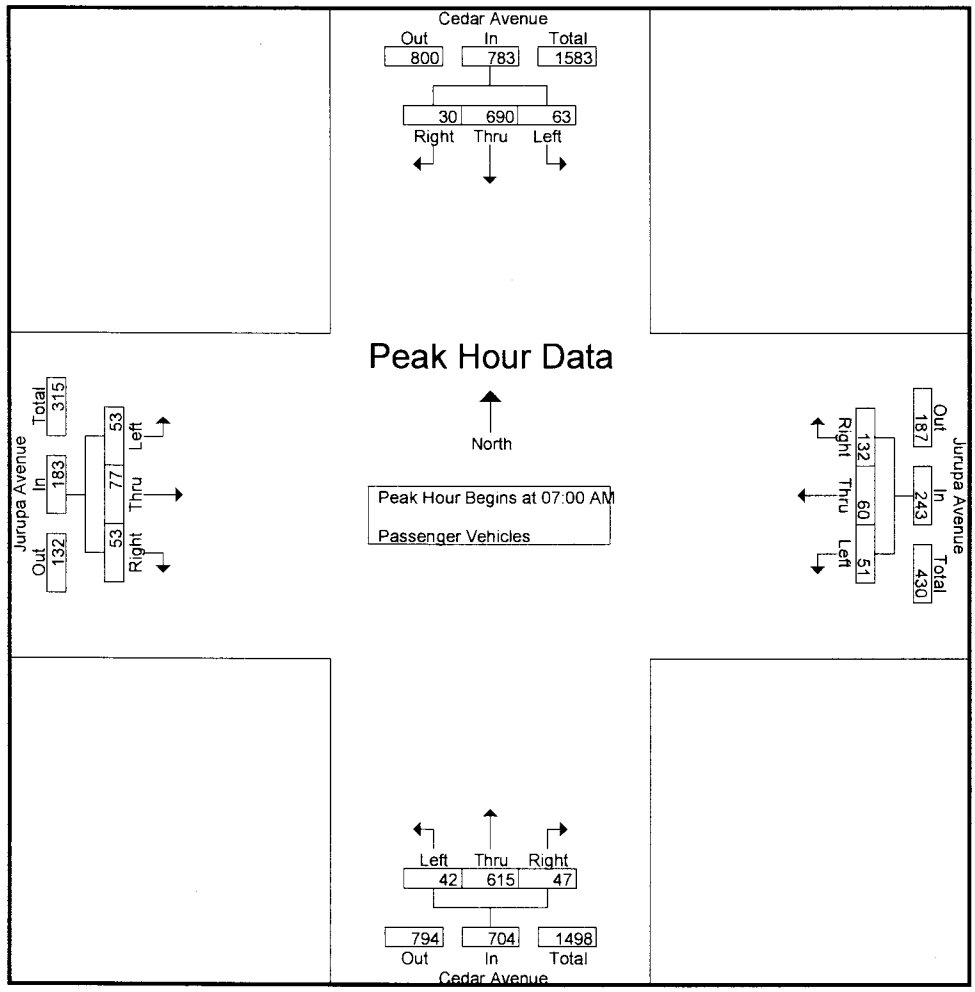
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	133	9	157	8	18	34	60	14	153	7	174	13	14	6	33	424
07:15 AM	15	155	7	177	12	22	32	66	11	146	14	171	10	30	16	56	470
07:30 AM	14	220	7	241	24	16	55	95	9	172	18	199	23	18	21	62	597
07:45 AM	19	182	7	208	7	4	11	22	8	144	8	160	7	15	10	32	422
Total	63	690	30	783	51	60	132	243	42	615	47	704	53	77	53	183	1913
08:00 AM	22	137	9	168	9	7	11	27	3	113	4	120	14	13	4	31	346
08:15 AM	7	150	6	163	5	5	8	18	7	107	6	120	5	11	4	20	321
08:30 AM	14	135	6	155	5	12	13	30	3	117	6	126	8	11	4	23	334
08:45 AM	7	118	0	125	6	6	7	19	3	111	3	117	8	6	4	18	279
Total	50	540	21	611	25	30	39	94	16	448	19	483	35	41	16	92	1280
Grand Total	113	1230	51	1394	76	90	171	337	58	1063	66	1187	88	118	69	275	3193
Apprch %	8.1	88.2	3.7		22.6	26.7	50.7		4.9	89.6	5.6		32	42.9	25.1		
Total %	3.5	38.5	1.6	43.7	2.4	2.8	5.4	10.6	1.8	33.3	2.1	37.2	2.8	3.7	2.2	8.6	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	15	133	**9**	157	8	18	34	60	**14**	153	7	174	13	14	6	33	424
07:15 AM	15	155	7	177	12	**22**	32	66	11	146	14	171	10	**30**	16	56	470
07:30 AM	14	**220**	7	**241**	**24**	16	**55**	**95**	9	**172**	**18**	**199**	**23**	18	**21**	**62**	**597**
07:45 AM	**19**	182	7	208	7	4	11	22	8	144	8	160	7	15	10	32	422
Total Volume	63	690	30	783	51	60	132	243	42	615	47	704	53	77	53	183	1913
% App. Total	8	88.1	3.8		21	24.7	54.3		6	87.4	6.7		29	42.1	29		
PHF	.829	.784	.833	.812	.531	.682	.600	.639	.750	.894	.653	.884	.576	.642	.631	.738	.801

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	15	133	**9**	157	8	18	34	60	**14**	153	7	174	13	14	6	33
+15 mins.	15	155	7	177	12	**22**	32	66	11	146	14	171	10	**30**	16	56
+30 mins.	14	**220**	7	**241**	**24**	16	**55**	**95**	9	**172**	**18**	**199**	**23**	18	**21**	**62**
+45 mins.	**19**	182	7	208	7	4	11	22	8	144	8	160	7	15	10	32
Total Volume	63	690	30	783	51	60	132	243	42	615	47	704	53	77	53	183
% App. Total	8	88.1	3.8		21	24.7	54.3		6	87.4	6.7		29	42.1	29	
PHF	.829	.784	.833	.812	.531	.682	.600	.639	.750	.894	.653	.884	.576	.642	.631	.738

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

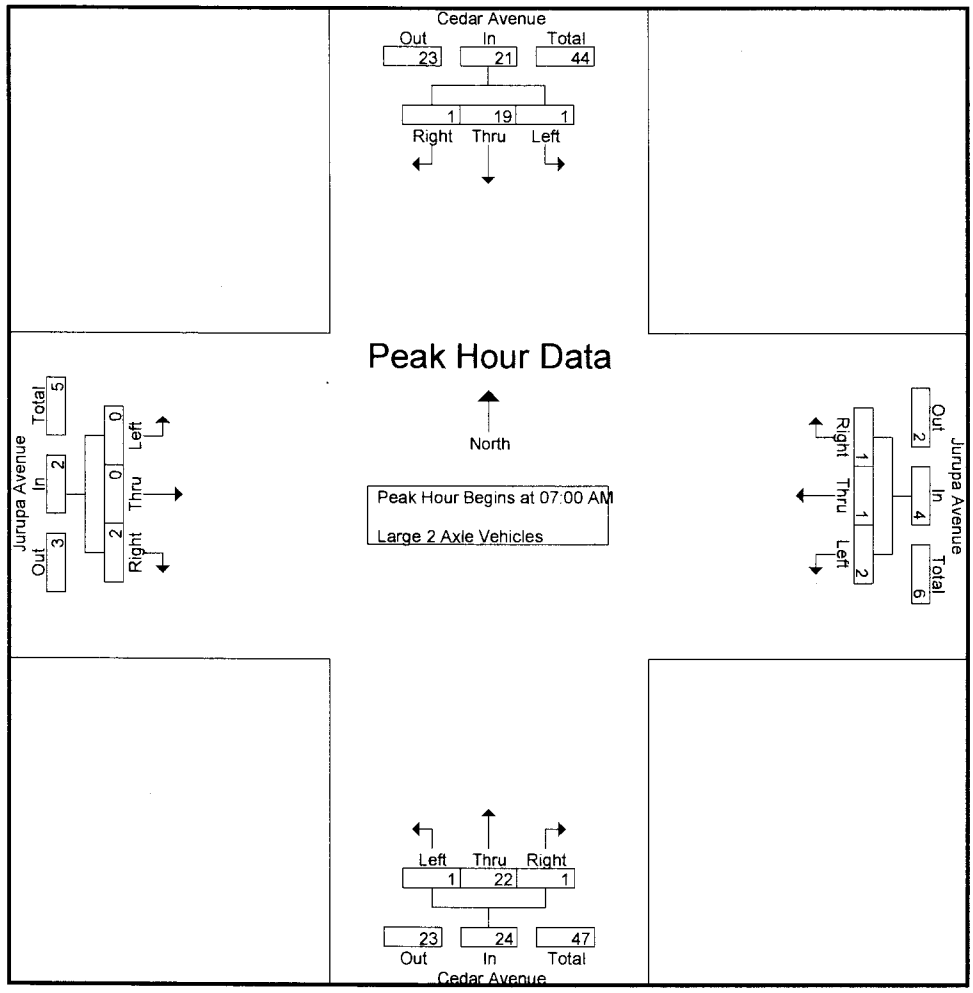
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	4	0	4	0	0	0	0	0	6	0	6	0	0	1	1	11
07:15 AM	1	6	0	7	0	1	0	1	1	4	0	5	0	0	0	0	13
07:30 AM	0	6	0	6	0	0	1	1	0	3	0	3	0	0	0	0	10
07:45 AM	0	3	1	4	2	0	0	2	0	9	1	10	0	0	1	1	17
Total	1	19	1	21	2	1	1	4	1	22	1	24	0	0	2	2	51
08:00 AM	2	6	0	8	0	1	1	2	1	5	0	6	0	0	0	0	16
08:15 AM	1	6	0	7	0	1	1	2	0	7	0	7	1	1	0	2	18
08:30 AM	0	5	0	5	0	1	2	3	0	4	1	5	1	1	0	2	15
08:45 AM	3	6	0	9	0	1	1	2	0	4	0	4	0	0	0	0	15
Total	6	23	0	29	0	4	5	9	1	20	1	22	2	2	0	4	64
Grand Total	7	42	1	50	2	5	6	13	2	42	2	46	2	2	2	6	115
Apprch %	14	84	2		15.4	38.5	46.2		4.3	91.3	4.3		33.3	33.3	33.3		
Total %	6.1	36.5	0.9	43.5	1.7	4.3	5.2	11.3	1.7	36.5	1.7	40	1.7	1.7	1.7	5.2	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	4	0	4	0	0	0	0	0	6	0	6	0	0	1	1	11
07:15 AM	1	6	0	7	0	1	0	1	1	4	0	5	0	0	0	0	13
07:30 AM	0	6	0	6	0	0	1	1	0	3	0	3	0	0	0	0	10
07:45 AM	0	3	1	4	2	0	0	2	0	9	1	10	0	0	1	1	17
Total Volume	1	19	1	21	2	1	1	4	1	22	1	24	0	0	2	2	51
% App. Total	4.8	90.5	4.8		50	25	25		4.2	91.7	4.2		0	0	100		
PHF	.250	.792	.250	.750	.250	.250	.250	.500	.250	.611	.250	.600	.000	.000	.500	.500	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	4	0	4	0	0	0	0	0	6	0	6	0	0	**1**	**1**
+15 mins.	**1**	**6**	0	**7**	0	**1**	0	1	**1**	4	0	5	0	0	0	0
+30 mins.	0	6	0	6	0	0	**1**	1	0	3	0	3	0	0	0	0
+45 mins.	0	3	**1**	4	**2**	0	0	**2**	0	**9**	**1**	**10**	0	0	1	1
Total Volume	1	19	1	21	2	1	1	4	1	22	1	24	0	0	2	2
% App. Total	4.8	90.5	4.8		50	25	25		4.2	91.7	4.2		0	0	100	
PHF	.250	.792	.250	.750	.250	.250	.250	.500	.250	.611	.250	.600	.000	.000	.500	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

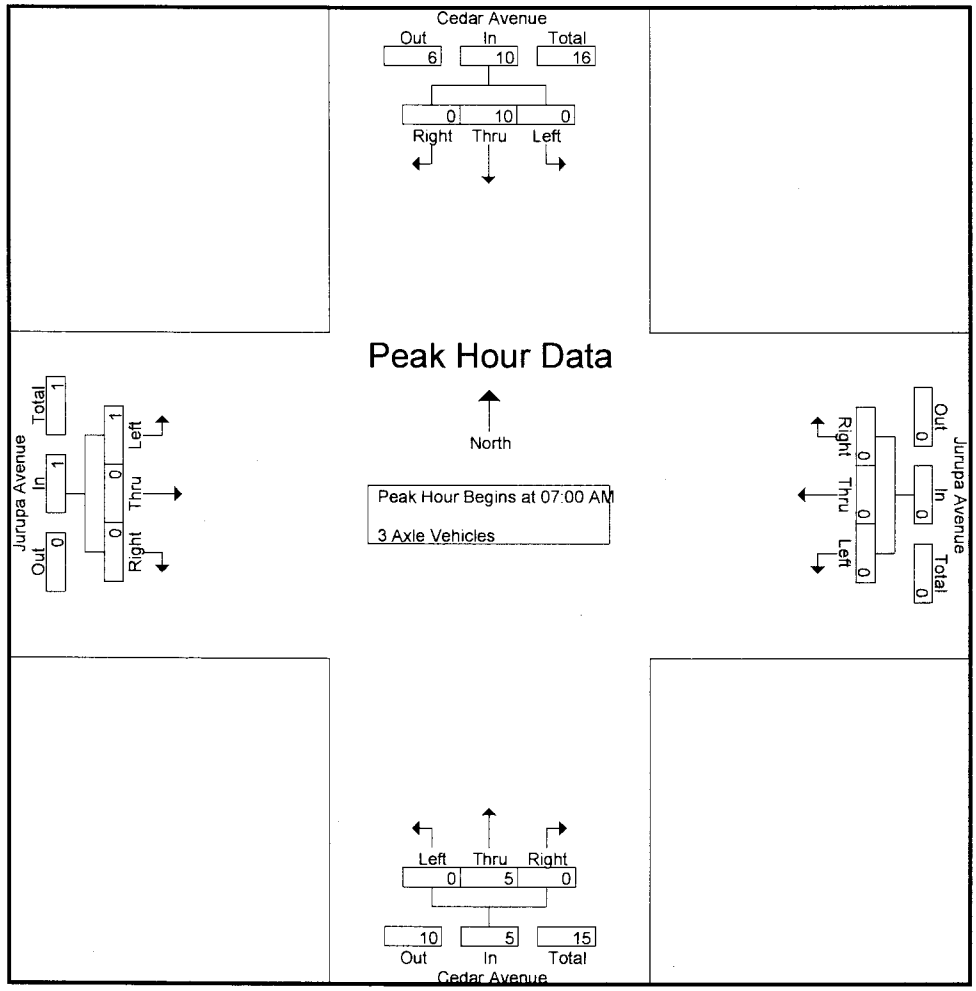
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	4	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
07:30 AM	0	3	0	3	0	0	0	0	0	2	0	2	1	0	0	1	6
07:45 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total	0	10	0	10	0	0	0	0	0	5	0	5	1	0	0	1	16
08:00 AM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	0	9	0	9	0	0	0	0	0	3	0	3	0	0	0	0	12
Grand Total	0	19	0	19	0	0	0	0	0	8	0	8	1	0	0	1	28
Apprch %	0	100	0		0	0	0		0	100	0		100	0	0		
Total %	0	67.9	0	67.9	0	0	0	0	0	28.6	0	28.6	3.6	0	0	3.6	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	**4**	0	**4**	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**6**
07:30 AM	0	3	0	3	0	0	0	0	0	2	0	2	**1**	0	0	**1**	6
07:45 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total Volume	0	10	0	10	0	0	0	0	0	5	0	5	1	0	0	1	16
% App. Total	0	100	0		0	0	0		0	100	0		100	0	0		
PHF	.000	.625	.000	.625	.000	.000	.000	.000	.000	.625	.000	.625	.250	.000	.000	.250	.667

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**4**	0	**4**	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+30 mins.	0	3	0	3	0	0	0	0	0	2	0	2	**1**	0	0	**1**
+45 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	10	0	10	0	0	0	0	0	5	0	5	1	0	0	1
% App. Total	0	100	0		0	0	0		0	100	0		100	0	0	
PHF	.000	.625	.000	.625	.000	.000	.000	.000	.000	.625	.000	.625	.250	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

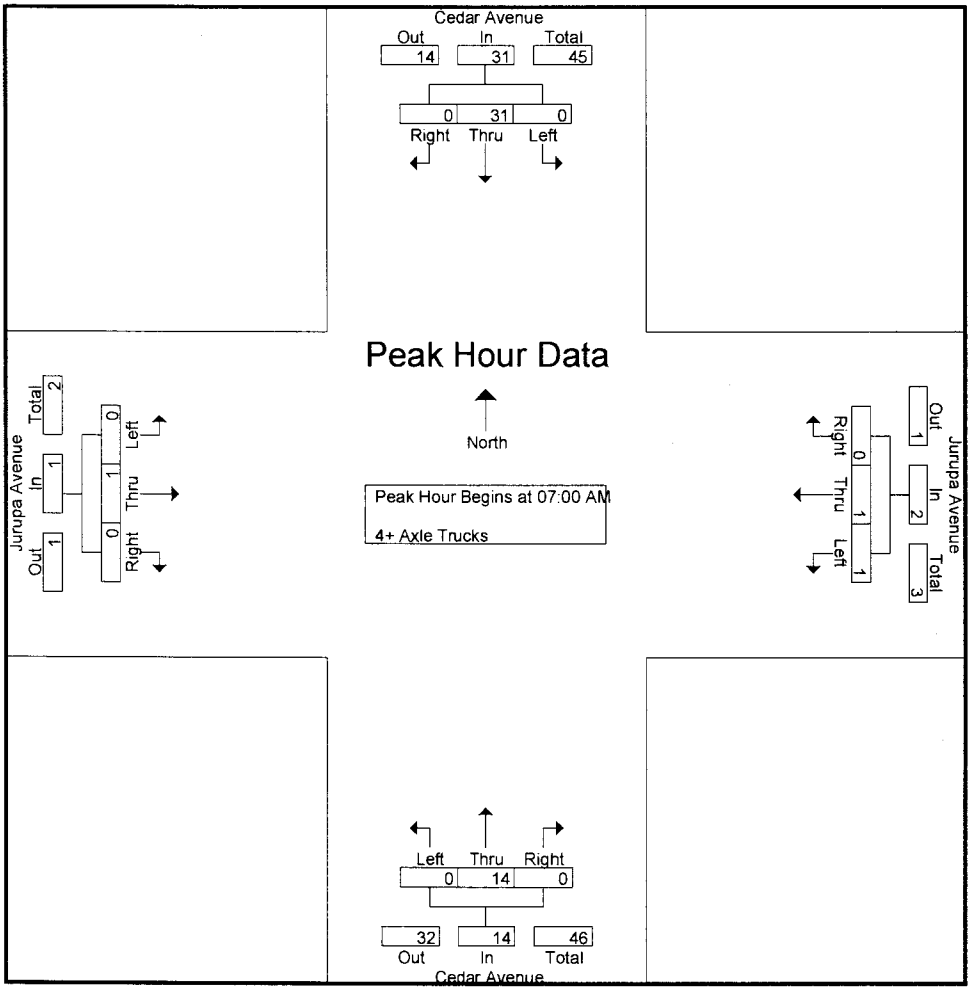
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	9	0	9	0	0	0	0	0	4	0	4	0	0	0	0	13
07:15 AM	0	9	0	9	1	1	0	2	0	2	0	2	0	0	0	0	13
07:30 AM	0	9	0	9	0	0	0	0	0	3	0	3	0	0	0	0	12
07:45 AM	0	4	0	4	0	0	0	0	0	5	0	5	0	1	0	1	10
Total	0	31	0	31	1	1	0	2	0	14	0	14	0	1	0	1	48
08:00 AM	0	8	0	8	0	0	0	0	0	4	0	4	1	0	0	1	13
08:15 AM	0	6	0	6	0	0	0	0	0	4	0	4	0	0	0	0	10
08:30 AM	0	9	0	9	0	0	0	0	0	5	0	5	0	0	0	0	14
08:45 AM	0	5	0	5	0	0	0	0	0	8	0	8	0	0	0	0	13
Total	0	28	0	28	0	0	0	0	0	21	0	21	1	0	0	1	50
Grand Total	0	59	0	59	1	1	0	2	0	35	0	35	1	1	0	2	98
Apprch %	0	100	0		50	50	0		0	100	0		50	50	0		
Total %	0	60.2	0	60.2	1	1	0	2	0	35.7	0	35.7	1	1	0	2	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**9**	0	**9**	0	0	0	0	0	**4**	0	4	0	0	0	0	**13**
07:15 AM	0	9	0	9	**1**	**1**	0	**2**	0	2	0	2	0	0	0	0	13
07:30 AM	0	9	0	9	0	0	0	0	0	3	0	3	0	0	0	0	12
07:45 AM	0	4	0	4	0	0	0	0	0	**5**	0	**5**	0	**1**	0	**1**	10
Total Volume	0	31	0	31	1	1	0	2	0	14	0	14	0	1	0	1	48
% App. Total	0	100	0		50	50	0		0	100	0		0	100	0		
PHF	.000	.861	.000	.861	.250	.250	.000	.250	.000	.700	.000	.700	.000	.250	.000	.250	.923

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUAM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	**9**	0	**9**	0	0	0	0	0	4	0	4	0	0	0	0
+15 mins.	0	9	0	9	**1**	**1**	0	**2**	0	2	0	2	0	0	0	0
+30 mins.	0	9	0	9	0	0	0	0	0	3	0	3	0	0	0	0
+45 mins.	0	4	0	4	0	0	0	0	0	**5**	0	**5**	0	**1**	0	**1**
Total Volume	0	31	0	31	1	1	0	2	0	14	0	14	0	1	0	1
% App. Total	0	100	0		50	50	0		0	100	0		0	100	0	
PHF	.000	.861	.000	.861	.250	.250	.000	.250	.000	.700	.000	.700	.000	.250	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

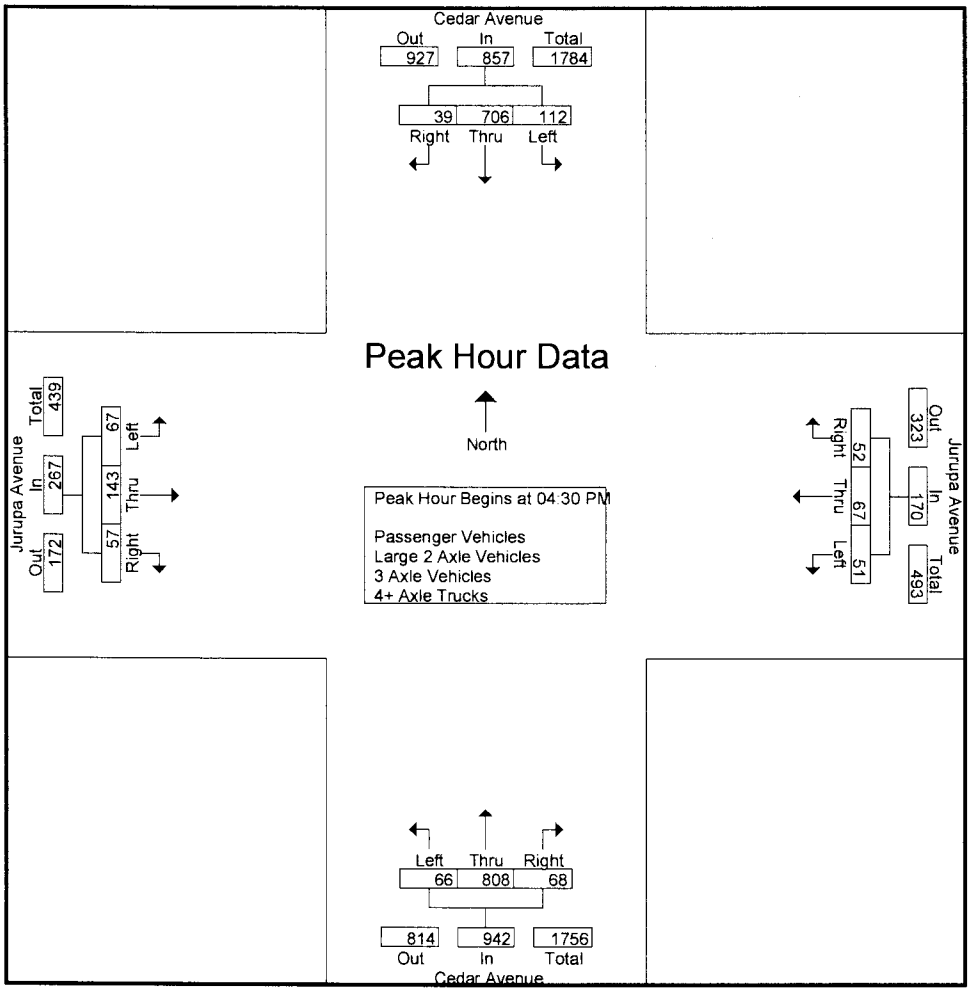
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	16	185	7	208	12	15	15	42	10	206	13	229	16	32	11	59	538
04:15 PM	14	185	8	207	9	11	10	30	13	199	11	223	19	26	23	68	528
04:30 PM	19	188	8	215	17	5	10	32	14	184	15	213	14	30	16	60	520
04:45 PM	27	181	15	223	9	19	10	38	20	187	19	226	19	35	12	66	553
Total	76	739	38	853	47	50	45	142	57	776	58	891	68	123	62	253	2139
05:00 PM	35	163	8	206	19	26	16	61	16	192	12	220	21	37	14	72	559
05:15 PM	31	174	8	213	6	17	16	39	16	245	22	283	13	41	15	69	604
05:30 PM	18	171	7	196	10	12	8	30	12	186	9	207	7	29	19	55	488
05:45 PM	14	165	4	183	17	13	6	36	13	161	11	185	14	38	16	68	472
Total	98	673	27	798	52	68	46	166	57	784	54	895	55	145	64	264	2123
Grand Total	174	1412	65	1651	99	118	91	308	114	1560	112	1786	123	268	126	517	4262
Apprch %	10.5	85.5	3.9		32.1	38.3	29.5		6.4	87.3	6.3		23.8	51.8	24.4		
Total %	4.1	33.1	1.5	38.7	2.3	2.8	2.1	7.2	2.7	36.6	2.6	41.9	2.9	6.3	3	12.1	
Passenger Vehicles	162	1336	60	1558	89	117	85	291	110	1490	105	1705	120	253	120	493	4047
% Passenger Vehicles	93.1	94.6	92.3	94.4	89.9	99.2	93.4	94.5	96.5	95.5	93.8	95.5	97.6	94.4	95.2	95.4	95
Large 2 Axle Vehicles	10	33	3	46	6	1	5	12	4	27	6	37	1	9	3	13	108
% Large 2 Axle Vehicles	5.7	2.3	4.6	2.8	6.1	0.8	5.5	3.9	3.5	1.7	5.4	2.1	0.8	3.4	2.4	2.5	2.5
3 Axle Vehicles	1	23	0	24	2	0	1	3	0	12	0	12	0	1	1	2	41
% 3 Axle Vehicles	0.6	1.6	0	1.5	2	0	1.1	1	0	0.8	0	0.7	0	0.4	0.8	0.4	1
4+ Axle Trucks	1	20	2	23	2	0	0	2	0	31	1	32	2	5	2	9	66
% 4+ Axle Trucks	0.6	1.4	3.1	1.4	2	0	0	0.6	0	2	0.9	1.8	1.6	1.9	1.6	1.7	1.5

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	19	**188**	8	215	17	5	10	32	14	184	15	213	14	30	**16**	60	520
04:45 PM	27	181	**15**	**223**	9	19	10	38	**20**	187	19	226	19	35	12	66	553
05:00 PM	**35**	163	8	206	**19**	**26**	**16**	**61**	16	192	12	220	**21**	37	14	**72**	559
05:15 PM	31	174	8	213	6	17	16	39	16	**245**	**22**	**283**	13	**41**	15	69	**604**
Total Volume	112	706	39	857	51	67	52	170	66	808	68	942	67	143	57	267	2236
% App. Total	13.1	82.4	4.6		30	39.4	30.6		7	85.8	7.2		25.1	53.6	21.3		
PHF	.800	.939	.650	.961	.671	.644	.813	.697	.825	.824	.773	.832	.798	.872	.891	.927	.925

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	19	**188**	8	215	17	5	10	32	14	184	15	213	14	30	**16**	60
+15 mins.	27	181	**15**	**223**	9	19	10	38	**20**	187	19	226	19	35	12	66
+30 mins.	**35**	163	8	206	**19**	**26**	**16**	**61**	16	192	12	220	**21**	37	14	**72**
+45 mins.	31	174	8	213	6	17	16	39	16	**245**	**22**	**283**	13	**41**	15	69
Total Volume	112	706	39	857	51	67	52	170	66	808	68	942	67	143	57	267
% App. Total	13.1	82.4	4.6		30	39.4	30.6		7	85.8	7.2		25.1	53.6	21.3	
PHF	.800	.939	.650	.961	.671	.644	.813	.697	.825	.824	.773	.832	.798	.872	.891	.927

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Passenger Vehicles

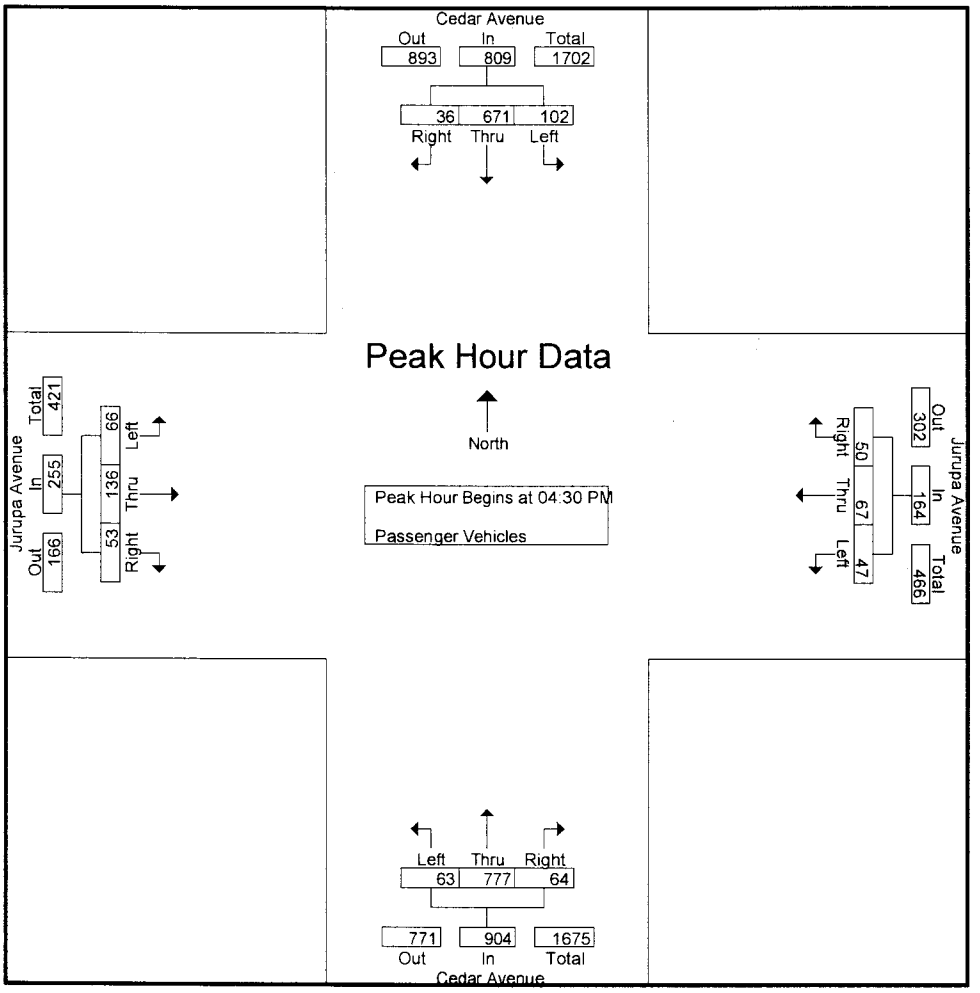
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	15	168	7	190	9	15	13	37	9	196	11	216	16	32	11	59	502
04:15 PM	14	177	8	199	9	10	8	27	13	188	11	212	18	23	22	63	501
04:30 PM	16	177	6	199	14	5	9	28	12	177	15	204	14	28	15	57	488
04:45 PM	24	174	14	212	8	19	9	36	20	179	16	215	18	35	10	63	526
Total	69	696	35	800	40	49	39	128	54	740	53	847	66	118	58	242	2017
05:00 PM	34	151	8	193	19	26	16	61	15	187	12	214	21	36	13	70	538
05:15 PM	28	169	8	205	6	17	16	39	16	234	21	271	13	37	15	65	580
05:30 PM	17	164	6	187	9	12	8	29	12	176	9	197	6	26	19	51	464
05:45 PM	14	156	3	173	15	13	6	34	13	153	10	176	14	36	15	65	448
Total	93	640	25	758	49	68	46	163	56	750	52	858	54	135	62	251	2030
Grand Total	162	1336	60	1558	89	117	85	291	110	1490	105	1705	120	253	120	493	4047
Apprch %	10.4	85.8	3.9		30.6	40.2	29.2		6.5	87.4	6.2		24.3	51.3	24.3		
Total %	4	33	1.5	38.5	2.2	2.9	2.1	7.2	2.7	36.8	2.6	42.1	3	6.3	3	12.2	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	16	**177**	6	199	14	5	9	28	12	177	15	204	14	28	**15**	57	488
04:45 PM	24	174	**14**	**212**	8	19	9	36	**20**	179	16	215	18	35	10	63	526
05:00 PM	**34**	151	8	193	**19**	**26**	**16**	**61**	15	187	12	214	**21**	36	13	**70**	538
05:15 PM	28	169	8	205	6	17	16	39	16	**234**	**21**	**271**	13	**37**	15	65	**580**
Total Volume	102	671	36	809	47	67	50	164	63	777	64	904	66	136	53	255	2132
% App. Total	12.6	82.9	4.4		28.7	40.9	30.5		7	86	7.1		25.9	53.3	20.8		
PHF	.750	.948	.643	.954	.618	.644	.781	.672	.788	.830	.762	.834	.786	.919	.883	.911	.919

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	16	**177**	6	199	14	5	9	28	12	177	15	204	14	28	**15**	57
+15 mins.	24	174	**14**	**212**	8	19	9	36	**20**	179	16	215	18	35	10	63
+30 mins.	**34**	151	8	193	**19**	**26**	**16**	**61**	15	187	12	214	**21**	36	13	**70**
+45 mins.	28	169	8	205	6	17	16	39	16	**234**	**21**	**271**	13	**37**	15	65
Total Volume	102	671	36	809	47	67	50	164	63	777	64	904	66	136	53	255
% App. Total	12.6	82.9	4.4		28.7	40.9	30.5		7	86	7.1		25.9	53.3	20.8	
PHF	.750	.948	.643	.954	.618	.644	.781	.672	.788	.830	.762	.834	.786	.919	.883	.911

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- Large 2 Axle Vehicles

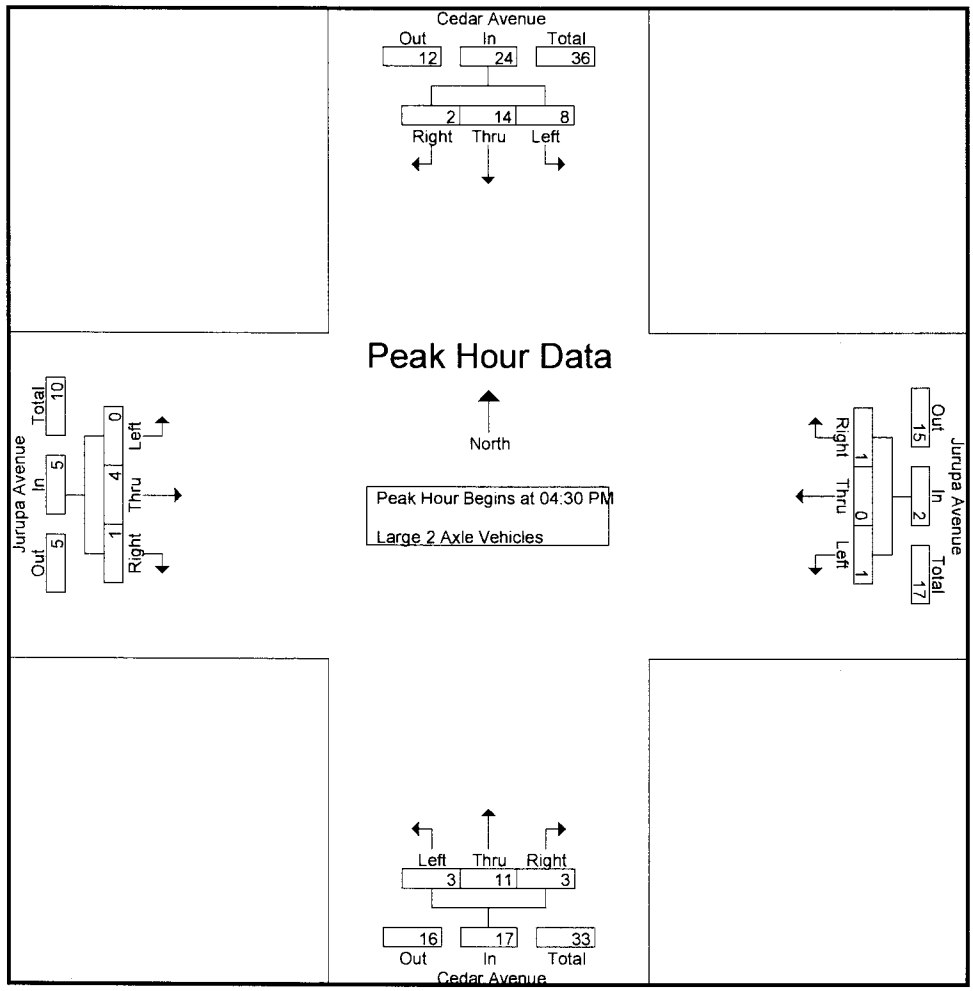
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	11	0	12	3	0	2	5	1	5	2	8	0	0	0	0	25
04:15 PM	0	5	0	5	0	1	2	3	0	5	0	5	1	3	1	5	18
04:30 PM	2	5	1	8	1	0	1	2	2	0	0	2	0	1	0	1	13
04:45 PM	2	3	1	6	0	0	0	0	0	2	3	5	0	0	0	0	11
Total	5	24	2	31	4	1	5	10	3	12	5	20	1	4	1	6	67
05:00 PM	1	3	0	4	0	0	0	0	1	4	0	5	0	0	1	1	10
05:15 PM	3	3	0	6	0	0	0	0	0	5	0	5	0	3	0	3	14
05:30 PM	1	1	1	3	1	0	0	1	0	4	0	4	0	1	0	1	9
05:45 PM	0	2	0	2	1	0	0	1	0	2	1	3	0	1	1	2	8
Total	5	9	1	15	2	0	0	2	1	15	1	17	0	5	2	7	41
Grand Total	10	33	3	46	6	1	5	12	4	27	6	37	1	9	3	13	108
Apprch %	21.7	71.7	6.5		50	8.3	41.7		10.8	73	16.2		7.7	69.2	23.1		
Total %	9.3	30.6	2.8	42.6	5.6	0.9	4.6	11.1	3.7	25	5.6	34.3	0.9	8.3	2.8	12	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	2	**5**	**1**	**8**	**1**	0	**1**	**2**	**2**	0	0	2	0	1	0	1	13
04:45 PM	2	3	1	6	0	0	0	0	0	2	**3**	**5**	0	0	0	0	11
05:00 PM	1	3	0	4	0	0	0	0	1	4	0	5	0	0	**1**	1	10
05:15 PM	**3**	3	0	6	0	0	0	0	0	**5**	0	5	0	**3**	0	**3**	**14**
Total Volume	8	14	2	24	1	0	1	2	3	11	3	17	0	4	1	5	48
% App. Total	33.3	58.3	8.3		50	0	50		17.6	64.7	17.6		0	80	20		
PHF	.667	.700	.500	.750	.250	.000	.250	.250	.375	.550	.250	.850	.000	.333	.250	.417	.857

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	2	**5**	**1**	**8**	**1**	0	**1**	**2**	**2**	0	0	2	0	1	0	1
+15 mins.	2	3	1	6	0	0	0	0	0	2	**3**	**5**	0	0	0	0
+30 mins.	1	3	0	4	0	0	0	0	1	4	0	5	0	0	**1**	1
+45 mins.	**3**	3	0	6	0	0	0	0	0	**5**	0	5	0	**3**	0	**3**
Total Volume	8	14	2	24	1	0	1	2	3	11	3	17	0	4	1	5
% App. Total	33.3	58.3	8.3		50	0	50		17.6	64.7	17.6		0	80	20	
PHF	.667	.700	.500	.750	.250	.000	.250	.250	.375	.550	.250	.850	.000	.333	.250	.417

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 3 Axle Vehicles

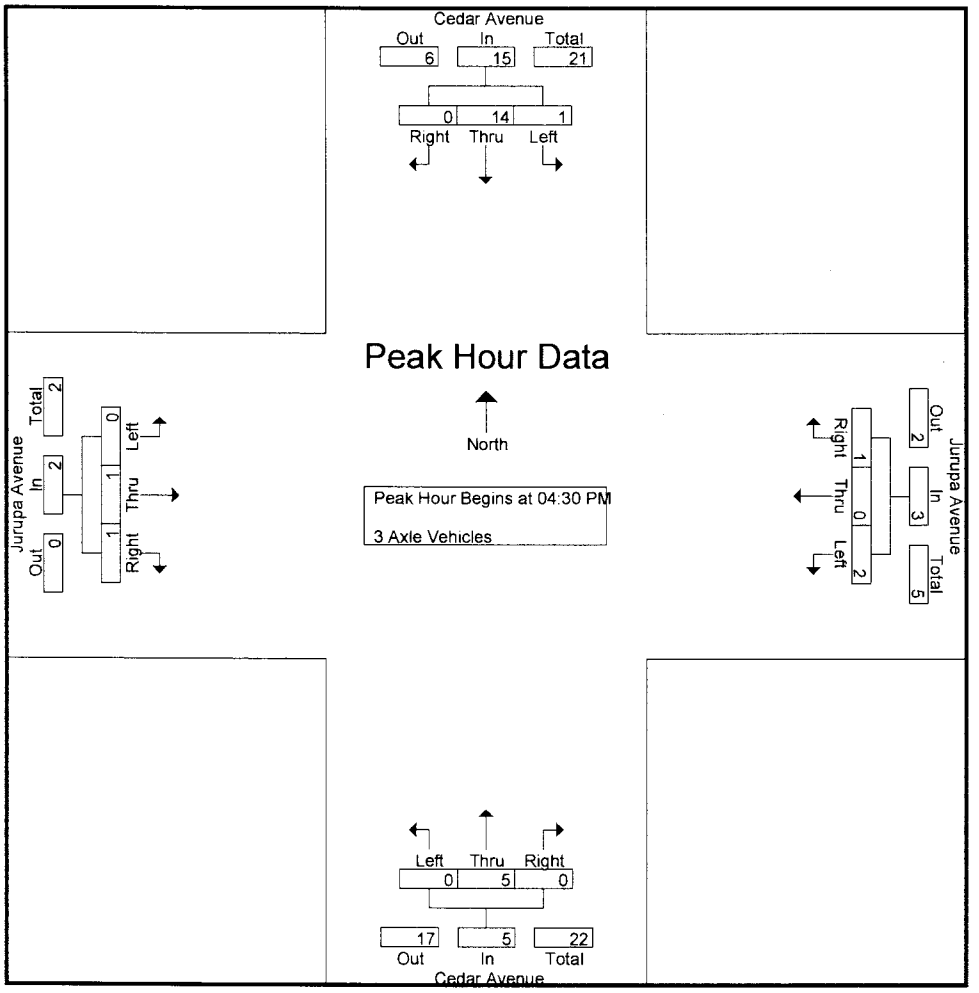
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
04:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:30 PM	1	3	0	4	1	0	0	1	0	2	0	2	0	0	0	0	7
04:45 PM	0	2	0	2	1	0	1	2	0	2	0	2	0	0	1	1	7
Total	1	8	0	9	2	0	1	3	0	8	0	8	0	0	1	1	21
05:00 PM	0	7	0	7	0	0	0	0	0	1	0	1	0	0	0	0	8
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
05:30 PM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
05:45 PM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	15	0	15	0	0	0	0	0	4	0	4	0	1	0	1	20
Grand Total	1	23	0	24	2	0	1	3	0	12	0	12	0	1	1	2	41
Apprch %	4.2	95.8	0		66.7	0	33.3		0	100	0		0	50	50		
Total %	2.4	56.1	0	58.5	4.9	0	2.4	7.3	0	29.3	0	29.3	0	2.4	2.4	4.9	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	3	0	4	**1**	0	0	1	0	**2**	0	**2**	0	0	0	0	7
04:45 PM	0	2	0	2	1	0	**1**	**2**	0	2	0	2	0	0	**1**	**1**	7
05:00 PM	0	**7**	0	**7**	0	0	0	0	0	1	0	1	0	0	0	0	**8**
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	**1**	0	1	3
Total Volume	1	14	0	15	2	0	1	3	0	5	0	5	0	1	1	2	25
% App. Total	6.7	93.3	0		66.7	0	33.3		0	100	0		0	50	50		
PHF	.250	.500	.000	.536	.500	.000	.250	.375	.000	.625	.000	.625	.000	.250	.250	.500	.781

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	3	0	4	**1**	0	0	1	0	**2**	0	**2**	0	0	0	0
+15 mins.	0	2	0	2	1	0	**1**	**2**	0	2	0	2	0	0	**1**	**1**
+30 mins.	0	**7**	0	**7**	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	**1**	0	1
Total Volume	1	14	0	15	2	0	1	3	0	5	0	5	0	1	1	2
% App. Total	6.7	93.3	0		66.7	0	33.3		0	100	0		0	50	50	
PHF	.250	.500	.000	.536	.500	.000	.250	.375	.000	.625	.000	.625	.000	.250	.250	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 1

Groups Printed- 4+ Axle Trucks

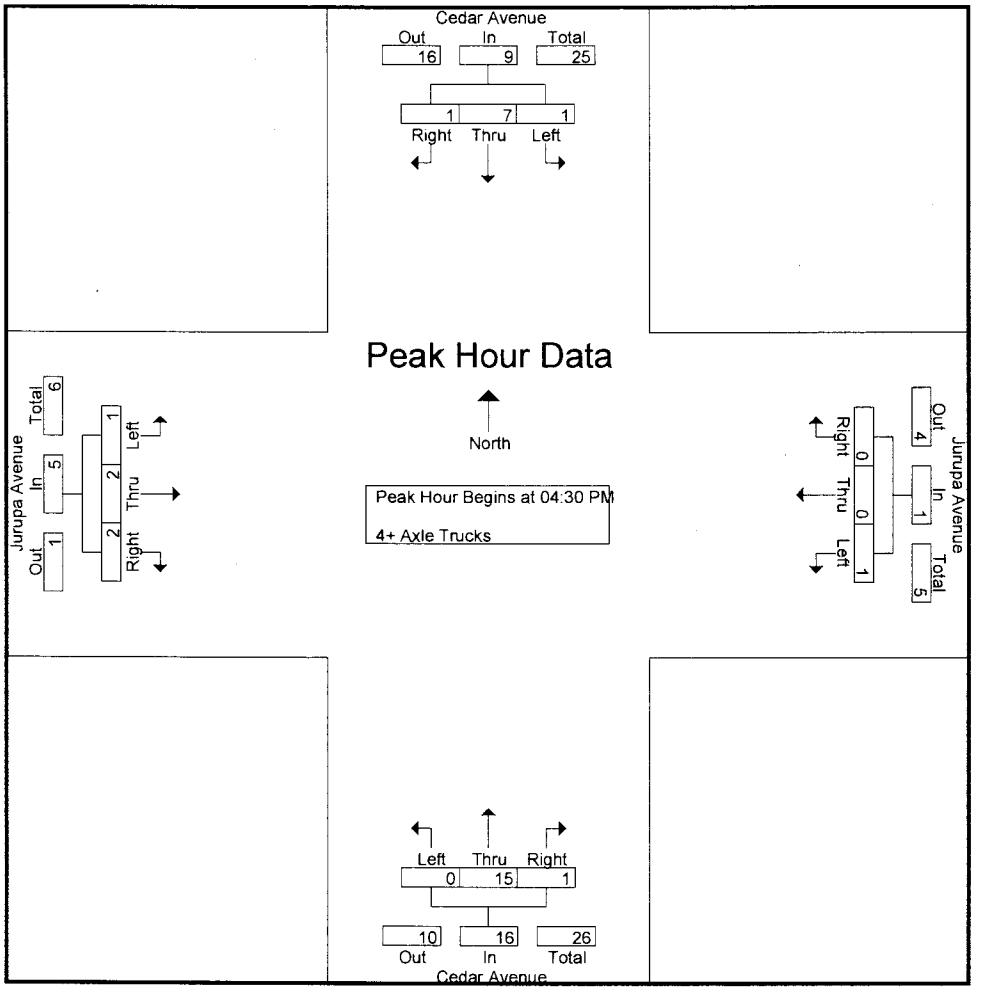
	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
04:15 PM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
04:30 PM	0	3	1	4	1	0	0	1	0	5	0	5	0	1	1	2	12
04:45 PM	1	2	0	3	0	0	0	0	0	4	0	4	1	0	1	2	9
Total	1	11	1	13	1	0	0	1	0	16	0	16	1	1	2	4	34
05:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	6	1	7	0	0	0	0	7
05:30 PM	0	4	0	4	0	0	0	0	0	3	0	3	1	2	0	3	10
05:45 PM	0	3	1	4	1	0	0	1	0	6	0	6	0	1	0	1	12
Total	0	9	1	10	1	0	0	1	0	15	1	16	1	4	0	5	32
Grand Total	1	20	2	23	2	0	0	2	0	31	1	32	2	5	2	9	66
Apprch %	4.3	87	8.7		100	0	0		0	96.9	3.1		22.2	55.6	22.2		
Total %	1.5	30.3	3	34.8	3	0	0	3	0	47	1.5	48.5	3	7.6	3	13.6	

	Cedar Avenue Southbound				Jurupa Avenue Westbound				Cedar Avenue Northbound				Jurupa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**3**	**1**	**4**	**1**	0	0	**1**	0	5	0	5	0	**1**	**1**	**2**	**12**
04:45 PM	**1**	2	0	3	0	0	0	0	0	4	0	4	**1**	0	1	2	9
05:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	0	0	0	0	**6**	**1**	**7**	0	0	0	0	7
Total Volume	1	7	1	9	1	0	0	1	0	15	1	16	1	2	2	5	31
% App. Total	11.1	77.8	11.1		100	0	0		0	93.8	6.2		20	40	40		
PHF	.250	.583	.250	.563	.250	.000	.000	.250	.000	.625	.250	.571	.250	.500	.500	.625	.646

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

County of San Bernardino
N/S: Cedar Avenue
E/W: Jurupa Avenue
Weather: Clear

File Name : CSBCEJUPM
Site Code : 07516192
Start Date : 4/6/2016
Page No : 2



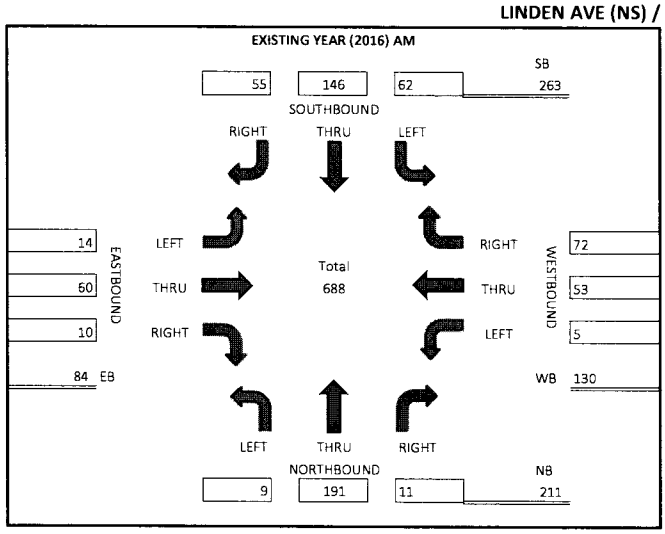
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

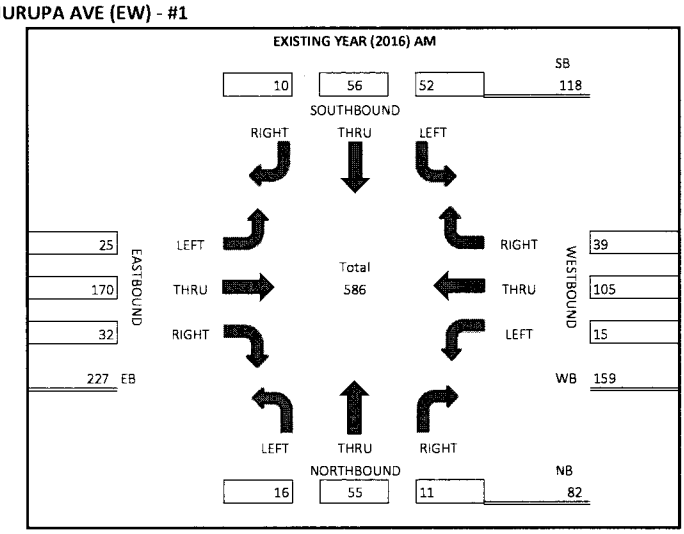
	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	**3**	**1**	**4**	**1**	0	0	**1**	0	5	0	5	0	**1**	**1**	**2**
+15 mins.	**1**	2	0	3	0	0	0	0	0	4	0	4	**1**	0	1	2
+30 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	**6**	**1**	**7**	0	0	0	0
Total Volume	1	7	1	9	1	0	0	1	0	15	1	16	1	2	2	5
% App. Total	11.1	77.8	11.1		100	0	0		0	93.8	6.2		20	40	40	
PHF	.250	.583	.250	.563	.250	.000	.000	.250	.000	.625	.250	.571	.250	.500	.500	.625

APPENDIX C

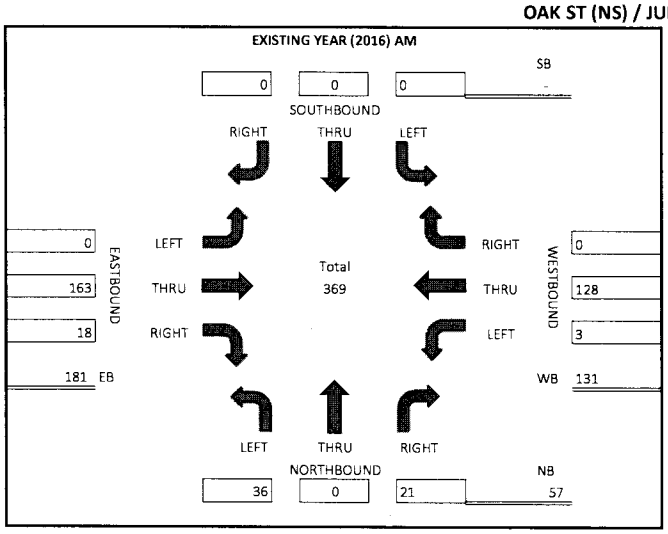
Passenger Car Equivalent Calculation Worksheets

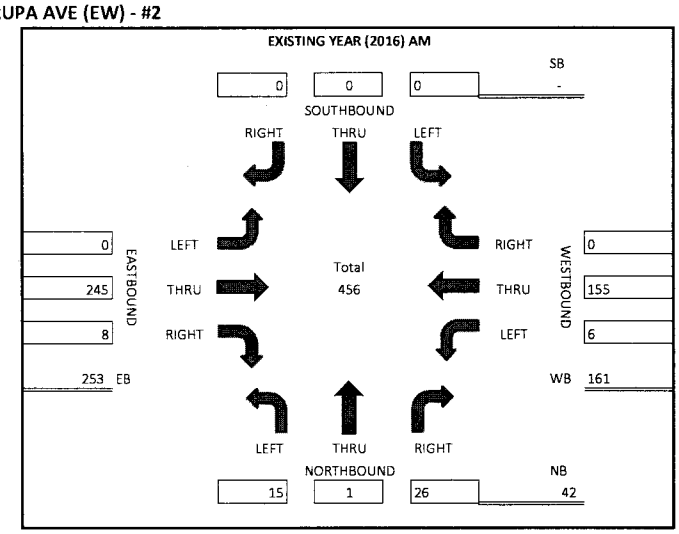
LINDEN AVE (NS) / JURUPA AVE (EW) - #1



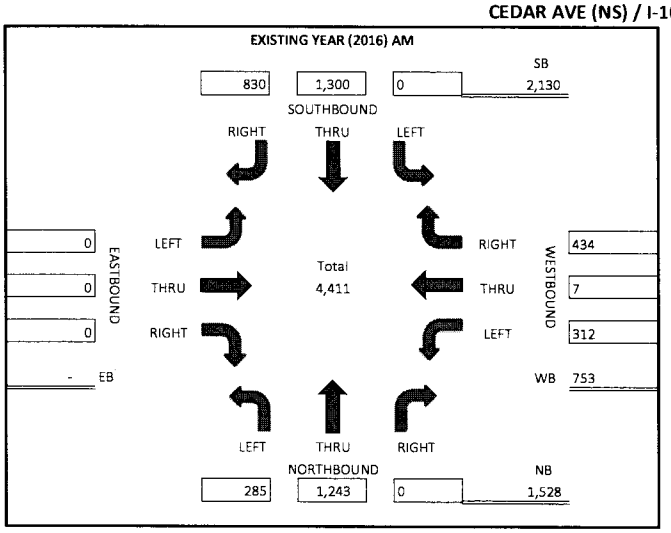


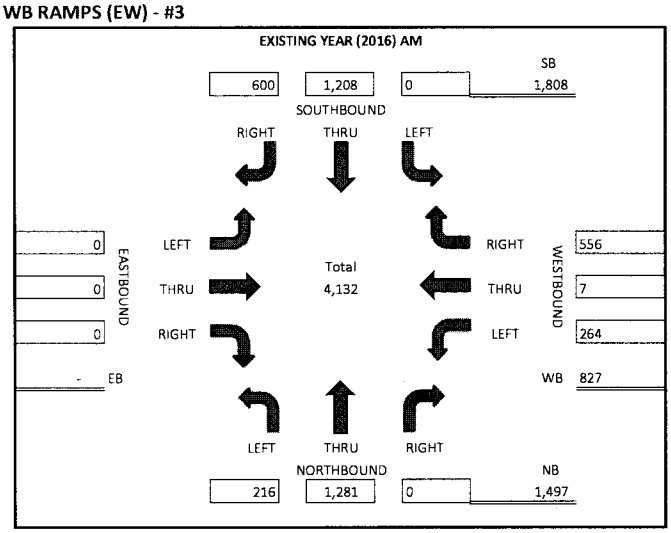
OAK ST (NS) / JURUPA AVE (EW) - #2



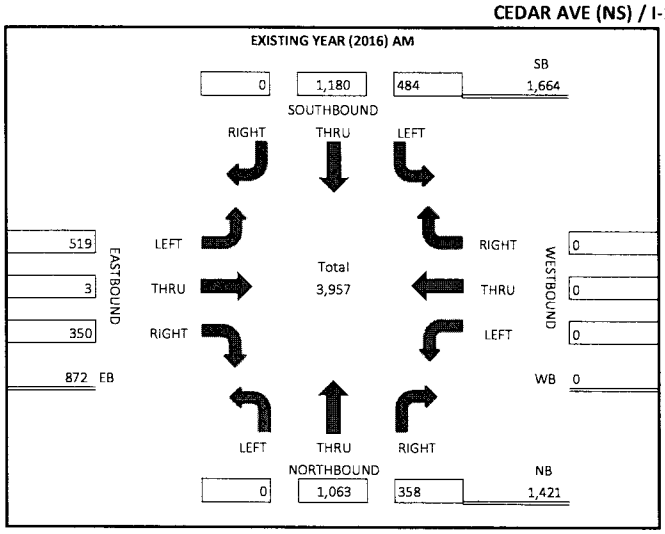


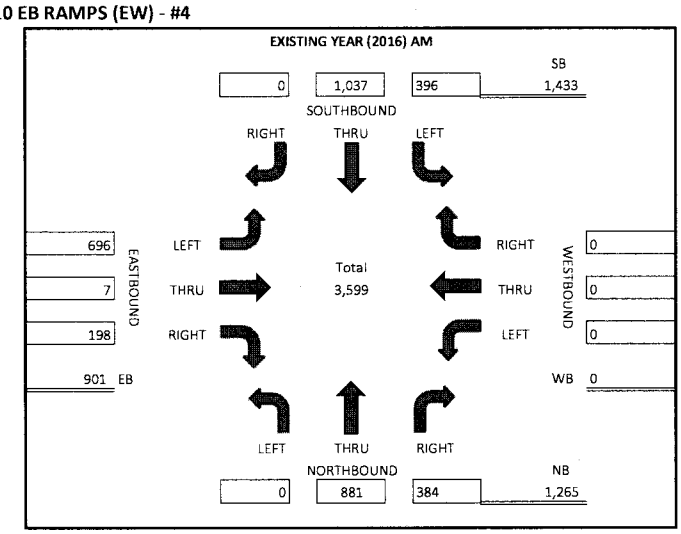
CEDAR AVE (NS) / I-10 WB RAMPS (EW) - #3



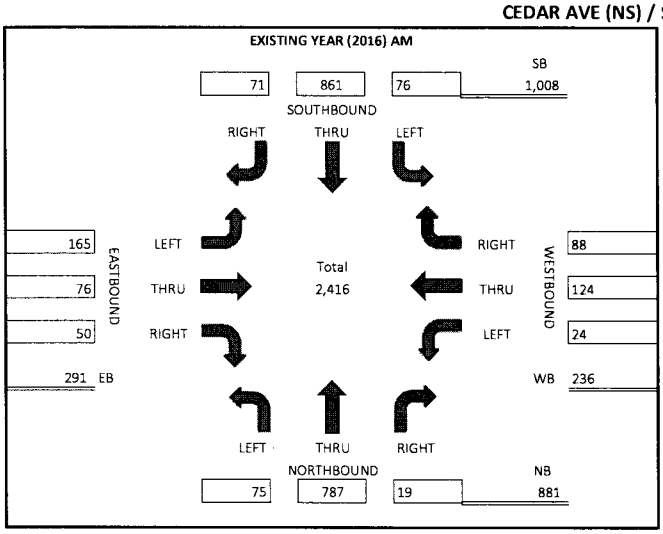


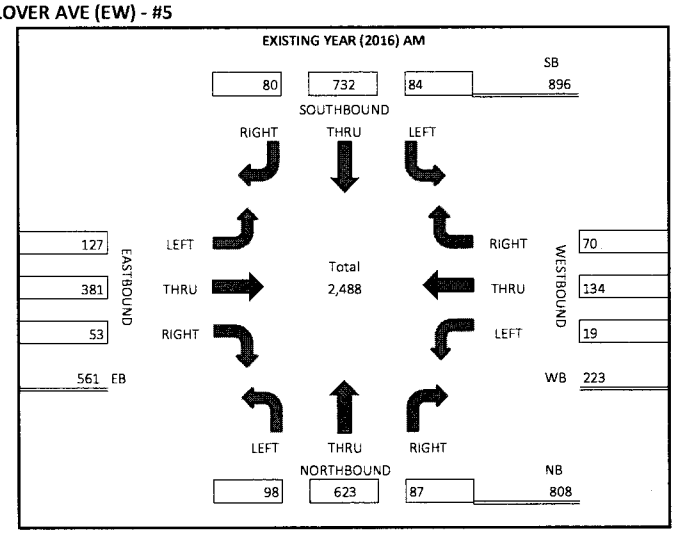
CEDAR AVE (NS) / I-10 EB RAMPS (EW) - #4



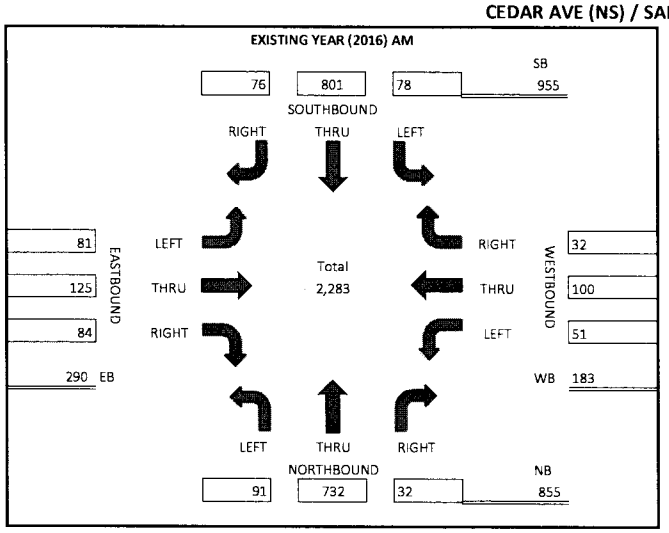


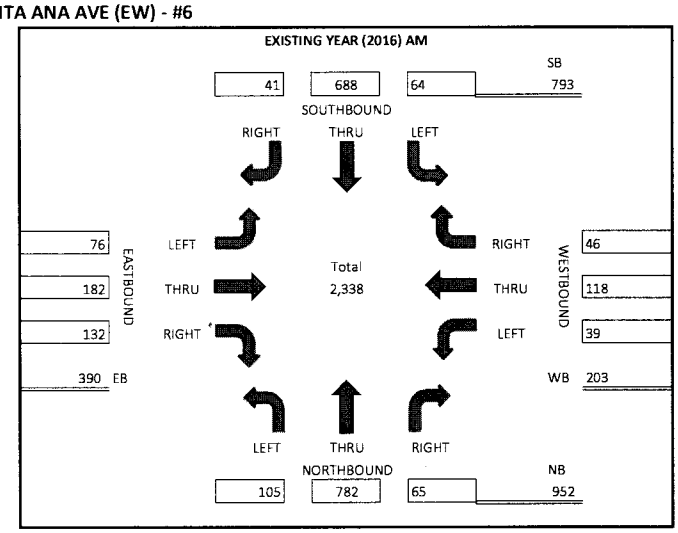
CEDAR AVE (NS) / SLOVER AVE (EW) - #5



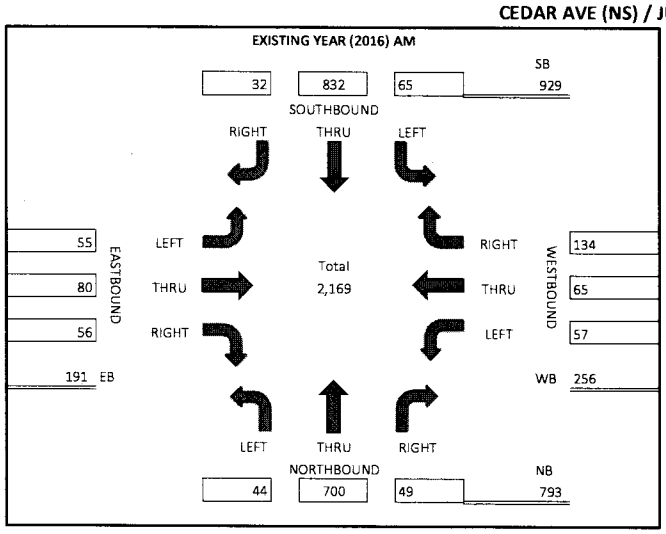


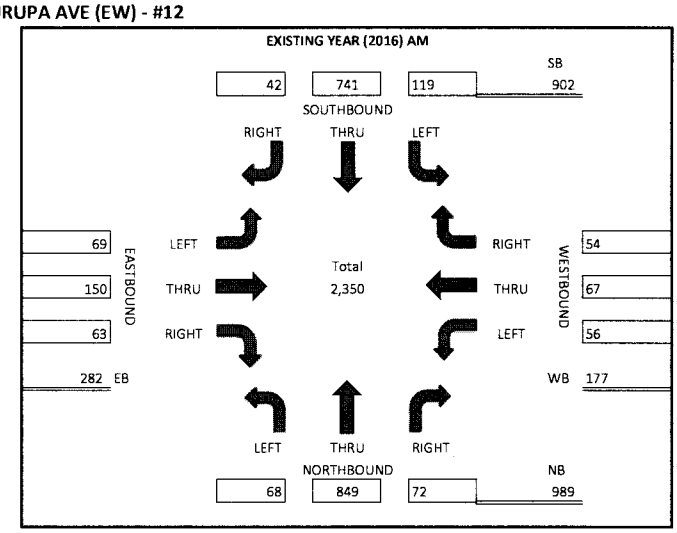
CEDAR AVE (NS) / SANTA ANA AVE (EW) - #6





CEDAR AVE (NS) / JURUPA AVE (EW) - #12





APPENDIX D

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns

11. Pedestrian activity

12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length

2. Amount of red time faced by a lane group

3. Amount of yellow time for that lane group

4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level Of Service	Description	Average Total Delay Per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.509
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 0 Level Of Service: B

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	9	191	11	62	146	55	14	60	10	5	53	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	191	11	62	146	55	14	60	10	5	53	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	13	272	16	88	208	78	20	86	14	7	76	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	272	16	88	208	78	20	86	14	7	76	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	272	16	88	208	78	20	86	14	7	76	103
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.91	0.05	0.30	0.70	1.00	0.19	0.81	1.00	0.09	0.91	1.00
Final Sat.:	25	535	31	176	413	681	94	402	556	44	468	572
Capacity Analysis Module:												
Vol/Sat:	0.51	0.51	0.51	0.50	0.50	0.12	0.21	0.21	0.03	0.16	0.16	0.18
Crit Moves:		****			****			****				****
Delay/Veh:	14.5	14.5	14.5	14.2	14.2	8.4	11.0	11.0	8.7	10.4	10.4	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.5	14.5	14.5	14.2	14.2	8.4	11.0	11.0	8.7	10.4	10.4	9.6
LOS by Move:	B	B	B	B	B	A	B	B	A	B	B	A
ApproachDel:		14.5			13.0			10.7			10.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.5			13.0			10.7			10.0	
LOS by Appr:		B			B			B			A	
AllWayAvgQ:	0.9	0.9	0.9	0.9	0.9	0.1	0.2	0.2	0.0	0.2	0.2	0.2

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.315
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.6
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	16	55	11	52	56	10	25	170	32	15	105	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	55	11	52	56	10	25	170	32	15	105	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	17	58	12	55	59	11	26	180	34	16	111	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	58	12	55	59	11	26	180	34	16	111	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	58	12	55	59	11	26	180	34	16	111	41
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.67	0.13	0.48	0.52	1.00	0.13	0.87	1.00	0.12	0.88	1.00
Final Sat.:	117	402	80	280	302	684	84	572	758	80	562	742
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.02	0.32	0.32	0.04	0.20	0.20	0.06
Crit Moves:			****		****			****		****		
Delay/Veh:	9.6	9.6	9.6	9.9	9.9	7.7	10.4	10.4	7.5	9.4	9.4	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.6	9.6	9.6	9.9	9.9	7.7	10.4	10.4	7.5	9.4	9.4	7.6
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:		9.6			9.7			10.0			8.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.6			9.7			10.0			8.9	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.0	0.4	0.4	0.0	0.2	0.2	0.1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[11.0]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	0	21	0	0	0	0	163	18	3	128	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	47	0	28	0	0	0	0	214	24	4	168	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	0	28	0	0	0	0	214	24	4	168	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	402	402	226	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	238	xxxx	xxxxx
Potent Cap.:	608	540	818	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1341	xxxx	xxxxx
Move Cap.:	607	538	818	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1341	xxxx	xxxxx
Volume/Cap:	0.08	0.00	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	671	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.0		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B			*			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[10.7]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	0	27	0	0	0	0	245	8	6	155	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	0	0	0	0	270	9	7	171	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	0	0	0	0	270	9	7	171	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	459	459	275	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	279	xxxx	xxxxx
Potent Cap.:	564	502	769	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1295	xxxx	xxxxx
Move Cap.:	562	499	769	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1295	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	680	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		10.7		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B		*			*			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 65 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 35.3
Optimal Cycle: OPTIMIZED Level Of Service: D

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	1243	0	0	1300	830	0	0	0	312	7	434
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	300	1307	0	0	1367	873	0	0	0	328	7	456
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	1307	0	0	1367	873	0	0	0	328	7	456
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	1307	0	0	1367	873	0	0	0	328	7	456
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.60	0.01	1.39
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1013	23	2505
Capacity Analysis Module:												
Vol/Sat:	0.18	0.36	0.00	0.00	0.25	0.48	0.00	0.00	0.00	0.32	0.32	0.18
Crit Moves:	****					****					****	
Green/Cycle:	0.16	0.61	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.30	0.30	0.30
Volume/Cap:	1.09	0.60	0.00	0.00	0.57	1.09	0.00	0.00	0.00	1.09	1.09	0.61
Delay/Veh:	106.0	8.2	0.0	0.0	13.6	75.4	0.0	0.0	0.0	81.6	81.6	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.0	8.2	0.0	0.0	13.6	75.4	0.0	0.0	0.0	81.6	81.6	20.4
LOS by Move:	F	A	A	A	B	E	A	A	A	F	F	C
HCM2kAvgQ:	14	9	0	0	7	31	0	0	0	22	22	7

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 60 Critical Vol./Cap.(X): 0.898
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: OPTIMIZED Level Of Service: B

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1281	0	0	1208	600	0	0	0	264	7	556
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	225	1337	0	0	1261	626	0	0	0	276	7	580
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	1337	0	0	1261	626	0	0	0	276	7	580
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	1337	0	0	1261	626	0	0	0	276	7	580
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.50	0.01	1.49
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	842	22	2686
Capacity Analysis Module:												
Vol/Sat:	0.13	0.37	0.00	0.00	0.23	0.35	0.00	0.00	0.00	0.33	0.33	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.17	0.54	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.36	0.36	0.36
Volume/Cap:	0.80	0.68	0.00	0.00	0.62	0.92	0.00	0.00	0.00	0.92	0.92	0.61
Delay/Veh:	38.4	10.9	0.0	0.0	15.7	35.7	0.0	0.0	0.0	32.5	32.5	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	10.9	0.0	0.0	15.7	35.7	0.0	0.0	0.0	32.5	32.5	16.7
LOS by Move:	D	B	A	A	B	D	A	A	A	C	C	B
HCM2kAvgQ:	7	10	0	0	7	16	0	0	0	15	15	7

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 70 Critical Vol./Cap.(X): 0.977
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 32.2
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0 1		1 0 2	0 0		1 0 1!	0 0		0 0 0	0 0	
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1063	358	484	1180	0	519	3	350	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1143	385	520	1269	0	558	3	376	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1143	385	520	1269	0	558	3	376	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1143	385	520	1269	0	558	3	376	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.44	0.01	0.55	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2444	9	1004	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.31	0.35	0.00	0.23	0.38	0.38	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.27	0.27	0.29	0.56	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Volume/Cap:	0.00	0.78	0.79	1.06	0.63	0.00	0.65	1.06	1.06	0.00	0.00	0.00
Delay/Veh:	0.0	26.3	32.0	82.2	11.1	0.0	19.9	69.9	69.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.3	32.0	82.2	11.1	0.0	19.9	69.9	69.9	0.0	0.0	0.0
LOS by Move:	A	C	C	F	B	A	B	E	E	A	A	A
HCM2kAvgQ:	0	10	10	21	10	0	8	25	25	0	0	0

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 65 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0 1		1 0 2	0 0		1 0 1!	0 0		0 0 0	0 0	
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	881	384	396	1037	0	696	7	198	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	909	396	409	1070	0	718	7	204	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	909	396	409	1070	0	718	7	204	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	909	396	409	1070	0	718	7	204	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.64	0.01	0.35	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2792	22	621	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.22	0.24	0.30	0.00	0.26	0.33	0.33	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.29	0.29	0.26	0.55	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.58	0.75	0.92	0.54	0.00	0.72	0.92	0.92	0.00	0.00	0.00
Delay/Veh:	0.0	20.1	27.0	48.7	9.6	0.0	20.2	33.9	33.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.1	27.0	48.7	9.6	0.0	20.2	33.9	33.9	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	C	C	A	A	A
HCM2kAvgQ:	0	6	9	13	7	0	10	16	16	0	0	0

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 105 Critical Vol./Cap.(X): 0.567
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 32.5
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	75	787	19	76	861	71	165	76	50	24	124	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	787	19	76	861	71	165	76	50	24	124	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	84	879	21	85	962	79	184	85	56	27	139	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	879	21	85	962	79	184	85	56	27	139	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	879	21	85	962	79	184	85	56	27	139	98
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.85	0.15	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	1700	3515	85	1700	3326	274	1700	1086	714	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.25	0.25	0.05	0.29	0.29	0.11	0.08	0.08	0.02	0.08	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.35	0.35	0.13	0.39	0.39	0.15	0.33	0.33	0.11	0.30	0.43
Volume/Cap:	0.52	0.71	0.71	0.37	0.75	0.75	0.75	0.23	0.23	0.15	0.26	0.13
Delay/Veh:	48.1	31.6	31.6	42.6	29.9	29.9	54.7	25.5	25.5	42.9	28.5	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.1	31.6	31.6	42.6	29.9	29.9	54.7	25.5	25.5	42.9	28.5	18.2
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	B
HCM2kAvgQ:	3	14	14	3	16	16	8	3	3	1	3	2

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 85 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 29.1
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 0	1 0		1 0 1	0 1	
Volume Module:												
Base Vol:	98	623	87	84	732	80	127	381	53	19	134	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	623	87	84	732	80	127	381	53	19	134	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	104	661	92	89	776	85	135	404	56	20	142	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	661	92	89	776	85	135	404	56	20	142	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	661	92	89	776	85	135	404	56	20	142	74
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.80	0.20	1.00	0.88	0.12	1.00	1.00	1.00
Final Sat.:	1700	3159	441	1700	3245	355	1700	1580	220	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.21	0.05	0.24	0.24	0.08	0.26	0.26	0.01	0.08	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.12	0.31	0.31	0.12	0.31	0.31	0.12	0.36	0.36	0.12	0.36	0.48
Volume/Cap:	0.52	0.68	0.68	0.45	0.78	0.78	0.67	0.70	0.70	0.10	0.22	0.09
Delay/Veh:	37.7	27.7	27.7	36.5	30.6	30.6	44.6	26.4	26.4	33.7	18.8	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.7	27.7	27.7	36.5	30.6	30.6	44.6	26.4	26.4	33.7	18.8	11.9
LOS by Move:	D	C	C	D	C	C	D	C	C	C	B	B
HCM2kAvgQ:	3	10	10	3	12	12	5	11	11	1	3	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 90 Critical Vol./Cap.(X): 0.590
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	91	732	32	78	801	76	81	125	84	51	100	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	106	854	37	91	935	89	95	146	98	60	117	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	854	37	91	935	89	95	146	98	60	117	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	854	37	91	935	89	95	146	98	60	117	37
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.83	0.17	0.29	0.43	0.28	0.35	0.65	1.00
Final Sat.:	1700	3449	151	1700	3288	312	495	763	513	596	1169	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.25	0.05	0.28	0.28	0.19	0.19	0.19	0.10	0.10	0.02
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.39	0.39	0.18	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.56	0.63	0.63	0.31	0.62	0.62	0.55	0.55	0.55	0.29	0.29	0.06
Delay/Veh:	41.8	23.1	23.1	32.9	19.4	19.4	25.0	25.0	25.0	21.7	21.7	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	23.1	23.1	32.9	19.4	19.4	25.0	25.0	25.0	21.7	21.7	19.8
LOS by Move:	D	C	C	C	B	B	C	C	C	C	C	B
HCM2kAvgQ:	4	11	11	3	11	11	8	8	8	4	4	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

****

Cycle (sec): 80 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	782	65	64	688	41	76	182	132	39	118	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	110	816	68	67	718	43	79	190	138	41	123	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	816	68	67	718	43	79	190	138	41	123	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	816	68	67	718	43	79	190	138	41	123	48
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.20	0.47	0.33	0.26	0.74	1.00
Final Sat.:	1700	3324	276	1700	3398	202	347	830	602	441	1333	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.25	0.04	0.21	0.21	0.23	0.23	0.23	0.09	0.09	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.39	0.39	0.13	0.34	0.34	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.36	0.63	0.63	0.31	0.63	0.63	0.59	0.59	0.59	0.24	0.24	0.07
Delay/Veh:	29.7	20.9	20.9	32.7	23.5	23.5	20.8	20.8	20.8	16.7	16.7	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.7	20.9	20.9	32.7	23.5	23.5	20.8	20.8	20.8	16.7	16.7	15.5
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	10	10	2	9	9	9	9	9	3	3	1

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

Cycle (sec): 95 Critical Vol./Cap.(X): 0.451
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	44	700	49	65	832	32	55	80	56	57	65	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	700	49	65	832	32	55	80	56	57	65	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	54	863	60	80	1026	39	68	99	69	70	80	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	863	60	80	1026	39	68	99	69	70	80	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	863	60	80	1026	39	68	99	69	70	80	165
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.87	0.13	1.00	1.93	0.07	0.42	0.58	1.00	0.48	0.52	1.00
Final Sat.:	1700	3364	236	1700	3467	133	716	1042	1800	818	933	1800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.26	0.05	0.30	0.30	0.09	0.09	0.04	0.09	0.09	0.09
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.43	0.43	0.18	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.30	0.59	0.59	0.27	0.59	0.59	0.29	0.29	0.12	0.26	0.26	0.28
Delay/Veh:	40.2	21.2	21.2	34.2	17.0	17.0	24.1	24.1	22.5	23.8	23.8	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.2	21.2	21.2	34.2	17.0	17.0	24.1	24.1	22.5	23.8	23.8	24.0
LOS by Move:	D	C	C	C	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	11	11	2	11	11	4	4	1	3	3	4

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

****

Cycle (sec): 85 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	68	849	72	119	741	42	69	150	63	56	67	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	849	72	119	741	42	69	150	63	56	67	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	74	918	78	129	801	45	75	162	68	61	72	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	918	78	129	801	45	75	162	68	61	72	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	918	78	129	801	45	75	162	68	61	72	58
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.89	0.11	0.33	0.67	1.00	0.47	0.53	1.00
Final Sat.:	1700	3319	281	1700	3407	193	557	1210	1800	798	955	1800
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.28	0.08	0.24	0.24	0.13	0.13	0.04	0.08	0.08	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.19	0.44	0.44	0.12	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	0.23	0.62	0.62	0.62	0.62	0.62	0.37	0.37	0.10	0.21	0.21	0.09
Delay/Veh:	29.6	19.0	19.0	41.3	22.5	22.5	20.2	20.2	17.9	18.7	18.7	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.6	19.0	19.0	41.3	22.5	22.5	20.2	20.2	17.9	18.7	18.7	17.8
LOS by Move:	C	B	B	D	C	C	C	C	B	B	B	B
HCM2kAvgQ:	2	11	11	5	10	10	5	5	1	2	2	1

****

Note: Queue reported is the number of cars per lane.

****

Existing Plus Project

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.510
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	9	191	11	62	146	55	14	60	10	5	53	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	191	11	62	146	55	14	60	10	5	53	72
Added Vol:	0	0	0	2	0	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	191	11	64	146	55	14	60	10	5	53	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	13	272	16	91	208	78	20	86	14	7	76	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	272	16	91	208	78	20	86	14	7	76	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	272	16	91	208	78	20	86	14	7	76	104
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.91	0.05	0.30	0.70	1.00	0.19	0.81	1.00	0.09	0.91	1.00
Final Sat.:	25	534	31	179	409	680	94	401	554	44	467	571
Capacity Analysis Module:												
Vol/Sat:	0.51	0.51	0.51	0.51	0.51	0.12	0.21	0.21	0.03	0.16	0.16	0.18
Crit Moves:		****		****				****				****
Delay/Veh:	14.6	14.6	14.6	14.4	14.4	8.4	11.0	11.0	8.7	10.4	10.4	9.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.6	14.6	14.6	14.4	14.4	8.4	11.0	11.0	8.7	10.4	10.4	9.7
LOS by Move:	B	B	B	B	B	A	B	B	A	B	B	A
ApproachDel:		14.6			13.1			10.7			10.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.6			13.1			10.7			10.0	
LOS by Appr:		B			B			B			A	
AllWayAvgQ:	0.9	0.9	0.9	0.9	0.9	0.1	0.2	0.2	0.0	0.2	0.2	0.2

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.316
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 0 Level Of Service: A

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	16	55	11	52	56	10	25	170	32	15	105	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	55	11	52	56	10	25	170	32	15	105	39
Added Vol:	0	0	0	1	0	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	55	11	53	56	10	25	170	32	15	105	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	17	58	12	56	59	11	26	180	34	16	111	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	58	12	56	59	11	26	180	34	16	111	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	58	12	56	59	11	26	180	34	16	111	43
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.67	0.13	0.49	0.51	1.00	0.13	0.87	1.00	0.12	0.88	1.00
Final Sat.:	117	401	80	283	299	683	84	570	757	80	562	742
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.02	0.32	0.32	0.04	0.20	0.20	0.06
Crit Moves:			****	****				****		****		
Delay/Veh:	9.6	9.6	9.6	9.9	9.9	7.7	10.4	10.4	7.5	9.4	9.4	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.6	9.6	9.6	9.9	9.9	7.7	10.4	10.4	7.5	9.4	9.4	7.6
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:	9.6			9.7			10.0			8.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.6			9.7			10.0			8.9		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.0	0.4	0.4	0.0	0.2	0.2	0.1

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.6]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	0	21	0	0	0	0	163	18	3	128	0
Added Vol:	0	0	0	6	0	1	2	-2	0	0	-1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	0	21	6	0	1	2	161	18	3	127	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	47	0	28	8	0	1	3	212	24	4	167	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	0	28	8	0	1	3	212	24	4	167	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	411	417	223	424	422	173	180	xxxx	xxxxx	235	xxxx	xxxxx
Potent Cap.:	555	530	821	544	526	875	1408	xxxx	xxxxx	1344	xxxx	xxxxx
Move Cap.:	552	527	821	524	524	875	1408	xxxx	xxxxx	1344	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	628	xxxxx	xxxx	556	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.5	xxxxx	xxxxx	11.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.5			11.6			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.4]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	0	27	0	0	0	0	245	8	6	155	0
Added Vol:	0	0	0	15	0	2	1	-1	0	0	-2	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	27	15	0	2	1	244	8	6	153	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	269	9	7	169	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	269	9	7	169	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	461	463	273	475	465	171	174	xxxx	xxxxx	278	xxxx	xxxxx
Potent Cap.:	514	499	770	503	498	877	1415	xxxx	xxxxx	1297	xxxx	xxxxx
Move Cap.:	510	496	770	482	495	877	1415	xxxx	xxxxx	1297	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.03	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	652	xxxxx	xxxx	509	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.9	xxxxx	xxxxx	12.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		10.9			12.4			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.6]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	0	21	0	0	0	0	163	18	3	128	0
Added Vol:	0	0	0	6	0	1	2	-2	0	0	-1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	0	21	6	0	1	2	161	18	3	127	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	47	0	28	8	0	1	3	212	24	4	167	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	0	28	8	0	1	3	212	24	4	167	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	411	417	223	424	422	173	180	xxxx	xxxxx	235	xxxx	xxxxx
Potent Cap.:	555	530	821	544	526	875	1408	xxxx	xxxxx	1344	xxxx	xxxxx
Move Cap.:	552	527	821	524	524	875	1408	xxxx	xxxxx	1344	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	628	xxxxx	xxxx	556	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.5	xxxxx	xxxxx	11.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.5			11.6		xxxxxx			xxxxxx		
ApproachLOS:		B			B		*			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.4]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	0	27	0	0	0	0	245	8	6	155	0
Added Vol:	0	0	0	15	0	2	1	-1	0	0	-2	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	27	15	0	2	1	244	8	6	153	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	269	9	7	169	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	269	9	7	169	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	461	463	273	475	465	171	174	xxxx	xxxxx	278	xxxx	xxxxx
Potent Cap.:	514	499	770	503	498	877	1415	xxxx	xxxxx	1297	xxxx	xxxxx
Move Cap.:	510	496	770	482	495	877	1415	xxxx	xxxxx	1297	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.03	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	652	xxxxx	xxxx	509	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.9	xxxxx	xxxxx	12.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		10.9			12.4			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 65 Critical Vol./Cap.(X): 1.102
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 37.7
Optimal Cycle: OPTIMIZED Level Of Service: D

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	1243	0	0	1300	830	0	0	0	312	7	434
Added Vol:	6	1	0	0	4	0	0	0	0	19	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	291	1244	0	0	1304	830	0	0	0	331	7	434
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	306	1308	0	0	1371	873	0	0	0	348	7	456
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	1308	0	0	1371	873	0	0	0	348	7	456
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	1308	0	0	1371	873	0	0	0	348	7	456
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.61	0.01	1.38
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1037	22	2480
Capacity Analysis Module:												
Vol/Sat:	0.18	0.36	0.00	0.00	0.25	0.48	0.00	0.00	0.00	0.34	0.34	0.18
Crit Moves:	****					****					****	
Green/Cycle:	0.16	0.60	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.30	0.30	0.30
Volume/Cap:	1.10	0.60	0.00	0.00	0.58	1.10	0.00	0.00	0.00	1.10	1.10	0.60
Delay/Veh:	111.4	8.5	0.0	0.0	14.0	81.9	0.0	0.0	0.0	87.3	87.3	20.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	111.4	8.5	0.0	0.0	14.0	81.9	0.0	0.0	0.0	87.3	87.3	20.1
LOS by Move:	F	A	A	A	B	F	A	A	A	F	F	C
HCM2kAvgQ:	14	9	0	0	8	32	0	0	0	24	24	7

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1281	0	0	1208	600	0	0	0	264	7	556
Added Vol:	18	4	0	0	1	0	0	0	0	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	1285	0	0	1209	600	0	0	0	271	7	556
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	244	1341	0	0	1262	626	0	0	0	283	7	580
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	1341	0	0	1262	626	0	0	0	283	7	580
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	244	1341	0	0	1262	626	0	0	0	283	7	580
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.50	0.01	1.49
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	853	22	2675
Capacity Analysis Module:												
Vol/Sat:	0.14	0.37	0.00	0.00	0.23	0.35	0.00	0.00	0.00	0.33	0.33	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.17	0.54	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.36	0.36	0.36
Volume/Cap:	0.86	0.69	0.00	0.00	0.62	0.93	0.00	0.00	0.00	0.93	0.93	0.61
Delay/Veh:	47.0	11.1	0.0	0.0	15.9	36.9	0.0	0.0	0.0	33.3	33.3	16.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	11.1	0.0	0.0	15.9	36.9	0.0	0.0	0.0	33.3	33.3	16.5
LOS by Move:	D	B	A	A	B	D	A	A	A	C	C	B
HCM2kAvgQ:	8	10	0	0	7	16	0	0	0	16	16	7

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec):	60	Critical Vol./Cap.(X):	0.971
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	22.7
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2	0 0		0 0 3	0 1		0 0 0	0 0		0 1 0	0 2	
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	1243	0	0	1300	830	0	0	0	312	7	434
Added Vol:	6	1	0	0	4	0	0	0	0	19	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	291	1244	0	0	1304	830	0	0	0	331	7	434
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	306	1308	0	0	1371	873	0	0	0	348	7	456
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	1308	0	0	1371	873	0	0	0	348	7	456
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	1308	0	0	1371	873	0	0	0	348	7	456
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1667	35	3600
Capacity Analysis Module:												
Vol/Sat:	0.18	0.36	0.00	0.00	0.25	0.48	0.00	0.00	0.00	0.21	0.21	0.13
Crit Moves:	****					****					****	
Green/Cycle:	0.19	0.68	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.22	0.22	0.22
Volume/Cap:	0.97	0.53	0.00	0.00	0.51	0.97	0.00	0.00	0.00	0.97	0.97	0.59
Delay/Veh:	66.9	4.9	0.0	0.0	10.2	37.6	0.0	0.0	0.0	62.5	62.5	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.9	4.9	0.0	0.0	10.2	37.6	0.0	0.0	0.0	62.5	62.5	22.4
LOS by Move:	E	A	A	A	B	D	A	A	A	E	E	C
HCM2kAvgQ:	11	7	0	0	6	23	0	0	0	12	12	5

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 60 Critical Vol./Cap.(X): 0.736
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: OPTIMIZED Level Of Service: B

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 1	0 0	2
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1281	0	0	1208	600	0	0	0	264	7	556
Added Vol:	18	4	0	0	1	0	0	0	0	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	234	1285	0	0	1209	600	0	0	0	271	7	556
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	244	1341	0	0	1262	626	0	0	0	283	7	580
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	1341	0	0	1262	626	0	0	0	283	7	580
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	244	1341	0	0	1262	626	0	0	0	283	7	580
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1660	43	3600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.37	0.00	0.00	0.23	0.35	0.00	0.00	0.00	0.17	0.17	0.16
Crit Moves:	****					****					****	
Green/Cycle:	0.20	0.67	0.00	0.00	0.47	0.47	0.00	0.00	0.00	0.23	0.23	0.23
Volume/Cap:	0.74	0.56	0.00	0.00	0.49	0.74	0.00	0.00	0.00	0.74	0.74	0.70
Delay/Veh:	31.0	5.6	0.0	0.0	11.0	16.2	0.0	0.0	0.0	28.4	28.4	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.0	5.6	0.0	0.0	11.0	16.2	0.0	0.0	0.0	28.4	28.4	23.7
LOS by Move:	C	A	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	6	7	0	0	6	11	0	0	0	7	7	6

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 70 Critical Vol./Cap.(X): 0.990
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 33.7
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	1 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1063	358	484	1180	0	519	3	350	0	0	0
Added Vol:	0	7	6	0	23	0	0	0	19	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1070	364	484	1203	0	519	3	369	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1151	391	520	1294	0	558	3	397	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1151	391	520	1294	0	558	3	397	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1151	391	520	1294	0	558	3	397	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.42	0.01	0.57	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2422	8	1027	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.22	0.31	0.36	0.00	0.23	0.39	0.39	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.27	0.27	0.28	0.56	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.78	0.80	1.08	0.65	0.00	0.64	1.08	1.08	0.00	0.00	0.00
Delay/Veh:	0.0	26.5	32.9	88.3	11.5	0.0	19.7	75.6	75.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.5	32.9	88.3	11.5	0.0	19.7	75.6	75.6	0.0	0.0	0.0
LOS by Move:	A	C	C	F	B	A	B	E	E	A	A	A
HCM2kAvgQ:	0	10	10	22	10	0	8	26	26	0	0	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec): 65 Critical Vol./Cap.(X): 0.822
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 22.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	1 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	881	384	396	1037	0	696	7	198	0	0	0
Added Vol:	0	22	18	0	9	0	0	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	903	402	396	1046	0	696	7	205	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	932	415	409	1079	0	718	7	212	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	932	415	409	1079	0	718	7	212	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	932	415	409	1079	0	718	7	212	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.64	0.01	0.35	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2779	22	636	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.23	0.24	0.30	0.00	0.26	0.33	0.33	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.29	0.29	0.26	0.55	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.59	0.79	0.93	0.54	0.00	0.72	0.93	0.93	0.00	0.00	0.00
Delay/Veh:	0.0	20.3	29.0	50.2	9.7	0.0	20.2	34.8	34.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.3	29.0	50.2	9.7	0.0	20.2	34.8	34.8	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	C	C	A	A	A
HCM2kAvgQ:	0	6	10	13	7	0	10	17	17	0	0	0

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

****

Cycle (sec): 105 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 32.8
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	75	787	19	76	861	71	165	76	50	24	124	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	787	19	76	861	71	165	76	50	24	124	88
Added Vol:	1	14	0	0	42	0	0	0	2	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	801	19	76	903	71	165	76	52	26	124	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	85	895	21	85	1009	79	184	85	58	29	139	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	895	21	85	1009	79	184	85	58	29	139	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	895	21	85	1009	79	184	85	58	29	139	98
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.85	0.15	1.00	0.59	0.41	1.00	1.00	1.00
Final Sat.:	1700	3517	83	1700	3338	262	1700	1069	731	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.25	0.25	0.05	0.30	0.30	0.11	0.08	0.08	0.02	0.08	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.35	0.35	0.13	0.39	0.39	0.14	0.33	0.33	0.11	0.30	0.43
Volume/Cap:	0.52	0.72	0.72	0.38	0.77	0.77	0.77	0.24	0.24	0.16	0.26	0.13
Delay/Veh:	48.4	31.3	31.3	42.6	30.4	30.4	57.6	25.8	25.8	43.1	28.5	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.4	31.3	31.3	42.6	30.4	30.4	57.6	25.8	25.8	43.1	28.5	18.2
LOS by Move:	D	C	C	D	C	C	E	C	C	D	C	B
HCM2kAvgQ:	4	14	14	3	17	17	8	3	3	1	3	2

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 85 Critical Vol./Cap.(X): 0.635
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 29.6
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 0	1 0		1 0 1	0 1	
Volume Module:												
Base Vol:	98	623	87	84	732	80	127	381	53	19	134	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	623	87	84	732	80	127	381	53	19	134	70
Added Vol:	2	41	2	0	16	0	0	0	1	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	664	89	84	748	80	127	381	54	20	134	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	106	704	94	89	793	85	135	404	57	21	142	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	704	94	89	793	85	135	404	57	21	142	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	704	94	89	793	85	135	404	57	21	142	74
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.81	0.19	1.00	0.88	0.12	1.00	1.00	1.00
Final Sat.:	1700	3175	425	1700	3252	348	1700	1577	223	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.22	0.22	0.05	0.24	0.24	0.08	0.26	0.26	0.01	0.08	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.12	0.31	0.31	0.12	0.31	0.31	0.12	0.36	0.36	0.12	0.36	0.48
Volume/Cap:	0.53	0.73	0.73	0.45	0.80	0.80	0.67	0.70	0.70	0.11	0.22	0.09
Delay/Veh:	38.0	28.7	28.7	36.5	31.2	31.2	44.6	26.5	26.5	33.7	18.8	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	28.7	28.7	36.5	31.2	31.2	44.6	26.5	26.5	33.7	18.8	11.9
LOS by Move:	D	C	C	D	C	C	D	C	C	C	B	B
HCM2kAvgQ:	4	11	11	3	13	13	5	11	11	1	3	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

****

Cycle (sec): 90 Critical Vol./Cap.(X): 0.607
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	91	732	32	78	801	76	81	125	84	51	100	32
Added Vol:	0	15	0	0	46	0	0	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	747	32	78	847	76	81	125	84	53	100	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	106	872	37	91	988	89	95	146	98	62	117	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	872	37	91	988	89	95	146	98	62	117	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	872	37	91	988	89	95	146	98	62	117	37
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.84	0.16	0.29	0.43	0.28	0.36	0.64	1.00
Final Sat.:	1700	3452	148	1700	3304	296	495	763	513	611	1153	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.25	0.05	0.30	0.30	0.19	0.19	0.19	0.10	0.10	0.02
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.39	0.39	0.17	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.56	0.64	0.64	0.31	0.66	0.66	0.55	0.55	0.55	0.29	0.29	0.06
Delay/Veh:	41.8	23.2	23.2	33.1	20.0	20.0	25.0	25.0	25.0	21.8	21.8	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	23.2	23.2	33.1	20.0	20.0	25.0	25.0	25.0	21.8	21.8	19.8
LOS by Move:	D	C	C	C	C	C	C	C	C	C	C	B
HCM2kAvgQ:	4	11	11	3	12	12	8	8	8	4	4	1

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 80 Critical Vol./Cap.(X): 0.586
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 22.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1 0	0 1	
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	782	65	64	688	41	76	182	132	39	118	46
Added Vol:	0	45	2	0	18	0	0	0	0	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	827	67	64	706	41	76	182	132	40	118	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	110	863	70	67	737	43	79	190	138	42	123	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	863	70	67	737	43	79	190	138	42	123	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	863	70	67	737	43	79	190	138	42	123	48
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.20	0.47	0.33	0.26	0.74	1.00
Final Sat.:	1700	3330	270	1700	3402	198	347	830	602	449	1325	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.26	0.04	0.22	0.22	0.23	0.23	0.23	0.09	0.09	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.39	0.39	0.13	0.34	0.34	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.36	0.67	0.67	0.31	0.65	0.65	0.59	0.59	0.59	0.24	0.24	0.07
Delay/Veh:	29.7	21.5	21.5	32.7	23.7	23.7	20.8	20.8	20.8	16.7	16.7	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.7	21.5	21.5	32.7	23.7	23.7	20.8	20.8	20.8	16.7	16.7	15.5
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	10	10	2	9	9	9	9	9	3	3	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[17.6]

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	889	0	0	929	0	0	0	0	0	0	0
Added Vol:	9	6	0	0	28	21	14	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	895	0	0	957	21	14	0	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	942	0	0	1007	22	15	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	942	0	0	1007	22	15	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1029	xxxx	xxxxx	xxxx	xxxx	xxxxx	1508	xxxx	515	xxxx	xxxx	xxxxx
Potent Cap.:	683	xxxx	xxxxx	xxxx	xxxx	xxxxx	114	xxxx	510	xxxx	xxxx	xxxxx
Move Cap.:	683	xxxx	xxxxx	xxxx	xxxx	xxxxx	112	xxxx	510	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	276	225	xxxxx	240	220	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.8	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			17.6			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

****

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[18.0]

****

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	2 0	0	0 0	1 1	0	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	972	0	0	902	0	0	0	0	0	0	0
Added Vol:	4	15	0	0	13	10	34	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	987	0	0	915	10	34	0	7	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	4	1039	0	0	963	11	36	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	1039	0	0	963	11	36	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	974	xxxx	xxxxx	xxxx	xxxx	xxxxx	1496	xxxx	487	xxxx	xxxx	xxxxx
Potent Cap.:	716	xxxx	xxxxx	xxxx	xxxx	xxxxx	116	xxxx	532	xxxx	xxxx	xxxxx
Move Cap.:	716	xxxx	xxxxx	xxxx	xxxx	xxxxx	115	xxxx	532	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	288	221	xxxxx	219	219	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.3	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			18.0			xxxxxx		
ApproachLOS:	*			*			C			*		

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.0]

Street Name:	Cedar Avenue						Project Access #2					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	889	0	0	929	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	26	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	904	0	0	955	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	952	0	0	1005	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	952	0	0	1005	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	505	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	518	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	518	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.0			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.8]

Street Name:	Cedar Avenue						Project Access #2					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	972	0	0	902	0	0	0	0	0	0	0
Added Vol:	0	19	0	0	18	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	991	0	0	920	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1043	0	0	968	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1043	0	0	968	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	485	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.8	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.8			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

Street Name:	Cedar Avenue						Project Access #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	2 0	0	0 0	1 1	0	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	889	0	0	929	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	23	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	904	0	0	952	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	952	0	0	1002	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	952	0	0	1002	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	503	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	519	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	519	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.8]

****

Street Name:	Cedar Avenue						Project Access #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	972	0	0	902	0	0	0	0	0	0	0
Added Vol:	0	19	0	0	18	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	991	0	0	920	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1043	0	0	968	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1043	0	0	968	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	485	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.8	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.8			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

****

Street Name:	Cedar Avenue						Project Access #4					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	889	0	0	929	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	9	15	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	904	0	0	938	15	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	952	0	0	987	16	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	952	0	0	987	16	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	502	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	520	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	520	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.8]

Street Name:	Cedar Avenue						Project Access #4					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	972	0	0	902	0	0	0	0	0	0	0
Added Vol:	0	19	0	0	14	7	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	991	0	0	916	7	0	0	5	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1043	0	0	964	7	0	0	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1043	0	0	964	7	0	0	5	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	486	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	533	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.8	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.8			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

Street Name:	Cedar Avenue						Project Access #5					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	889	0	0	929	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	7	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	904	0	0	936	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	952	0	0	985	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	952	0	0	985	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	495	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Existing Plus Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.8]

****

Street Name:	Cedar Avenue								Project Access #5							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0 0	2 0	0		0 0	1 1	0		0 0	0 0	1		0 0	0 0	0	
Volume Module:																
Base Vol:	0	972	0		0	902	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	972	0		0	902	0		0	0	0		0	0	0	
Added Vol:	0	19	0		0	17	2		0	0	2		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	991	0		0	919	2		0	0	2		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	0	1043	0		0	967	2		0	0	2		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	1043	0		0	967	2		0	0	2		0	0	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	485		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	534		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	534		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	0.00		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	0.0		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	11.8		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	B		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				11.8				xxxxxx			
ApproachLOS:	*				*				B				*			

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

Cycle (sec):	95	Critical Vol./Cap.(X):	0.459
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	20.9
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 1 0	0 1		0 1 0	0 1	
Volume Module:												
Base Vol:	44	700	49	65	832	32	55	80	56	57	65	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	700	49	65	832	32	55	80	56	57	65	134
Added Vol:	3	9	0	2	5	0	6	-1	-1	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	709	49	67	837	32	61	79	55	57	71	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	58	874	60	83	1032	39	75	97	68	70	88	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	874	60	83	1032	39	75	97	68	70	88	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	874	60	83	1032	39	75	97	68	70	88	165
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.87	0.13	1.00	1.93	0.07	0.45	0.55	1.00	0.46	0.54	1.00
Final Sat.:	1700	3367	233	1700	3467	133	765	990	1800	781	973	1800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.26	0.05	0.30	0.30	0.10	0.10	0.04	0.09	0.09	0.09
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.43	0.43	0.18	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.32	0.60	0.60	0.28	0.59	0.59	0.30	0.30	0.12	0.28	0.28	0.28
Delay/Veh:	40.4	21.2	21.2	34.4	17.1	17.1	24.2	24.2	22.5	24.0	24.0	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.4	21.2	21.2	34.4	17.1	17.1	24.2	24.2	22.5	24.0	24.0	24.0
LOS by Move:	D	C	C	C	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	11	11	2	11	11	4	4	1	4	4	4

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

****

Cycle (sec): 85 Critical Vol./Cap.(X): 0.538
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 1 0	0 1		0 1 0	0 1	
Volume Module:												
Base Vol:	68	849	72	119	741	42	69	150	63	56	67	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	849	72	119	741	42	69	150	63	56	67	54
Added Vol:	1	4	0	6	12	0	15	-1	-1	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	853	72	125	753	42	84	149	62	56	69	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	75	922	78	135	814	45	91	161	67	61	75	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	922	78	135	814	45	91	161	67	61	75	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	922	78	135	814	45	91	161	67	61	75	58
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.89	0.11	0.37	0.63	1.00	0.46	0.54	1.00
Final Sat.:	1700	3320	280	1700	3410	190	635	1127	1800	786	968	1800
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.28	0.08	0.24	0.24	0.14	0.14	0.04	0.08	0.08	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.19	0.44	0.44	0.13	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	0.24	0.63	0.63	0.63	0.63	0.63	0.39	0.39	0.10	0.21	0.21	0.09
Delay/Veh:	29.8	19.4	19.4	41.3	22.5	22.5	20.4	20.4	17.9	18.8	18.8	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.8	19.4	19.4	41.3	22.5	22.5	20.4	20.4	17.9	18.8	18.8	17.8
LOS by Move:	C	B	B	D	C	C	C	C	B	B	B	B
HCM2kAvgQ:	2	11	11	5	10	10	5	5	1	3	3	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Opening Year (2018) With Ambient

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	9	191	11	62	146	55	14	60	10	5	53	72
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	9	195	11	63	149	56	14	61	10	5	54	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	195	11	63	149	56	14	61	10	5	54	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	13	278	16	90	212	80	20	87	15	7	77	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	278	16	90	212	80	20	87	15	7	77	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	278	16	90	212	80	20	87	15	7	77	105
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.91	0.05	0.30	0.70	1.00	0.19	0.81	1.00	0.09	0.91	1.00
Final Sat.:	25	532	31	175	411	676	93	398	551	44	464	567
Capacity Analysis Module:												
Vol/Sat:	0.52	0.52	0.52	0.52	0.52	0.12	0.22	0.22	0.03	0.17	0.17	0.18
Crit Moves:	****				****			****				****
Delay/Veh:	14.9	14.9	14.9	14.6	14.6	8.5	11.1	11.1	8.8	10.5	10.5	9.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.9	14.9	14.9	14.6	14.6	8.5	11.1	11.1	8.8	10.5	10.5	9.7
LOS by Move:	B	B	B	B	B	A	B	B	A	B	B	A
ApproachDel:	14.9			13.3			10.8			10.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.9			13.3			10.8			10.1		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	1.0	1.0	1.0	1.0	1.0	0.1	0.2	0.2	0.0	0.2	0.2	0.2

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.323
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.7
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	16	55	11	52	56	10	25	170	32	15	105	39
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	16	56	11	53	57	10	26	173	33	15	107	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	56	11	53	57	10	26	173	33	15	107	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	17	59	12	56	61	11	27	184	35	16	113	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	59	12	56	61	11	27	184	35	16	113	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	59	12	56	61	11	27	184	35	16	113	42
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.67	0.13	0.48	0.52	1.00	0.13	0.87	1.00	0.13	0.87	1.00
Final Sat.:	116	400	80	279	300	680	84	569	755	80	560	737
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.02	0.32	0.32	0.05	0.20	0.20	0.06
Crit Moves:		****			****		****				****	
Delay/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.4	9.4	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.4	9.4	7.6
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:		9.6			9.8			10.1			9.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.6			9.8			10.1			9.0	
LOS by Appr:		A			A			B			A	
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.0	0.4	0.4	0.0	0.2	0.2	0.1

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[11.1]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	0 1	0	0 1	0 0	0
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	37	0	21	0	0	0	0	166	18	3	131	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	21	0	0	0	0	166	18	3	131	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	48	0	28	0	0	0	0	218	24	4	172	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	48	0	28	0	0	0	0	218	24	4	172	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	410	410	231	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	243	xxxx	xxxxx
Potent Cap.:	602	534	814	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1336	xxxx	xxxxx
Move Cap.:	600	533	814	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1336	xxxx	xxxxx
Volume/Cap:	0.08	0.00	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	664	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.1		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B			*			*			*	

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[10.8]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	15	0	28	0	0	0	0	250	8	6	158	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	28	0	0	0	0	250	8	6	158	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	0	0	0	0	276	9	7	174	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	0	0	0	0	276	9	7	174	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	468	468	280	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	285	xxxx	xxxxx
Potent Cap.:	557	496	764	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1289	xxxx	xxxxx
Move Cap.:	555	493	764	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1289	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	673	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	10.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		10.8		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B			*			*			*	

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec):	65	Critical Vol./Cap.(X):	1.107
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	37.9
Optimal Cycle: OPTIMIZED		Level Of Service:	D

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	291	1268	0	0	1326	847	0	0	0	318	7	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	306	1333	0	0	1394	890	0	0	0	335	8	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	1333	0	0	1394	890	0	0	0	335	8	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	1333	0	0	1394	890	0	0	0	335	8	465
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.60	0.01	1.39
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1013	23	2505
Capacity Analysis Module:												
Vol/Sat:	0.18	0.37	0.00	0.00	0.26	0.49	0.00	0.00	0.00	0.33	0.33	0.19
Crit Moves:	****					****					****	
Green/Cycle:	0.16	0.61	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.30	0.30	0.30
Volume/Cap:	1.11	0.61	0.00	0.00	0.58	1.11	0.00	0.00	0.00	1.11	1.11	0.62
Delay/Veh:	113.1	8.4	0.0	0.0	13.8	83.2	0.0	0.0	0.0	89.4	89.4	20.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	113.1	8.4	0.0	0.0	13.8	83.2	0.0	0.0	0.0	89.4	89.4	20.6
LOS by Move:	F	A	A	A	B	F	A	A	A	F	F	C
HCM2kAvgQ:	14	9	0	0	8	33	0	0	0	24	24	7

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 60 Critical Vol./Cap.(X): 0.916
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	220	1307	0	0	1232	612	0	0	0	269	7	567
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	230	1364	0	0	1286	639	0	0	0	281	7	592
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	1364	0	0	1286	639	0	0	0	281	7	592
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	1364	0	0	1286	639	0	0	0	281	7	592
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.50	0.01	1.49
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	842	22	2686
Capacity Analysis Module:												
Vol/Sat:	0.14	0.38	0.00	0.00	0.24	0.35	0.00	0.00	0.00	0.33	0.33	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.17	0.54	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.36	0.36	0.36
Volume/Cap:	0.81	0.70	0.00	0.00	0.63	0.94	0.00	0.00	0.00	0.94	0.94	0.62
Delay/Veh:	40.2	11.1	0.0	0.0	15.9	38.9	0.0	0.0	0.0	35.4	35.4	16.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.2	11.1	0.0	0.0	15.9	38.9	0.0	0.0	0.0	35.4	35.4	16.8
LOS by Move:	D	B	A	A	B	D	A	A	A	D	D	B
HCM2kAvgQ:	7	10	0	0	7	17	0	0	0	16	16	7

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec):	60	Critical Vol./Cap.(X):	0.973
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	22.6
Optimal Cycle: OPTIMIZED		Level Of Service:	C

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2	0 0		0 0 3	0 1		0 0 0	0 0		0 1	0 0 2	
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	291	1268	0	0	1326	847	0	0	0	318	7	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	306	1333	0	0	1394	890	0	0	0	335	8	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	1333	0	0	1394	890	0	0	0	335	8	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	1333	0	0	1394	890	0	0	0	335	8	465
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1665	37	3600
Capacity Analysis Module:												
Vol/Sat:	0.18	0.37	0.00	0.00	0.26	0.49	0.00	0.00	0.00	0.20	0.20	0.13
Crit Moves:	****					****					****	
Green/Cycle:	0.18	0.69	0.00	0.00	0.51	0.51	0.00	0.00	0.00	0.21	0.21	0.21
Volume/Cap:	0.97	0.53	0.00	0.00	0.51	0.97	0.00	0.00	0.00	0.97	0.97	0.63
Delay/Veh:	67.5	4.7	0.0	0.0	9.9	37.5	0.0	0.0	0.0	64.2	64.2	23.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.5	4.7	0.0	0.0	9.9	37.5	0.0	0.0	0.0	64.2	64.2	23.4
LOS by Move:	E	A	A	A	A	D	A	A	A	E	E	C
HCM2kAvgQ:	11	7	0	0	6	24	0	0	0	12	12	5

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec):	60	Critical Vol./Cap.(X):	0.733
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	13.9
Optimal Cycle: OPTIMIZED		Level Of Service:	B

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2	0	0	0 0 3	0	1	0 0 0	0	0	0 1	0	0 2
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	220	1307	0	0	1232	612	0	0	0	269	7	567
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	230	1364	0	0	1286	639	0	0	0	281	7	592
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	1364	0	0	1286	639	0	0	0	281	7	592
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	1364	0	0	1286	639	0	0	0	281	7	592
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1658	44	3600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.38	0.00	0.00	0.24	0.35	0.00	0.00	0.00	0.17	0.17	0.16
Crit Moves:	****					****					****	
Green/Cycle:	0.18	0.67	0.00	0.00	0.48	0.48	0.00	0.00	0.00	0.23	0.23	0.23
Volume/Cap:	0.73	0.57	0.00	0.00	0.49	0.73	0.00	0.00	0.00	0.73	0.73	0.71
Delay/Veh:	31.7	5.6	0.0	0.0	10.6	15.6	0.0	0.0	0.0	28.3	28.3	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.7	5.6	0.0	0.0	10.6	15.6	0.0	0.0	0.0	28.3	28.3	24.1
LOS by Move:	C	A	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	6	7	0	0	6	11	0	0	0	7	7	7

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec): 70 Critical Vol./Cap.(X): 0.996
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 34.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	1 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	1084	365	494	1204	0	529	3	357	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1084	365	494	1204	0	529	3	357	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1166	393	531	1294	0	569	3	384	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1166	393	531	1294	0	569	3	384	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1166	393	531	1294	0	569	3	384	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.44	0.01	0.55	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2444	9	1004	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.31	0.36	0.00	0.23	0.38	0.38	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.27	0.27	0.29	0.56	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Volume/Cap:	0.00	0.80	0.80	1.08	0.64	0.00	0.66	1.08	1.08	0.00	0.00	0.00
Delay/Veh:	0.0	26.8	33.1	89.0	11.3	0.0	20.2	77.1	77.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.8	33.1	89.0	11.3	0.0	20.2	77.1	77.1	0.0	0.0	0.0
LOS by Move:	A	C	C	F	B	A	C	E	E	A	A	A
HCM2kAvgQ:	0	10	10	22	10	0	9	26	26	0	0	0

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec): 65 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	1 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	899	392	404	1058	0	710	7	202	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	899	392	404	1058	0	710	7	202	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	927	404	417	1092	0	733	7	208	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	927	404	417	1092	0	733	7	208	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	927	404	417	1092	0	733	7	208	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.64	0.01	0.35	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2792	22	621	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.22	0.25	0.30	0.00	0.26	0.34	0.34	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.29	0.29	0.26	0.55	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.59	0.77	0.94	0.55	0.00	0.74	0.94	0.94	0.00	0.00	0.00
Delay/Veh:	0.0	20.2	27.8	52.5	9.7	0.0	20.6	36.8	36.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.2	27.8	52.5	9.7	0.0	20.6	36.8	36.8	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	D	D	A	A	A
HCM2kAvgQ:	0	6	9	14	8	0	10	17	17	0	0	0

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 105 Critical Vol./Cap.(X): 0.579
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 32.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	75	787	19	76	861	71	165	76	50	24	124	88
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	77	803	19	78	878	72	168	78	51	24	126	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	803	19	78	878	72	168	78	51	24	126	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	85	897	22	87	981	81	188	87	57	27	141	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	897	22	87	981	81	188	87	57	27	141	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	897	22	87	981	81	188	87	57	27	141	100
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.85	0.15	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	1700	3515	85	1700	3326	274	1700	1086	714	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.26	0.05	0.30	0.30	0.11	0.08	0.08	0.02	0.08	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.35	0.35	0.13	0.39	0.39	0.15	0.33	0.33	0.11	0.30	0.43
Volume/Cap:	0.53	0.73	0.73	0.39	0.76	0.76	0.76	0.24	0.24	0.15	0.27	0.13
Delay/Veh:	48.5	31.7	31.7	42.9	30.4	30.4	56.0	25.6	25.6	42.9	28.6	18.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	31.7	31.7	42.9	30.4	30.4	56.0	25.6	25.6	42.9	28.6	18.4
LOS by Move:	D	C	C	D	C	C	E	C	C	D	C	B
HCM2kAvgQ:	4	14	14	3	16	16	8	3	3	1	4	2

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec):	85	Critical Vol./Cap.(X):	0.639
Loss Time (sec):	8 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.6
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 0	1 0		1 0 1	0 1	
Volume Module:												
Base Vol:	98	623	87	84	732	80	127	381	53	19	134	70
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	100	635	89	86	747	82	130	389	54	19	137	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	635	89	86	747	82	130	389	54	19	137	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	106	674	94	91	792	87	137	412	57	21	145	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	674	94	91	792	87	137	412	57	21	145	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	674	94	91	792	87	137	412	57	21	145	76
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.80	0.20	1.00	0.88	0.12	1.00	1.00	1.00
Final Sat.:	1700	3159	441	1700	3245	355	1700	1580	220	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.21	0.05	0.24	0.24	0.08	0.26	0.26	0.01	0.08	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.12	0.31	0.31	0.12	0.31	0.31	0.12	0.36	0.36	0.12	0.36	0.48
Volume/Cap:	0.53	0.70	0.70	0.45	0.80	0.80	0.69	0.72	0.72	0.10	0.22	0.09
Delay/Veh:	38.0	28.0	28.0	36.6	31.3	31.3	45.6	27.0	27.0	33.7	18.8	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	28.0	28.0	36.6	31.3	31.3	45.6	27.0	27.0	33.7	18.8	11.9
LOS by Move:	D	C	C	D	C	C	D	C	C	C	B	B
HCM2kAvgQ:	4	10	10	3	13	13	5	12	12	1	3	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 90 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1 0	0 1	
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	93	747	33	80	817	78	83	128	86	52	102	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	747	33	80	817	78	83	128	86	52	102	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	108	871	38	93	953	90	96	149	100	61	119	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	871	38	93	953	90	96	149	100	61	119	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	871	38	93	953	90	96	149	100	61	119	38
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.83	0.17	0.29	0.43	0.28	0.35	0.65	1.00
Final Sat.:	1700	3449	151	1700	3288	312	495	763	513	596	1169	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.25	0.05	0.29	0.29	0.19	0.19	0.19	0.10	0.10	0.02
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.39	0.39	0.17	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.57	0.64	0.64	0.32	0.64	0.64	0.57	0.57	0.57	0.30	0.30	0.06
Delay/Veh:	42.2	23.2	23.2	33.2	19.6	19.6	25.3	25.3	25.3	21.8	21.8	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	23.2	23.2	33.2	19.6	19.6	25.3	25.3	25.3	21.8	21.8	19.8
LOS by Move:	D	C	C	C	B	B	C	C	C	C	C	B
HCM2kAvgQ:	4	11	11	3	12	12	8	8	8	4	4	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 80 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1 0	0 1	
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	798	66	65	702	42	78	186	135	40	120	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	798	66	65	702	42	78	186	135	40	120	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	112	833	69	68	733	44	81	194	141	42	126	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	833	69	68	733	44	81	194	141	42	126	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	833	69	68	733	44	81	194	141	42	126	49
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.20	0.47	0.33	0.26	0.74	1.00
Final Sat.:	1700	3324	276	1700	3398	202	347	830	602	441	1333	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.25	0.25	0.04	0.22	0.22	0.23	0.23	0.23	0.09	0.09	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.39	0.39	0.13	0.34	0.34	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.37	0.65	0.65	0.32	0.64	0.64	0.60	0.60	0.60	0.24	0.24	0.07
Delay/Veh:	29.8	21.1	21.1	32.8	23.7	23.7	21.1	21.1	21.1	16.8	16.8	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.8	21.1	21.1	32.8	23.7	23.7	21.1	21.1	21.1	16.8	16.8	15.5
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	10	10	2	9	9	9	9	9	3	3	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

Cycle (sec): 95 Critical Vol./Cap.(X): 0.460
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	44	700	49	65	832	32	55	80	56	57	65	134
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	45	714	50	66	849	33	56	82	57	58	66	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	714	50	66	849	33	56	82	57	58	66	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	55	880	62	82	1046	40	69	101	70	72	82	169
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	880	62	82	1046	40	69	101	70	72	82	169
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	880	62	82	1046	40	69	101	70	72	82	169
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.87	0.13	1.00	1.93	0.07	0.42	0.58	1.00	0.48	0.52	1.00
Final Sat.:	1700	3364	236	1700	3467	133	716	1042	1800	818	933	1800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.26	0.26	0.05	0.30	0.30	0.10	0.10	0.04	0.09	0.09	0.09
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.44	0.44	0.18	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.31	0.60	0.60	0.27	0.60	0.60	0.30	0.30	0.12	0.27	0.27	0.29
Delay/Veh:	40.3	21.2	21.2	34.5	17.2	17.2	24.2	24.2	22.5	23.9	23.9	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	21.2	21.2	34.5	17.2	17.2	24.2	24.2	22.5	23.9	23.9	24.1
LOS by Move:	D	C	C	C	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	11	11	2	12	12	4	4	1	3	3	4

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

****

Cycle (sec): 85 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 1 0	0 1		0 1 0	0 1	
Volume Module:												
Base Vol:	68	849	72	119	741	42	69	150	63	56	67	54
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	69	866	73	121	756	43	70	153	64	57	68	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	866	73	121	756	43	70	153	64	57	68	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	75	936	79	131	817	46	76	165	69	62	74	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	936	79	131	817	46	76	165	69	62	74	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	936	79	131	817	46	76	165	69	62	74	60
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.89	0.11	0.33	0.67	1.00	0.47	0.53	1.00
Final Sat.:	1700	3319	281	1700	3407	193	557	1210	1800	798	955	1800
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.28	0.08	0.24	0.24	0.14	0.14	0.04	0.08	0.08	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.19	0.44	0.44	0.12	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	0.24	0.64	0.64	0.64	0.63	0.63	0.37	0.37	0.11	0.21	0.21	0.09
Delay/Veh:	29.9	19.2	19.2	42.0	22.6	22.6	20.2	20.2	17.9	18.8	18.8	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.9	19.2	19.2	42.0	22.6	22.6	20.2	20.2	17.9	18.8	18.8	17.8
LOS by Move:	C	B	B	D	C	C	C	C	B	B	B	B
HCM2kAvgQ:	2	11	11	5	10	10	5	5	1	3	3	1

****

Note: Queue reported is the number of cars per lane.

Opening Year (2018) With Ambient and Project

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.0
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	9	191	11	62	146	55	14	60	10	5	53	72
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	9	195	11	63	149	56	14	61	10	5	54	73
Added Vol:	0	0	0	2	0	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	195	11	65	149	56	14	61	10	5	54	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	13	278	16	93	212	80	20	87	15	7	77	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	278	16	93	212	80	20	87	15	7	77	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	278	16	93	212	80	20	87	15	7	77	106
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.91	0.05	0.30	0.70	1.00	0.19	0.81	1.00	0.09	0.91	1.00
Final Sat.:	25	531	31	178	407	675	93	398	549	44	463	567
Capacity Analysis Module:												
Vol/Sat:	0.52	0.52	0.52	0.52	0.52	0.12	0.22	0.22	0.03	0.17	0.17	0.19
Crit Moves:	****				****			****				****
Delay/Veh:	15.0	15.0	15.0	14.7	14.7	8.5	11.1	11.1	8.8	10.5	10.5	9.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	15.0	15.0	14.7	14.7	8.5	11.1	11.1	8.8	10.5	10.5	9.8
LOS by Move:	B	B	B	B	B	A	B	B	A	B	B	A
ApproachDel:		15.0			13.4			10.9			10.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.0			13.4			10.9			10.1	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	1.0	1.0	1.0	1.0	1.0	0.1	0.2	0.2	0.0	0.2	0.2	0.2

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.323
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.7
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	16	55	11	52	56	10	25	170	32	15	105	39
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	16	56	11	53	57	10	26	173	33	15	107	40
Added Vol:	0	0	0	1	0	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	56	11	54	57	10	26	173	33	15	107	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	17	59	12	57	61	11	27	184	35	16	113	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	59	12	57	61	11	27	184	35	16	113	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	59	12	57	61	11	27	184	35	16	113	44
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.67	0.13	0.49	0.51	1.00	0.13	0.87	1.00	0.13	0.87	1.00
Final Sat.:	116	398	80	281	297	680	84	568	754	80	560	737
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.02	0.32	0.32	0.05	0.20	0.20	0.06
Crit Moves:		****		****			****				****	
Delay/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.5	9.5	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.5	9.5	7.7
LOS by Move:	A	A	A	A	A	A	B	B	A	A	A	A
ApproachDel:		9.6			9.8			10.1			9.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.6			9.8			10.1			9.0	
LOS by Appr:		A			A			B			A	
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.0	0.4	0.4	0.0	0.2	0.2	0.1

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.7]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	37	0	21	0	0	0	0	166	18	3	131	0
Added Vol:	0	0	0	6	0	1	2	-2	0	0	-1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	21	6	0	1	2	164	18	3	130	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	48	0	28	8	0	1	3	216	24	4	170	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	48	0	28	8	0	1	3	216	24	4	170	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	419	425	228	432	430	177	183	xxxx	xxxxx	240	xxxx	xxxxx
Potent Cap.:	548	524	816	537	521	871	1404	xxxx	xxxxx	1339	xxxx	xxxxx
Move Cap.:	545	522	816	517	518	871	1404	xxxx	xxxxx	1339	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	621	xxxxx	xxxx	549	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.6	xxxxx	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.6			11.7		xxxxxx			xxxxxx		
ApproachLOS:		B			B		*			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.5]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	15	0	28	0	0	0	0	250	8	6	158	0
Added Vol:	0	0	0	15	0	2	1	-1	0	0	-2	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	28	15	0	2	1	249	8	6	156	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	274	9	7	172	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	274	9	7	172	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	471	472	279	485	474	175	178	xxxx	xxxxx	283	xxxx	xxxxx
Potent Cap.:	507	493	765	496	492	874	1411	xxxx	xxxxx	1291	xxxx	xxxxx
Move Cap.:	503	490	765	474	489	874	1411	xxxx	xxxxx	1291	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.03	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	645	xxxxx	xxxx	501	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.0	xxxxx	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.0			12.5		xxxxxx			xxxxxx		
ApproachLOS:		B			B		*			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.7]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	37	0	21	0	0	0	0	166	18	3	131	0
Added Vol:	0	0	0	6	0	1	2	-2	0	0	-1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	21	6	0	1	2	164	18	3	130	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	48	0	28	8	0	1	3	216	24	4	170	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	48	0	28	8	0	1	3	216	24	4	170	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	419	425	228	432	430	177	183	xxxx	xxxxx	240	xxxx	xxxxx
Potent Cap.:	548	524	816	537	521	871	1404	xxxx	xxxxx	1339	xxxx	xxxxx
Move Cap.:	545	522	816	517	518	871	1404	xxxx	xxxxx	1339	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	621	xxxxx	xxxx	549	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.6	xxxxx	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.6			11.7		xxxxxx			xxxxxx		
ApproachLOS:		B			B		*			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.5]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	15	0	28	0	0	0	0	250	8	6	158	0
Added Vol:	0	0	0	15	0	2	1	-1	0	0	-2	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	28	15	0	2	1	249	8	6	156	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	274	9	7	172	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	274	9	7	172	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	471	472	279	485	474	175	178	xxxx	xxxxx	283	xxxx	xxxxx
Potent Cap.:	507	493	765	496	492	874	1411	xxxx	xxxxx	1291	xxxx	xxxxx
Move Cap.:	503	490	765	474	489	874	1411	xxxx	xxxxx	1291	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.03	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	645	xxxxx	xxxx	501	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.0	xxxxx	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.0			12.5			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 70 Critical Vol./Cap.(X): 1.116
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 40.4
Optimal Cycle: OPTIMIZED Level Of Service: D

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	6	1	0	0	4	0	0	0	0	19	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	297	1269	0	0	1330	847	0	0	0	337	7	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	312	1334	0	0	1399	890	0	0	0	355	8	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	1334	0	0	1399	890	0	0	0	355	8	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	1334	0	0	1399	890	0	0	0	355	8	465
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.61	0.01	1.38
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1037	22	2480
Capacity Analysis Module:												
Vol/Sat:	0.18	0.37	0.00	0.00	0.26	0.49	0.00	0.00	0.00	0.34	0.34	0.19
Crit Moves:	****					****					****	
Green/Cycle:	0.16	0.61	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.31	0.31	0.31
Volume/Cap:	1.12	0.61	0.00	0.00	0.58	1.12	0.00	0.00	0.00	1.12	1.12	0.61
Delay/Veh:	117.8	9.1	0.0	0.0	15.0	88.1	0.0	0.0	0.0	93.9	93.9	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	117.8	9.1	0.0	0.0	15.0	88.1	0.0	0.0	0.0	93.9	93.9	21.6
LOS by Move:	F	A	A	A	B	F	A	A	A	F	F	C
HCM2kAvgQ:	15	10	0	0	8	35	0	0	0	26	26	7

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.933
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2	0 0		0 0 3	0 1		0 0 0	0 0		0 0 1!	0 1	
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	18	4	0	0	1	0	0	0	0	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	1311	0	0	1233	612	0	0	0	276	7	567
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	249	1368	0	0	1287	639	0	0	0	288	7	592
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	1368	0	0	1287	639	0	0	0	288	7	592
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	1368	0	0	1287	639	0	0	0	288	7	592
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.50	0.01	1.49
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	853	22	2675
Capacity Analysis Module:												
Vol/Sat:	0.15	0.38	0.00	0.00	0.24	0.35	0.00	0.00	0.00	0.34	0.34	0.22
Crit Moves:	****					****					****	
Green/Cycle:	0.17	0.54	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.36	0.36	0.36
Volume/Cap:	0.88	0.70	0.00	0.00	0.63	0.95	0.00	0.00	0.00	0.95	0.95	0.62
Delay/Veh:	49.6	11.3	0.0	0.0	16.0	40.2	0.0	0.0	0.0	36.3	36.3	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	11.3	0.0	0.0	16.0	40.2	0.0	0.0	0.0	36.3	36.3	16.7
LOS by Move:	D	B	A	A	B	D	A	A	A	D	D	B
HCM2kAvgQ:	8	11	0	0	8	17	0	0	0	17	17	7

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec):	60	Critical Vol./Cap.(X):	0.990
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	24.4
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 1	0 0	2
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	6	1	0	0	4	0	0	0	0	19	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	297	1269	0	0	1330	847	0	0	0	337	7	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	312	1334	0	0	1399	890	0	0	0	355	8	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	1334	0	0	1399	890	0	0	0	355	8	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	1334	0	0	1399	890	0	0	0	355	8	465
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1667	35	3600
Capacity Analysis Module:												
Vol/Sat:	0.18	0.37	0.00	0.00	0.26	0.49	0.00	0.00	0.00	0.21	0.21	0.13
Crit Moves:	****					****					****	
Green/Cycle:	0.19	0.69	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.21	0.21	0.21
Volume/Cap:	0.99	0.54	0.00	0.00	0.52	0.99	0.00	0.00	0.00	0.99	0.99	0.60
Delay/Veh:	72.2	5.0	0.0	0.0	10.3	42.3	0.0	0.0	0.0	67.7	67.7	22.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.2	5.0	0.0	0.0	10.3	42.3	0.0	0.0	0.0	67.7	67.7	22.6
LOS by Move:	E	A	A	A	B	D	A	A	A	E	E	C
HCM2kAvgQ:	12	7	0	0	6	25	0	0	0	13	13	5

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.750
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: OPTIMIZED Level Of Service: B

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2 0 0			0 0 3 0 1			0 0 0 0 0			0 1 0 0 2		
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	18	4	0	0	1	0	0	0	0	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	1311	0	0	1233	612	0	0	0	276	7	567
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	249	1368	0	0	1287	639	0	0	0	288	7	592
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	1368	0	0	1287	639	0	0	0	288	7	592
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	1368	0	0	1287	639	0	0	0	288	7	592
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.98	0.02	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1659	43	3600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.38	0.00	0.00	0.24	0.35	0.00	0.00	0.00	0.17	0.17	0.16
Crit Moves:	****					****					****	
Green/Cycle:	0.20	0.67	0.00	0.00	0.47	0.47	0.00	0.00	0.00	0.23	0.23	0.23
Volume/Cap:	0.75	0.57	0.00	0.00	0.50	0.75	0.00	0.00	0.00	0.75	0.75	0.71
Delay/Veh:	32.0	5.6	0.0	0.0	11.1	16.6	0.0	0.0	0.0	29.2	29.2	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	5.6	0.0	0.0	11.1	16.6	0.0	0.0	0.0	29.2	29.2	24.1
LOS by Move:	C	A	A	A	B	B	A	A	A	C	C	C
HCM2kAvgQ:	7	7	0	0	6	11	0	0	0	7	7	7

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 70 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 35.6
Optimal Cycle: OPTIMIZED Level Of Service: D

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	1 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	1084	365	494	1204	0	529	3	357	0	0	0
Added Vol:	0	7	6	0	23	0	0	0	19	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1091	371	494	1227	0	529	3	376	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1173	399	531	1319	0	569	3	404	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1173	399	531	1319	0	569	3	404	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1173	399	531	1319	0	569	3	404	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.42	0.01	0.57	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2423	8	1027	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.31	0.37	0.00	0.23	0.39	0.39	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.27	0.27	0.28	0.56	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.80	0.82	1.10	0.66	0.00	0.66	1.10	1.10	0.00	0.00	0.00
Delay/Veh:	0.0	27.0	34.2	95.5	11.7	0.0	19.9	83.2	83.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.0	34.2	95.5	11.7	0.0	19.9	83.2	83.2	0.0	0.0	0.0
LOS by Move:	A	C	C	F	B	A	B	F	F	A	A	A
HCM2kAvgQ:	0	10	11	23	11	0	9	28	28	0	0	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec): 65 Critical Vol./Cap.(X): 0.838
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	1 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	899	392	404	1058	0	710	7	202	0	0	0
Added Vol:	0	22	18	0	9	0	0	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	921	410	404	1067	0	710	7	209	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	950	423	417	1101	0	733	7	216	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	950	423	417	1101	0	733	7	216	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	950	423	417	1101	0	733	7	216	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.64	0.01	0.35	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2779	22	635	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.23	0.25	0.31	0.00	0.26	0.34	0.34	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.29	0.29	0.26	0.55	0.00	0.36	0.36	0.36	0.00	0.00	0.00
Volume/Cap:	0.00	0.60	0.80	0.95	0.56	0.00	0.74	0.95	0.95	0.00	0.00	0.00
Delay/Veh:	0.0	20.4	30.0	54.1	9.8	0.0	20.5	37.9	37.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.4	30.0	54.1	9.8	0.0	20.5	37.9	37.9	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	D	D	A	A	A
HCM2kAvgQ:	0	6	10	14	8	0	10	18	18	0	0	0

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec):	60	Critical Vol./Cap.(X):	0.840
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	21.2
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	2 0	0 1	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	1084	365	494	1204	0	529	3	357	0	0	0
Added Vol:	0	7	6	0	23	0	0	0	19	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1091	371	494	1227	0	529	3	376	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1173	399	531	1319	0	569	3	404	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1173	399	531	1319	0	569	3	404	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1173	399	531	1319	0	569	3	404	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.89	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	2.00	0.01	0.99	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	3200	15	1785	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.31	0.37	0.00	0.18	0.23	0.23	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.32	0.32	0.34	0.65	0.00	0.25	0.25	0.25	0.00	0.00	0.00
Volume/Cap:	0.00	0.69	0.70	0.92	0.56	0.00	0.73	0.92	0.92	0.00	0.00	0.00
Delay/Veh:	0.0	19.1	21.9	39.8	5.9	0.0	24.2	47.1	47.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.1	21.9	39.8	5.9	0.0	24.2	47.1	47.1	0.0	0.0	0.0
LOS by Move:	A	B	C	D	A	A	C	D	D	A	A	A
HCM2kAvgQ:	0	8	8	15	7	0	7	12	12	0	0	0

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec):	60	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	17.8
Optimal Cycle: OPTIMIZED		Level Of Service:	B

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	2 0	0 1	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	899	392	404	1058	0	710	7	202	0	0	0
Added Vol:	0	22	18	0	9	0	0	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	921	410	404	1067	0	710	7	209	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	950	423	417	1101	0	733	7	216	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	950	423	417	1101	0	733	7	216	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	950	423	417	1101	0	733	7	216	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.89	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	2.00	0.03	0.97	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	3200	59	1741	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.23	0.25	0.31	0.00	0.23	0.12	0.12	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green/Cycle:	0.00	0.32	0.32	0.30	0.62	0.00	0.28	0.28	0.28	0.00	0.00	0.00
Volume/Cap:	0.00	0.56	0.74	0.81	0.49	0.00	0.81	0.44	0.44	0.00	0.00	0.00
Delay/Veh:	0.0	17.4	23.5	29.0	6.5	0.0	25.8	18.3	18.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.4	23.5	29.0	6.5	0.0	25.8	18.3	18.3	0.0	0.0	0.0
LOS by Move:	A	B	C	C	A	A	C	B	B	A	A	A
HCM2kAvgQ:	0	6	9	10	6	0	10	4	4	0	0	0

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 110 Critical Vol./Cap.(X): 0.591
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 33.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 0	1 0		1 0 1	0 1	
Volume Module:												
Base Vol:	75	787	19	76	861	71	165	76	50	24	124	88
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	77	803	19	78	878	72	168	78	51	24	126	90
Added Vol:	1	14	0	0	42	0	0	0	2	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	817	19	78	920	72	168	78	53	26	126	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	87	913	22	87	1028	81	188	87	59	30	141	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	913	22	87	1028	81	188	87	59	30	141	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	913	22	87	1028	81	188	87	59	30	141	100
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.85	0.15	1.00	0.59	0.41	1.00	1.00	1.00
Final Sat.:	1700	3517	83	1700	3337	263	1700	1069	731	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.26	0.05	0.31	0.31	0.11	0.08	0.08	0.02	0.08	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.09	0.37	0.37	0.13	0.41	0.41	0.15	0.32	0.32	0.10	0.28	0.41
Volume/Cap:	0.56	0.70	0.70	0.39	0.76	0.76	0.76	0.25	0.25	0.17	0.28	0.14
Delay/Veh:	52.5	31.2	31.2	45.1	30.1	30.1	57.4	27.6	27.6	45.3	31.1	20.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.5	31.2	31.2	45.1	30.1	30.1	57.4	27.6	27.6	45.3	31.1	20.3
LOS by Move:	D	C	C	D	C	C	E	C	C	D	C	C
HCM2kAvgQ:	4	14	14	3	17	17	8	4	4	1	4	2

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec):	90	Critical Vol./Cap.(X):	0.644
Loss Time (sec):	8 (Y+R=4.0 sec)	Average Delay (sec/veh):	30.1
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	98	623	87	84	732	80	127	381	53	19	134	70
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	100	635	89	86	747	82	130	389	54	19	137	71
Added Vol:	2	41	2	0	16	0	0	0	1	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	676	91	86	763	82	130	389	55	20	137	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	108	717	96	91	809	87	137	412	58	22	145	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	717	96	91	809	87	137	412	58	22	145	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	717	96	91	809	87	137	412	58	22	145	76
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.76	0.24	1.00	1.81	0.19	1.00	0.88	0.12	1.00	1.00	1.00
Final Sat.:	1700	3174	426	1700	3252	348	1700	1577	223	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.23	0.05	0.25	0.25	0.08	0.26	0.26	0.01	0.08	0.04
Crit Moves:	****				****			****		****		
Green/Cycle:	0.11	0.32	0.32	0.12	0.34	0.34	0.11	0.35	0.35	0.11	0.35	0.48
Volume/Cap:	0.57	0.70	0.70	0.43	0.74	0.74	0.71	0.74	0.74	0.11	0.23	0.09
Delay/Veh:	42.2	28.6	28.6	37.9	28.9	28.9	50.4	30.1	30.1	36.3	20.8	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	28.6	28.6	37.9	28.9	28.9	50.4	30.1	30.1	36.3	20.8	13.0
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	B
HCM2kAvgQ:	4	11	11	3	12	12	5	13	13	1	3	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 90 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1 0	0 1	
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	93	747	33	80	817	78	83	128	86	52	102	33
Added Vol:	0	15	0	0	46	0	0	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	762	33	80	863	78	83	128	86	54	102	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	108	889	38	93	1007	90	96	149	100	63	119	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	889	38	93	1007	90	96	149	100	63	119	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	889	38	93	1007	90	96	149	100	63	119	38
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.84	0.16	0.29	0.43	0.28	0.36	0.64	1.00
Final Sat.:	1700	3452	148	1700	3303	297	495	763	513	611	1153	1800
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.26	0.05	0.30	0.30	0.19	0.19	0.19	0.10	0.10	0.02
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.40	0.40	0.17	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.57	0.65	0.65	0.32	0.67	0.67	0.57	0.57	0.57	0.30	0.30	0.06
Delay/Veh:	42.2	23.2	23.2	33.4	20.3	20.3	25.3	25.3	25.3	21.8	21.8	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	23.2	23.2	33.4	20.3	20.3	25.3	25.3	25.3	21.8	21.8	19.8
LOS by Move:	D	C	C	C	C	C	C	C	C	C	C	B
HCM2kAvgQ:	4	11	11	3	13	13	8	8	8	4	4	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec):	80	Critical Vol./Cap.(X):	0.597
Loss Time (sec):	8 (Y+R=3.0 sec)	Average Delay (sec/veh):	22.5
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	798	66	65	702	42	78	186	135	40	120	47
Added Vol:	0	45	2	0	18	0	0	0	0	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	843	68	65	720	42	78	186	135	41	120	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	112	880	71	68	751	44	81	194	141	43	126	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	880	71	68	751	44	81	194	141	43	126	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	112	880	71	68	751	44	81	194	141	43	126	49
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.85	0.15	1.00	1.89	0.11	0.20	0.47	0.33	0.26	0.74	1.00
Final Sat.:	1700	3330	270	1700	3402	198	347	830	602	449	1325	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.26	0.26	0.04	0.22	0.22	0.23	0.23	0.23	0.09	0.09	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.39	0.39	0.13	0.34	0.34	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.37	0.68	0.68	0.32	0.66	0.66	0.60	0.60	0.60	0.24	0.24	0.07
Delay/Veh:	29.8	21.8	21.8	32.8	24.0	24.0	21.1	21.1	21.1	16.8	16.8	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.8	21.8	21.8	32.8	24.0	24.0	21.1	21.1	21.1	16.8	16.8	15.5
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	11	11	2	9	9	9	9	9	3	3	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[17.9]

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	9	6	0	0	28	21	14	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	913	0	0	976	21	14	0	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	961	0	0	1027	22	15	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	961	0	0	1027	22	15	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1049	xxxx	xxxxx	xxxx	xxxx	xxxxx	1537	xxxx	525	xxxx	xxxx	xxxxx
Potent Cap.:	671	xxxx	xxxxx	xxxx	xxxx	xxxxx	109	xxxx	503	xxxx	xxxx	xxxxx
Move Cap.:	671	xxxx	xxxxx	xxxx	xxxx	xxxxx	107	xxxx	503	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	270	220	xxxxx	234	215	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.1	xxxx	12.2	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			17.9			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[18.4]

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	4	15	0	0	13	10	34	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	1006	0	0	933	10	34	0	7	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	4	1059	0	0	982	11	36	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	1059	0	0	982	11	36	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	993	xxxx	xxxxx	xxxx	xxxx	xxxxx	1526	xxxx	496	xxxx	xxxx	xxxxx
Potent Cap.:	705	xxxx	xxxxx	xxxx	xxxx	xxxxx	111	xxxx	524	xxxx	xxxx	xxxxx
Move Cap.:	705	xxxx	xxxxx	xxxx	xxxx	xxxxx	110	xxxx	524	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	281	215	xxxxx	213	213	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.7	xxxx	12.0	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			18.4			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

****

Street Name:	Cedar Avenue						Project Access #2					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	26	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	922	0	0	974	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	970	0	0	1025	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	970	0	0	1025	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	515	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	510	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	510	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.1			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

****

Street Name:	Cedar Avenue								Project Access #2							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0 0	2 0	0		0 0	1 1	0		0 0	0 0	1		0 0	0 0	0	
Volume Module:																
Base Vol:	0	972	0		0	902	0		0	0	0		0	0	0	
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	
Initial Bse:	0	991	0		0	920	0		0	0	0		0	0	0	
Added Vol:	0	19	0		0	18	2		0	0	2		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1010	0		0	938	2		0	0	2		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	0	1064	0		0	987	2		0	0	2		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	1064	0		0	987	2		0	0	2		0	0	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	495		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	526		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	526		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	0.00		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	0.0		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	11.9		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	B		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				11.9				xxxxxx			
ApproachLOS:	*				*				B				*			

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

Street Name:	Cedar Avenue						Project Access #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2	0	0	0 0 1	1	0	0 0 0	0	1	0 0 0	0	0
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	23	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	922	0	0	971	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	970	0	0	1022	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	970	0	0	1022	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	513	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	512	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	512	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.1			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

Street Name:	Cedar Avenue						Project Access #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	0	19	0	0	18	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1010	0	0	938	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1064	0	0	987	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1064	0	0	987	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	495	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.0]

Street Name:	Cedar Avenue						Project Access #4					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	9	15	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	922	0	0	957	15	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	970	0	0	1007	16	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	970	0	0	1007	16	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	511	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	513	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	513	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.0			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

****

Street Name:	Cedar Avenue									Project Access #4								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	972		0		0	902		0		0	0		0		0	0		0	
Growth Adj:	1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02		1.02	1.02		1.02	
Initial Bse:	0	991		0		0	920		0		0	0		0		0	0		0	
Added Vol:	0	19		0		0	14		7		0	0		5		0	0		0	
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0		0	
Initial Fut:	0	1010		0		0	934		7		0	0		5		0	0		0	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.95	0.95		0.95		0.95	0.95		0.95		0.95	0.95		0.95		0.95	0.95		0.95	
PHF Volume:	0	1064		0		0	983		7		0	0		5		0	0		0	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
FinalVolume:	0	1064		0		0	983		7		0	0		5		0	0		0	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxx	6.9	xxxxx	xxxx		xxxxx	
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxx	3.3	xxxxx	xxxx		xxxxx	
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxx	495	xxxx	xxxx		xxxxx	
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxx	525	xxxx	xxxx		xxxxx	
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxx	525	xxxx	xxxx		xxxxx	
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx	0.01	xxxx	xxxx		xxxx	
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxx	0.0	xxxx	xxxx		xxxxx	
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxx	11.9	xxxxx	xxxx		xxxxx	
LOS by Move:	*	*		*		*	*		*		*	*		*	B	*	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	*		*	
ApproachDel:	xxxxxx					xxxxxx					11.9					xxxxxx				
ApproachLOS:	*					*					B					*				

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.0]

Street Name:	Cedar Avenue						Project Access #5					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	15	0	0	7	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	922	0	0	955	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	970	0	0	1005	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	970	0	0	1005	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	505	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	518	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	518	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.0			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[11.9]

Street Name:	Cedar Avenue						Project Access #5					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	2 0	0	0 0	1 1	0	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	0	19	0	0	17	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1010	0	0	937	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1064	0	0	986	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1064	0	0	986	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	494	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	526	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

Cycle (sec): 95 Critical Vol./Cap.(X): 0.468
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10 19	19		10 19	19		31 31	31		31 31	31	
Lanes:	1 0 1 1	0		1 0 1 1	0		0 1 0	0 1		0 1 0	0 1	
Volume Module:												
Base Vol:	44 700	49		65 832	32		55 80	56		57 65	134	
Growth Adj:	1.02 1.02	1.02		1.02 1.02	1.02		1.02 1.02	1.02		1.02 1.02	1.02	
Initial Bse:	45 714	50		66 849	33		56 82	57		58 66	137	
Added Vol:	3 9	0		2 5	0		6 -1	-1		0 6	0	
PasserByVol:	0 0	0		0 0	0		0 0	0		0 0	0	
Initial Fut:	48 723	50		68 854	33		62 81	56		58 72	137	
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.81 0.81	0.81		0.81 0.81	0.81		0.81 0.81	0.81		0.81 0.81	0.81	
PHF Volume:	59 891	62		84 1053	40		77 99	69		72 89	169	
Reduct Vol:	0 0	0		0 0	0		0 0	0		0 0	0	
Reduced Vol:	59 891	62		84 1053	40		77 99	69		72 89	169	
PCE Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
MLF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
FinalVolume:	59 891	62		84 1053	40		77 99	69		72 89	169	
Saturation Flow Module:												
Sat/Lane:	1800 1800	1800		1800 1800	1800		1800 1800	1800		1800 1800	1800	
Adjustment:	0.94 1.00	1.00		0.94 1.00	1.00		0.94 1.00	1.00		0.94 1.00	1.00	
Lanes:	1.00 1.87	0.13		1.00 1.93	0.07		0.45 0.55	1.00		0.46 0.54	1.00	
Final Sat.:	1700 3367	233		1700 3467	133		764 991	1800		782 972	1800	
Capacity Analysis Module:												
Vol/Sat:	0.03 0.26	0.26		0.05 0.30	0.30		0.10 0.10	0.04		0.09 0.09	0.09	
Crit Moves:	****			****			****					
Green/Cycle:	0.11 0.44	0.44		0.17 0.51	0.51		0.33 0.33	0.33		0.33 0.33	0.33	
Volume/Cap:	0.33 0.61	0.61		0.29 0.60	0.60		0.31 0.31	0.12		0.28 0.28	0.29	
Delay/Veh:	40.5 21.2	21.2		34.7 17.3	17.3		24.3 24.3	22.5		24.0 24.0	24.1	
User DelAdj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
AdjDel/Veh:	40.5 21.2	21.2		34.7 17.3	17.3		24.3 24.3	22.5		24.0 24.0	24.1	
LOS by Move:	D C	C		C B	B		C C	C		C C	C	
HCM2kAvgQ:	2 11	11		2 12	12		4 4	1		4 4	4	

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

****

Cycle (sec): 85 Critical Vol./Cap.(X): 0.549
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1	1 0		1 0 1	1 0		0 1 0	0 1		0 1 0	0 1	
Volume Module:												
Base Vol:	68	849	72	119	741	42	69	150	63	56	67	54
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	69	866	73	121	756	43	70	153	64	57	68	55
Added Vol:	1	4	0	6	12	0	15	-1	-1	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	870	73	127	768	43	85	152	63	57	70	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	76	941	79	138	830	46	92	164	68	62	76	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	941	79	138	830	46	92	164	68	62	76	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	941	79	138	830	46	92	164	68	62	76	60
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.84	0.16	1.00	1.89	0.11	0.37	0.63	1.00	0.46	0.54	1.00
Final Sat.:	1700	3320	280	1700	3410	190	634	1129	1800	786	968	1800
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.28	0.08	0.24	0.24	0.15	0.15	0.04	0.08	0.08	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.44	0.44	0.13	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	0.24	0.65	0.65	0.65	0.64	0.64	0.40	0.40	0.10	0.22	0.22	0.09
Delay/Veh:	30.0	19.6	19.6	42.0	22.6	22.6	20.5	20.5	17.9	18.8	18.8	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.0	19.6	19.6	42.0	22.6	22.6	20.5	20.5	17.9	18.8	18.8	17.8
LOS by Move:	C	B	B	D	C	C	C	C	B	B	B	B
HCM2kAvgQ:	2	11	11	5	10	10	5	5	1	3	3	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Opening Year (2018) With Ambient and Cumulative and Project

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec): 100 Critical Vol./Cap.(X): 0.525
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 0 Level Of Service: B

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	9	191	11	62	146	55	14	60	10	5	53	72
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	9	195	11	63	149	56	14	61	10	5	54	73
Added Vol:	0	0	0	2	0	0	0	2	0	0	2	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	195	11	65	149	56	14	63	10	5	56	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	13	278	16	93	212	80	20	90	15	7	80	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	278	16	93	212	80	20	90	15	7	80	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	13	278	16	93	212	80	20	90	15	7	80	106
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.91	0.05	0.30	0.70	1.00	0.18	0.82	1.00	0.08	0.92	1.00
Final Sat.:	25	529	30	178	405	672	90	400	548	42	464	565
Capacity Analysis Module:												
Vol/Sat:	0.53	0.53	0.53	0.52	0.52	0.12	0.23	0.23	0.03	0.17	0.17	0.19
Crit Moves:			****		****			****				****
Delay/Veh:	15.1	15.1	15.1	14.8	14.8	8.5	11.2	11.2	8.8	10.6	10.6	9.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.1	15.1	15.1	14.8	14.8	8.5	11.2	11.2	8.8	10.6	10.6	9.8
LOS by Move:	C	C	C	B	B	A	B	B	A	B	B	A
ApproachDel:	15.1			13.5			10.9			10.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.1			13.5			10.9			10.1		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	1.0	1.0	1.0	1.0	1.0	0.1	0.2	0.2	0.0	0.2	0.2	0.2

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Linden Avenue (NS) at Jurupa Avenue (EW) - #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.325
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.7
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Linden Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	16	55	11	52	56	10	25	170	32	15	105	39
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	16	56	11	53	57	10	26	173	33	15	107	40
Added Vol:	0	0	0	1	0	0	0	1	0	0	2	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	56	11	54	57	10	26	174	33	15	109	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	17	59	12	57	61	11	27	185	35	16	116	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	59	12	57	61	11	27	185	35	16	116	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	59	12	57	61	11	27	185	35	16	116	44
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.20	0.67	0.13	0.49	0.51	1.00	0.13	0.87	1.00	0.12	0.88	1.00
Final Sat.:	116	398	80	281	297	678	83	568	753	79	561	736
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.20	0.20	0.02	0.33	0.33	0.05	0.21	0.21	0.06
Crit Moves:		****		****				****		****		
Delay/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.5	9.5	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.6	9.6	9.6	10.0	10.0	7.7	10.5	10.5	7.5	9.5	9.5	7.7
LOS by Move:	A	A	A	B	B	A	B	B	A	A	A	A
ApproachDel:		9.6			9.8			10.1			9.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.6			9.8			10.1			9.0	
LOS by Appr:		A			A			B			A	
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.0	0.4	0.4	0.0	0.2	0.2	0.1

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.7]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	37	0	21	0	0	0	0	166	18	3	131	0
Added Vol:	0	0	0	6	0	1	2	-1	0	0	1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	21	6	0	1	2	165	18	3	132	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	48	0	28	8	0	1	3	217	24	4	173	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	48	0	28	8	0	1	3	217	24	4	173	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	423	429	229	436	434	179	186	xxxx	xxxxx	241	xxxx	xxxxx
Potent Cap.:	545	522	815	534	518	869	1401	xxxx	xxxxx	1337	xxxx	xxxxx
Move Cap.:	542	519	815	514	516	869	1401	xxxx	xxxxx	1337	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	618	xxxxx	xxxx	546	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.6	xxxxx	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.6			11.7			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.5]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	15	0	28	0	0	0	0	250	8	6	158	0
Added Vol:	0	0	0	15	0	2	1	0	0	0	-1	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	28	15	0	2	1	250	8	6	157	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	276	9	7	173	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	276	9	7	173	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	473	474	280	487	476	176	179	xxxx	xxxxx	285	xxxx	xxxxx
Potent Cap.:	505	492	764	494	491	872	1409	xxxx	xxxxx	1289	xxxx	xxxxx
Move Cap.:	501	489	764	472	488	872	1409	xxxx	xxxxx	1289	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.04	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	643	xxxxx	xxxx	499	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.0	xxxxx	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.0			12.5			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.7]

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	36	0	21	0	0	0	0	163	18	3	128	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	37	0	21	0	0	0	0	166	18	3	131	0
Added Vol:	0	0	0	6	0	1	2	-1	0	0	1	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	0	21	6	0	1	2	165	18	3	132	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	48	0	28	8	0	1	3	217	24	4	173	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	48	0	28	8	0	1	3	217	24	4	173	13
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	423	429	229	436	434	179	186	xxxx	xxxxx	241	xxxx	xxxxx
Potent Cap.:	545	522	815	534	518	869	1401	xxxx	xxxxx	1337	xxxx	xxxxx
Move Cap.:	542	519	815	514	516	869	1401	xxxx	xxxxx	1337	xxxx	xxxxx
Volume/Cap:	0.09	0.00	0.03	0.02	0.00	0.00	0.00	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	618	xxxxx	xxxx	546	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.6	xxxxx	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.6			11.7			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Oak Street/Project Access (NS) at Jurupa Avenue (EW) - #2

****

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.5]

****

Street Name:	Oak Street/Project Access						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	15	0	27	0	0	0	0	245	8	6	155	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	15	0	28	0	0	0	0	250	8	6	158	0
Added Vol:	0	0	0	15	0	2	1	0	0	0	-1	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	15	0	28	15	0	2	1	250	8	6	157	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	17	0	30	17	0	2	1	276	9	7	173	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	30	17	0	2	1	276	9	7	173	6
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	473	474	280	487	476	176	179	xxxx	xxxxx	285	xxxx	xxxxx
Potent Cap.:	505	492	764	494	491	872	1409	xxxx	xxxxx	1289	xxxx	xxxxx
Move Cap.:	501	489	764	472	488	872	1409	xxxx	xxxxx	1289	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.04	0.04	0.00	0.00	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	643	xxxxx	xxxx	499	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.0	xxxxx	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.0			12.5			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 75 Critical Vol./Cap.(X): 1.224
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 58.4
Optimal Cycle: OPTIMIZED Level Of Service: E

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	59	71	0	0	82	13	0	0	0	119	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	1339	0	0	1408	860	0	0	0	437	7	456
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	368	1408	0	0	1481	904	0	0	0	460	8	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	368	1408	0	0	1481	904	0	0	0	460	8	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	368	1408	0	0	1481	904	0	0	0	460	8	479
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.66	0.01	1.33
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	1128	18	2388
Capacity Analysis Module:												
Vol/Sat:	0.22	0.39	0.00	0.00	0.27	0.50	0.00	0.00	0.00	0.41	0.41	0.20
Crit Moves:	****					****					****	
Green/Cycle:	0.18	0.59	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.33	0.33	0.33
Volume/Cap:	1.22	0.67	0.00	0.00	0.67	1.22	0.00	0.00	0.00	1.22	1.22	0.60
Delay/Veh:	157.7	11.3	0.0	0.0	18.8	134.9	0.0	0.0	0.0	137.3	137	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	157.7	11.3	0.0	0.0	18.8	134.9	0.0	0.0	0.0	137.3	137	21.5
LOS by Move:	F	B	A	A	B	F	A	A	A	F	F	C
HCM2kAvgQ:	21	12	0	0	10	44	0	0	0	36	36	8

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

Cycle (sec): 60 Critical Vol./Cap.(X): 1.051
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 31.9
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	0 0	1! 0	1
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	110	107	0	0	59	11	0	0	0	67	0	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	330	1414	0	0	1291	623	0	0	0	336	7	589
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	345	1476	0	0	1348	650	0	0	0	351	7	615
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1476	0	0	1348	650	0	0	0	351	7	615
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	1476	0	0	1348	650	0	0	0	351	7	615
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.54	0.01	1.45
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	920	20	2606
Capacity Analysis Module:												
Vol/Sat:	0.20	0.41	0.00	0.00	0.25	0.36	0.00	0.00	0.00	0.38	0.38	0.24
Crit Moves:	****					****					****	
Green/Cycle:	0.19	0.54	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.36	0.36	0.36
Volume/Cap:	1.05	0.76	0.00	0.00	0.73	1.05	0.00	0.00	0.00	1.05	1.05	0.65
Delay/Veh:	87.8	12.8	0.0	0.0	18.7	69.9	0.0	0.0	0.0	62.9	62.9	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.8	12.8	0.0	0.0	18.7	69.9	0.0	0.0	0.0	62.9	62.9	16.9
LOS by Move:	F	B	A	A	B	E	A	A	A	E	E	B
HCM2kAvgQ:	14	13	0	0	9	22	0	0	0	23	23	8

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.951
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0 2	0	0	0 0 3	0	1	0 0 0	0	0	1 1	0	0 2
Volume Module:												
Base Vol:	285	1243	0	0	1300	830	0	0	0	312	7	434
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	1268	0	0	1326	847	0	0	0	318	7	443
Added Vol:	59	71	0	0	82	13	0	0	0	119	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	1339	0	0	1408	860	0	0	0	437	7	456
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	368	1408	0	0	1481	904	0	0	0	460	8	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	368	1408	0	0	1481	904	0	0	0	460	8	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	368	1408	0	0	1481	904	0	0	0	460	8	479
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.97	0.03	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	3348	55	3600
Capacity Analysis Module:												
Vol/Sat:	0.22	0.39	0.00	0.00	0.27	0.50	0.00	0.00	0.00	0.14	0.14	0.13
Crit Moves:	****					****					****	
Green/Cycle:	0.23	0.76	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.14	0.14	0.14
Volume/Cap:	0.95	0.52	0.00	0.00	0.52	0.95	0.00	0.00	0.00	0.95	0.95	0.92
Delay/Veh:	56.0	3.1	0.0	0.0	9.4	31.8	0.0	0.0	0.0	54.0	54.0	47.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.0	3.1	0.0	0.0	9.4	31.8	0.0	0.0	0.0	54.0	54.0	47.3
LOS by Move:	E	A	A	A	A	C	A	A	A	D	D	D
HCM2kAvgQ:	12	6	0	0	6	22	0	0	0	9	9	8

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Cedar Avenue (NS) at I-10 Freeway WB Ramps (EW) - #3

****

Cycle (sec):	60	Critical Vol./Cap.(X):	0.817
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	15.9
Optimal Cycle: OPTIMIZED		Level Of Service:	B

****

Street Name:	Cedar Avenue						I-10 Freeway WB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	0	0	19	19	0	0	0	7	7	7
Lanes:	1 0	2 0	0	0 0	3 0	1	0 0	0 0	0	1 1	0 0	2
Volume Module:												
Base Vol:	216	1281	0	0	1208	600	0	0	0	264	7	556
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	220	1307	0	0	1232	612	0	0	0	269	7	567
Added Vol:	110	107	0	0	59	11	0	0	0	67	0	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	330	1414	0	0	1291	623	0	0	0	336	7	589
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	345	1476	0	0	1348	650	0	0	0	351	7	615
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	1476	0	0	1348	650	0	0	0	351	7	615
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	1476	0	0	1348	650	0	0	0	351	7	615
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.96	0.04	2.00
Final Sat.:	1700	3600	0	0	5400	1800	0	0	0	3333	71	3600
Capacity Analysis Module:												
Vol/Sat:	0.20	0.41	0.00	0.00	0.25	0.36	0.00	0.00	0.00	0.11	0.11	0.17
Crit Moves:	****					****						****
Green/Cycle:	0.25	0.69	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.21	0.21	0.21
Volume/Cap:	0.82	0.59	0.00	0.00	0.56	0.82	0.00	0.00	0.00	0.50	0.50	0.82
Delay/Veh:	33.0	5.2	0.0	0.0	12.7	21.2	0.0	0.0	0.0	21.5	21.5	29.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	5.2	0.0	0.0	12.7	21.2	0.0	0.0	0.0	21.5	21.5	29.6
LOS by Move:	C	A	A	A	B	C	A	A	A	C	C	C
HCM2kAvgQ:	9	8	0	0	7	13	0	0	0	4	4	8

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec): 70 Critical Vol./Cap.(X): 1.106
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 47.4
Optimal Cycle: OPTIMIZED Level Of Service: D

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	1 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	1084	365	494	1204	0	529	3	357	0	0	0
Added Vol:	0	118	57	13	188	0	13	0	108	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1202	422	507	1392	0	542	3	465	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1293	454	545	1496	0	583	3	500	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1293	454	545	1496	0	583	3	500	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1293	454	545	1496	0	583	3	500	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.38	0.01	0.61	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2346	7	1108	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.25	0.32	0.42	0.00	0.25	0.45	0.45	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.27	0.27	0.27	0.54	0.00	0.38	0.38	0.38	0.00	0.00	0.00
Volume/Cap:	0.00	0.88	0.93	1.20	0.77	0.00	0.66	1.20	1.20	0.00	0.00	0.00
Delay/Veh:	0.0	31.0	49.1	135.3	14.7	0.0	19.2	123	122.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.0	49.1	135.3	14.7	0.0	19.2	123	122.6	0.0	0.0	0.0
LOS by Move:	A	C	D	F	B	A	B	F	F	A	A	A
HCM2kAvgQ:	0	13	14	28	15	0	9	37	37	0	0	0

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.932
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	1 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	899	392	404	1058	0	710	7	202	0	0	0
Added Vol:	0	196	120	11	115	0	22	0	62	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1095	512	415	1173	0	732	7	264	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	1130	528	428	1210	0	755	7	272	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1130	528	428	1210	0	755	7	272	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1130	528	428	1210	0	755	7	272	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	1.59	0.01	0.40	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	2700	20	721	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.29	0.25	0.34	0.00	0.28	0.38	0.38	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.32	0.32	0.23	0.55	0.00	0.35	0.35	0.35	0.00	0.00	0.00
Volume/Cap:	0.00	0.66	0.93	1.08	0.61	0.00	0.80	1.08	1.08	0.00	0.00	0.00
Delay/Veh:	0.0	18.7	41.2	91.0	9.7	0.0	21.2	72.3	72.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.7	41.2	91.0	9.7	0.0	21.2	72.3	72.3	0.0	0.0	0.0
LOS by Move:	A	B	D	F	A	A	C	E	E	A	A	A
HCM2kAvgQ:	0	7	14	17	8	0	11	24	24	0	0	0

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

Cycle (sec):	65	Critical Vol./Cap.(X):	0.925
Loss Time (sec):	6 (Y+R=3.0 sec)	Average Delay (sec/veh):	26.9
Optimal Cycle: OPTIMIZED		Level Of Service:	C

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0	3 0	1	1 0	2 0	0	2 0	0 1	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	1063	358	484	1180	0	519	3	350	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	1084	365	494	1204	0	529	3	357	0	0	0
Added Vol:	0	118	57	13	188	0	13	0	108	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1202	422	507	1392	0	542	3	465	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1293	454	545	1496	0	583	3	500	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1293	454	545	1496	0	583	3	500	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1293	454	545	1496	0	583	3	500	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.89	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	2.00	0.01	0.99	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	3200	12	1788	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.25	0.32	0.42	0.00	0.18	0.28	0.28	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.29	0.29	0.33	0.62	0.00	0.29	0.29	0.29	0.00	0.00	0.00
Volume/Cap:	0.00	0.82	0.86	0.98	0.67	0.00	0.64	0.98	0.98	0.00	0.00	0.00
Delay/Veh:	0.0	24.9	35.5	53.2	8.8	0.0	21.7	56.1	56.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.9	35.5	53.2	8.8	0.0	21.7	56.1	56.1	0.0	0.0	0.0
LOS by Move:	A	C	D	D	A	A	C	E	E	A	A	A
HCM2kAvgQ:	0	11	12	18	11	0	7	16	16	0	0	0

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #4 Cedar Avenue (NS) at I-10 Freeway EB Ramps (EW) - #4

****

Cycle (sec): 60 Critical Vol./Cap.(X): 0.775
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						I-10 Freeway EB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	19	19	10	19	0	7	7	7	0	0	0
Lanes:	0 0 3	0	1	1 0 2	0	0	2 0 0	1	0	0 0 0	0	0
Volume Module:												
Base Vol:	0	881	384	396	1037	0	696	7	198	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	899	392	404	1058	0	710	7	202	0	0	0
Added Vol:	0	196	120	11	115	0	22	0	62	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1095	512	415	1173	0	732	7	264	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	0	1130	528	428	1210	0	755	7	272	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1130	528	428	1210	0	755	7	272	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1130	528	428	1210	0	755	7	272	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.89	1.00	1.00	0.94	1.00	1.00
Lanes:	0.00	3.00	1.00	1.00	2.00	0.00	2.00	0.03	0.97	0.00	0.00	0.00
Final Sat.:	0	5400	1800	1700	3600	0	3200	47	1753	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.29	0.25	0.34	0.00	0.24	0.16	0.16	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green/Cycle:	0.00	0.32	0.32	0.30	0.62	0.00	0.28	0.28	0.28	0.00	0.00	0.00
Volume/Cap:	0.00	0.66	0.93	0.84	0.54	0.00	0.84	0.55	0.55	0.00	0.00	0.00
Delay/Veh:	0.0	18.7	41.2	31.1	6.9	0.0	27.1	19.6	19.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.7	41.2	31.1	6.9	0.0	27.1	19.6	19.6	0.0	0.0	0.0
LOS by Move:	A	B	D	C	A	A	C	B	B	A	A	A
HCM2kAvgQ:	0	7	14	11	7	0	10	5	5	0	0	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

****

Cycle (sec):	125	Critical Vol./Cap.(X):	0.712
Loss Time (sec):	8 (Y+R=4.0 sec)	Average Delay (sec/veh):	39.5
Optimal Cycle: OPTIMIZED		Level Of Service:	D

****

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	75	787	19	76	861	71	165	76	50	24	124	88
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	77	803	19	78	878	72	168	78	51	24	126	90
Added Vol:	6	97	5	24	143	129	53	6	8	8	14	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	900	24	102	1021	201	221	84	59	32	140	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	92	1005	27	113	1141	225	247	93	66	36	157	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	1005	27	113	1141	225	247	93	66	36	157	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	1005	27	113	1141	225	247	93	66	36	157	127
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.95	0.05	1.00	1.67	0.33	1.00	0.59	0.41	1.00	1.00	1.00
Final Sat.:	1700	3505	95	1700	3007	593	1700	1055	745	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.05	0.29	0.29	0.07	0.38	0.38	0.15	0.09	0.09	0.02	0.09	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.41	0.41	0.11	0.44	0.44	0.17	0.31	0.31	0.10	0.25	0.36
Volume/Cap:	0.68	0.71	0.71	0.59	0.86	0.86	0.86	0.28	0.28	0.21	0.35	0.20
Delay/Veh:	68.8	32.5	32.5	57.4	36.8	36.8	73.2	32.5	32.5	52.2	39.2	27.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	32.5	32.5	57.4	36.8	36.8	73.2	32.5	32.5	52.2	39.2	27.6
LOS by Move:	E	C	C	E	D	D	E	C	C	D	D	C
HCM2kAvgQ:	5	17	17	5	26	26	13	5	5	1	5	3

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Cedar Avenue (NS) at Slover Avenue (EW) - #5

Cycle (sec): 110 Critical Vol./Cap.(X): 0.657
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 39.1
Optimal Cycle: OPTIMIZED Level Of Service: D

Street Name:	Cedar Avenue						Slover Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	10	26	26	10	26	26	10	31	31	10	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	98	623	87	84	732	80	127	381	53	19	134	70
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	100	635	89	86	747	82	130	389	54	19	137	71
Added Vol:	9	155	8	14	96	67	133	13	7	6	8	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	790	97	100	843	149	263	402	61	25	145	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	116	838	103	106	894	158	278	426	65	27	153	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	838	103	106	894	158	278	426	65	27	153	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	838	103	106	894	158	278	426	65	27	153	105
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.78	0.22	1.00	1.70	0.30	1.00	0.87	0.13	1.00	1.00	1.00
Final Sat.:	1700	3207	393	1700	3060	540	1700	1562	238	1700	1800	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.26	0.26	0.06	0.29	0.29	0.16	0.27	0.27	0.02	0.09	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.09	0.33	0.33	0.12	0.36	0.36	0.20	0.36	0.36	0.12	0.28	0.40
Volume/Cap:	0.75	0.79	0.79	0.54	0.82	0.82	0.82	0.75	0.75	0.13	0.30	0.15
Delay/Veh:	66.8	37.0	37.0	48.9	36.7	36.7	57.0	35.4	35.4	43.8	31.3	21.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.8	37.0	37.0	48.9	36.7	36.7	57.0	35.4	35.4	43.8	31.3	21.3
LOS by Move:	E	D	D	D	D	D	E	D	D	D	C	C
HCM2kAvgQ:	6	16	16	4	18	18	12	16	16	1	4	2

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 90 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 25.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	93	747	33	80	817	78	83	128	86	52	102	33
Added Vol:	14	40	0	7	93	59	61	11	15	2	10	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	787	33	87	910	137	144	139	101	54	112	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	125	918	38	101	1062	159	168	162	117	63	131	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	918	38	101	1062	159	168	162	117	63	131	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	918	38	101	1062	159	168	162	117	63	131	46
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.74	0.26	0.39	0.35	0.26	0.34	0.66	1.00
Final Sat.:	1700	3457	143	1700	3130	470	661	637	463	575	1192	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.27	0.27	0.06	0.34	0.34	0.25	0.25	0.25	0.11	0.11	0.03
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.40	0.40	0.17	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.66	0.66	0.66	0.36	0.74	0.74	0.74	0.74	0.74	0.32	0.32	0.07
Delay/Veh:	46.7	23.3	23.3	34.0	22.1	22.1	30.6	30.6	30.6	22.0	22.0	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	23.3	23.3	34.0	22.1	22.1	30.6	30.6	30.6	22.0	22.0	19.9
LOS by Move:	D	C	C	C	C	C	C	C	C	C	C	B
HCM2kAvgQ:	5	12	12	3	15	15	13	13	13	4	4	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0215 (c) 2008 Dowling Assoc. Licensed to KUNZMAN ASSOC, ORANGE CA

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

****

Cycle (sec): 80 Critical Vol./Cap.(X): 0.679
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 24.3
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	798	66	65	702	42	78	186	135	40	120	47
Added Vol:	15	94	2	6	43	60	67	10	15	1	11	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	122	892	68	71	745	102	145	196	150	41	131	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	127	931	71	74	777	106	151	204	156	43	137	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	931	71	74	777	106	151	204	156	43	137	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	931	71	74	777	106	151	204	156	43	137	60
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.86	0.14	1.00	1.76	0.24	0.31	0.39	0.30	0.25	0.75	1.00
Final Sat.:	1700	3344	256	1700	3167	433	522	707	541	421	1355	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.28	0.04	0.25	0.25	0.29	0.29	0.29	0.10	0.10	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.17	0.38	0.38	0.13	0.33	0.33	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.44	0.73	0.73	0.35	0.73	0.73	0.73	0.73	0.73	0.26	0.26	0.09
Delay/Veh:	30.8	23.4	23.4	33.0	25.8	25.8	24.6	24.6	24.6	16.5	16.5	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	23.4	23.4	33.0	25.8	25.8	24.6	24.6	24.6	16.5	16.5	15.2
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	12	12	2	11	11	12	12	12	3	3	1

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 90 Critical Vol./Cap.(X): 0.731
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 25.0
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	91	732	32	78	801	76	81	125	84	51	100	32
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	93	747	33	80	817	78	83	128	86	52	102	33
Added Vol:	14	40	0	7	93	59	61	11	15	2	10	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	787	33	87	910	137	144	139	101	54	112	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	125	918	38	101	1062	159	168	162	117	63	131	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	918	38	101	1062	159	168	162	117	63	131	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	918	38	101	1062	159	168	162	117	63	131	46
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.74	0.26	0.39	0.35	0.26	0.34	0.66	1.00
Final Sat.:	1700	3457	143	1700	3130	470	661	637	463	575	1192	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.27	0.27	0.06	0.34	0.34	0.25	0.25	0.25	0.11	0.11	0.03
Crit Moves:	****				****			****				
Green/Cycle:	0.11	0.40	0.40	0.17	0.46	0.46	0.34	0.34	0.34	0.34	0.34	0.34
Volume/Cap:	0.66	0.66	0.66	0.36	0.74	0.74	0.74	0.74	0.74	0.32	0.32	0.07
Delay/Veh:	46.7	23.3	23.3	34.0	22.1	22.1	30.6	30.6	30.6	22.0	22.0	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	23.3	23.3	34.0	22.1	22.1	30.6	30.6	30.6	22.0	22.0	19.9
LOS by Move:	D	C	C	C	C	C	C	C	C	C	C	B
HCM2kAvgQ:	5	12	12	3	15	15	13	13	13	4	4	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Cedar Avenue (NS) at Santa Ana Avenue (EW) - #6

Cycle (sec): 80 Critical Vol./Cap.(X): 0.679
Loss Time (sec): 8 (Y+R=3.0 sec) Average Delay (sec/veh): 24.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Santa Ana Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	105	782	65	64	688	41	76	182	132	39	118	46
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	798	66	65	702	42	78	186	135	40	120	47
Added Vol:	15	94	2	6	43	60	67	10	15	1	11	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	122	892	68	71	745	102	145	196	150	41	131	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	127	931	71	74	777	106	151	204	156	43	137	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	931	71	74	777	106	151	204	156	43	137	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	931	71	74	777	106	151	204	156	43	137	60
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.86	0.14	1.00	1.76	0.24	0.31	0.39	0.30	0.25	0.75	1.00
Final Sat.:	1700	3344	256	1700	3167	433	522	707	541	421	1355	1800
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.28	0.04	0.25	0.25	0.29	0.29	0.29	0.10	0.10	0.03
Crit Moves:		****		****				****				
Green/Cycle:	0.17	0.38	0.38	0.13	0.33	0.33	0.39	0.39	0.39	0.39	0.39	0.39
Volume/Cap:	0.44	0.73	0.73	0.35	0.73	0.73	0.73	0.73	0.73	0.26	0.26	0.09
Delay/Veh:	30.8	23.4	23.4	33.0	25.8	25.8	24.6	24.6	24.6	16.5	16.5	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	23.4	23.4	33.0	25.8	25.8	24.6	24.6	24.6	16.5	16.5	15.2
LOS by Move:	C	C	C	C	C	C	C	C	C	B	B	B
HCM2kAvgQ:	3	12	12	2	11	11	12	12	12	3	3	1

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

****

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[18.9]

****

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	9	45	0	0	90	21	14	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	952	0	0	1038	21	14	0	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	9	1002	0	0	1092	22	15	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	1002	0	0	1092	22	15	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1114	xxxx	xxxxx	xxxx	xxxx	xxxxx	1623	xxxx	557	xxxx	xxxx	xxxxx
Potent Cap.:	634	xxxx	xxxxx	xxxx	xxxx	xxxxx	95	xxxx	479	xxxx	xxxx	xxxxx
Move Cap.:	634	xxxx	xxxxx	xxxx	xxxx	xxxxx	94	xxxx	479	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	250	206	xxxxx	220	201	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.3	xxxx	12.6	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			18.9			xxxxxx		
ApproachLOS:	*			*			C			*		

****

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Cedar Avenue (NS) at Project Access #1 (EW) - #7

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[19.2]

Street Name:	Cedar Avenue						Project Access #1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 0			0 0 1 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	4	79	0	0	54	10	34	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	1070	0	0	974	10	34	0	7	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	4	1127	0	0	1025	11	36	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	1127	0	0	1025	11	36	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1036	xxxx	xxxxx	xxxx	xxxx	xxxxx	1602	xxxx	518	xxxx	xxxx	xxxxx
Potent Cap.:	679	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	508	xxxx	xxxx	xxxxx
Move Cap.:	679	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	508	xxxx	xxxx	xxxxx
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	266	201	xxxxx	195	199	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.6	xxxx	12.2	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	C	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			19.2			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

****

Street Name:	Cedar Avenue						Project Access #2					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	54	0	0	89	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	961	0	0	1037	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1011	0	0	1091	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1011	0	0	1091	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	548	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	486	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	486	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.4	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.4			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Cedar Avenue (NS) at Project Access #2 (EW) - #8

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

Street Name:	Cedar Avenue						Project Access #2					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	0	83	0	0	59	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1074	0	0	979	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1131	0	0	1031	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1131	0	0	1031	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	516	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	509	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	509	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.1			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

Street Name:	Cedar Avenue						Project Access #3					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	54	0	0	85	4	0	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	961	0	0	1033	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1011	0	0	1087	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1011	0	0	1087	4	0	0	1	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	546	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	487	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	487	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.4	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.4			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Cedar Avenue (NS) at Project Access #3 (EW) - #9

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

Street Name:	Cedar Avenue									Project Access #3												
Approach:	North Bound					South Bound					East Bound					West Bound						
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R		
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign						
Rights:	Include					Include					Include					Include						
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0		
Volume Module:																						
Base Vol:	0	972		0		0	902		0		0		0		0	0		0		0		
Growth Adj:	1.02	1.02		1.02		1.02	1.02		1.02		1.02		1.02		1.02	1.02		1.02		1.02		
Initial Bse:	0	991		0		0	920		0		0		0		0	0		0		0		
Added Vol:	0	83		0		0	59		2		0		0		2	0		0		0		
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0		
Initial Fut:	0	1074		0		0	979		2		0		0		2	0		0		0		
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00		
PHF Adj:	0.95	0.95		0.95		0.95	0.95		0.95		0.95		0.95		0.95	0.95		0.95		0.95		
PHF Volume:	0	1131		0		0	1031		2		0		0		2	0		0		0		
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0		
FinalVolume:	0	1131		0		0	1031		2		0		0		2	0		0		0		
Critical Gap Module:																						
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx			6.9	xxxxx	xxxx		xxxxx			
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx			3.3	xxxxx	xxxx		xxxxx			
Capacity Module:																						
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx			516	xxxx	xxxx		xxxxx			
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx			509	xxxx	xxxx		xxxxx			
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx			509	xxxx	xxxx		xxxxx			
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx			0.00	xxxx	xxxx		xxxx			
Level Of Service Module:																						
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx			0.0	xxxx	xxxx		xxxxx			
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx			12.1	xxxxx	xxxx		xxxxx			
LOS by Move:	*	*		*		*	*		*		*	*			B	*	*		*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT		
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx			xxxxx	xxxx	xxxx		xxxxx			
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx			xxxxx	xxxxx	xxxx		xxxxx			
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx			xxxxx	xxxxx	xxxx		xxxxx			
Shared LOS:	*	*		*		*	*		*		*	*			*	*	*		*			
ApproachDel:	xxxxxx					xxxxxx					12.1					xxxxxx						
ApproachLOS:	*					*					B					*						

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.4]

Street Name:	Cedar Avenue						Project Access #4					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	889	0	0	929	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	907	0	0	948	0	0	0	0	0	0	0
Added Vol:	0	54	0	0	71	15	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	961	0	0	1019	15	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1011	0	0	1072	16	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1011	0	0	1072	16	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	544	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	488	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	488	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.4	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.4			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 Cedar Avenue (NS) at Project Access #4 (EW) - #10

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

Street Name:	Cedar Avenue						Project Access #4					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	0	83	0	0	54	7	0	0	5	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1074	0	0	974	7	0	0	5	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1131	0	0	1025	7	0	0	5	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1131	0	0	1025	7	0	0	5	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	516	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	509	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	509	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.1			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.3]

Street Name:	Cedar Avenue									Project Access #5								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	889		0		0	929		0		0		0		0	0		0		0
Growth Adj:	1.02	1.02		1.02		1.02	1.02		1.02		1.02		1.02		1.02	1.02		1.02		1.02
Initial Bse:	0	907		0		0	948		0		0		0		0	0		0		0
Added Vol:	0	54		0		0	69		4		0		0		1	0		0		0
PasserByVol:	0	0		0		0	0		0		0		0		0	0		0		0
Initial Fut:	0	961		0		0	1017		4		0		0		1	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.95	0.95		0.95		0.95	0.95		0.95		0.95		0.95		0.95	0.95		0.95		0.95
PHF Volume:	0	1011		0		0	1070		4		0		0		1	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
FinalVolume:	0	1011		0		0	1070		4		0		0		1	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		6.9	xxxxx		xxxx		xxxxx
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		3.3	xxxxx		xxxx		xxxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		537	xxxx		xxxx		xxxxx
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		493	xxxx		xxxx		xxxxx
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		493	xxxx		xxxx		xxxxx
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx		0.00	xxxx		xxxx		xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		0.0	xxxx		xxxx		xxxxx
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		12.3	xxxxx		xxxx		xxxxx
LOS by Move:	*	*		*		*	*		*		*		*		B	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx		xxxxx	xxxx		xxxx		xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx		xxxxx	xxxxx		xxxx		xxxxx
Shared LOS:	*	*		*		*	*		*		*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					12.3					xxxxxx				
ApproachLOS:	*					*					B					*				

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour - With Improvements

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #11 Cedar Avenue (NS) at Project Access #5 (EW) - #11

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.1]

****

Street Name:	Cedar Avenue						Project Access #5					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 0			0 0 1 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	972	0	0	902	0	0	0	0	0	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	991	0	0	920	0	0	0	0	0	0	0
Added Vol:	0	83	0	0	57	2	0	0	2	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1074	0	0	977	2	0	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	1131	0	0	1028	2	0	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1131	0	0	1028	2	0	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	515	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	510	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	510	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.1			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

Cycle (sec): 95 Critical Vol./Cap.(X): 0.486
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: OPTIMIZED Level Of Service: C

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0 1 1 0			1 0 1 1 0			0 1 0 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	44	700	49	65	832	32	55	80	56	57	65	134
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	45	714	50	66	849	33	56	82	57	58	66	137
Added Vol:	3	31	3	32	38	0	6	1	-1	3	8	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	745	53	98	887	33	62	83	56	61	74	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	59	919	65	121	1093	40	77	102	69	75	92	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	919	65	121	1093	40	77	102	69	75	92	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	59	919	65	121	1093	40	77	102	69	75	92	189
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.87	0.13	1.00	1.93	0.07	0.44	0.56	1.00	0.47	0.53	1.00
Final Sat.:	1700	3361	239	1700	3472	128	753	1002	1800	792	962	1800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.07	0.31	0.31	0.10	0.10	0.04	0.10	0.10	0.11
Crit Moves:	****				****							****
Green/Cycle:	0.11	0.44	0.44	0.17	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.33	0.62	0.62	0.42	0.62	0.62	0.31	0.31	0.12	0.29	0.29	0.32
Delay/Veh:	40.5	21.2	21.2	36.2	17.6	17.6	24.3	24.3	22.5	24.1	24.1	24.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	21.2	21.2	36.2	17.6	17.6	24.3	24.3	22.5	24.1	24.1	24.4
LOS by Move:	D	C	C	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	12	12	4	12	12	4	4	1	4	4	4

Note: Queue reported is the number of cars per lane.

Bloomington Option C
Opening Year (2018) With Ambient and Cumulative and Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #12 Cedar Avenue (NS) at Jurupa Avenue (EW) - #12

****

Cycle (sec): 85 Critical Vol./Cap.(X): 0.574
Loss Time (sec): 6 (Y+R=3.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: OPTIMIZED Level Of Service: C

****

Street Name:	Cedar Avenue						Jurupa Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	31	31	31	31	31	31
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	68	849	72	119	741	42	69	150	63	56	67	54
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	69	866	73	121	756	43	70	153	64	57	68	55
Added Vol:	1	39	2	24	35	0	15	0	-1	3	4	29
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	905	75	145	791	43	85	153	63	60	72	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	76	978	82	157	855	46	92	165	68	65	78	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	978	82	157	855	46	92	165	68	65	78	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	978	82	157	855	46	92	165	68	65	78	91
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.85	0.15	1.00	1.90	0.10	0.37	0.63	1.00	0.47	0.53	1.00
Final Sat.:	1700	3323	277	1700	3415	185	631	1131	1800	796	957	1800
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.29	0.09	0.25	0.25	0.15	0.15	0.04	0.08	0.08	0.05
Crit Moves:		****		****				****				
Green/Cycle:	0.18	0.43	0.43	0.13	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
Volume/Cap:	0.25	0.69	0.69	0.69	0.65	0.65	0.40	0.40	0.10	0.22	0.22	0.14
Delay/Veh:	30.3	20.9	20.9	43.4	22.6	22.6	20.5	20.5	17.9	18.9	18.9	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	20.9	20.9	43.4	22.6	22.6	20.5	20.5	17.9	18.9	18.9	18.2
LOS by Move:	C	C	C	D	C	C	C	C	B	B	B	B
HCM2kAvgQ:	2	12	12	6	11	11	5	5	1	3	3	2

****

Note: Queue reported is the number of cars per lane.

APPENDIX E

Traffic Signal Warrant Worksheet

PEAK HOUR VOLUME WARRANT
(Rural Areas)

OY + A + C + P

Major Street Name = **Cedar Avenue**

Total of Both Approaches (VPH) = **2058**

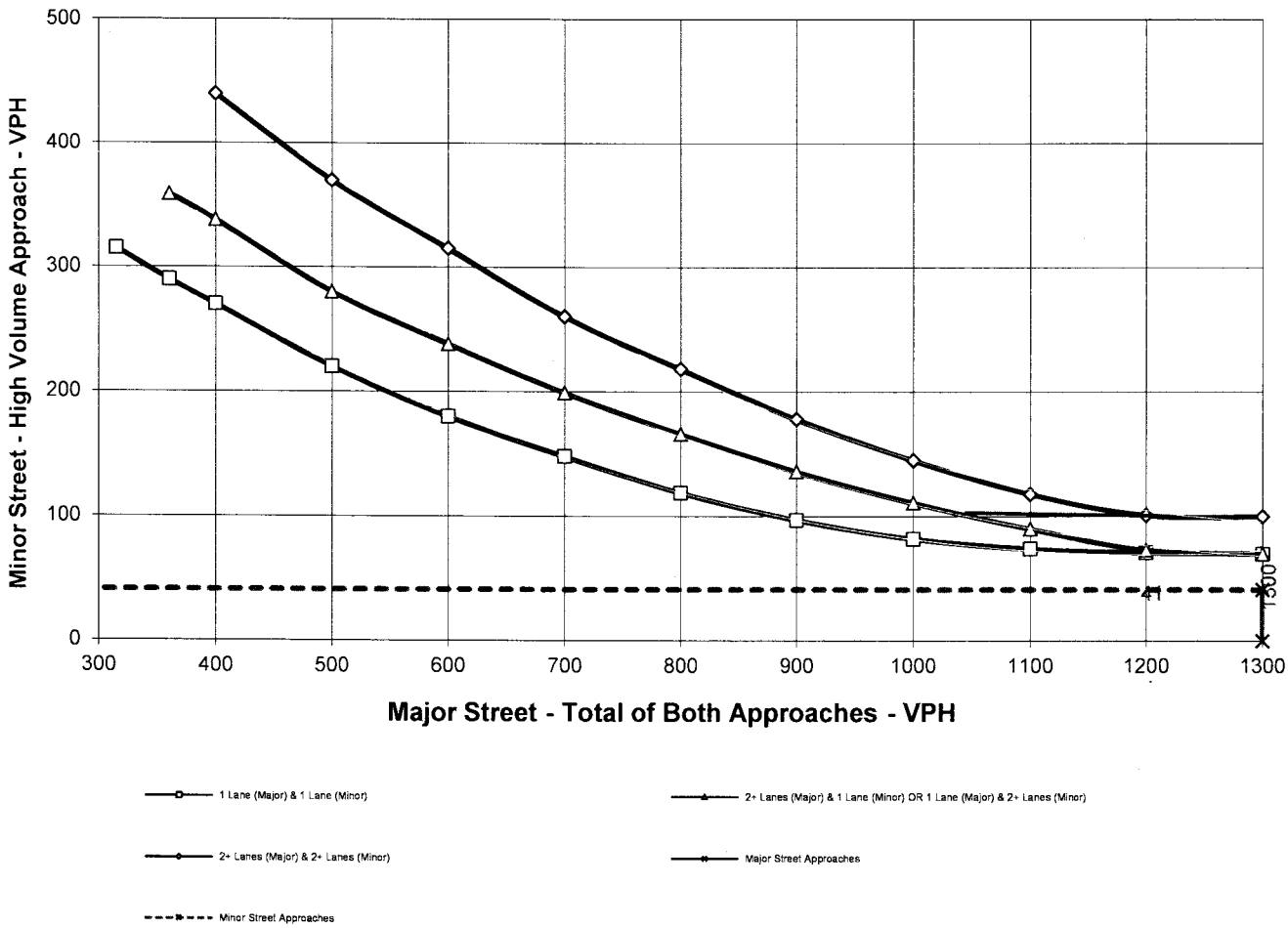
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Project Access #1**

High Volume Approach (VPH) = **41**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

APPENDIX F

Preliminary Construction Cost Estimates
For Congestion Management Program

PRELIMINARY CONSTRUCTION COST ESTIMATES
FOR
CONGESTION MANAGEMENT PLAN

Add One Lane Each Direction on Freeway	
Asphalt Concrete Pavement	$2,300,000 Per Mile
Portland Cement Concrete Pavement	$2,800,000 Per Mile
Includes: Excavation Paving Section Barrier Shoulder Upgrade Drainage System Traffic Control Mobilization @10% Design @11% Construction Mgt. @12.5%	**Excludes:** Environmental Costs Right of Way Widening of Bridge Structures Added Retaining Walls Added Sound Walls

Widen Existing UC Structures	
Total Cost =	$160 Per Square Foot
Includes: Structure Mobilization @10% Design @11% Construction Mgt. @12.5%	**Excludes:** Environmental Costs Right of Way Traffic Control Ramp Modifications Signal/Lighting Up Grades Drainage Upgrades Added Retaining Walls Added Sound Walls

Diamond Interchanges			
$10,000,000	EACH	NEW IC	Minimal Row/Environmental
$15,000,000	EACH	NEW IC	Includes Row/Environmental
$20,000,000	EACH	EXISTING	Minimal Row/Environmental
$25,000,000	EACH	EXISTING	Includes Row/ Environmental

Includes: Structure Retaining Walls Soil Nail Walls Drainage System Ramps Mobilization @ 10% Design @ 11% Construction Mgt. @ 12.5%	**Excludes:** As listed

Retaining Walls

Height Feet	Structure Cost $/LF	Mobilization Design Constr. Mgt. $/LF	Total $/LF
4	$190	$70	$260
6	$260	$90	$350
8	$380	$140	$520
10	$430	$150	$580
12	$480	$170	$650
14	$590	$210	$800
16	$660	$240	$900
	Excludes: Environmental Costs Right of Way		

12' High Sound Walls (Masonry Block on Footing)

Structure Cost $/Mile	Mobilization Design Constr. Mgt. $/Mile	Total $/Mile
$800,000	$300,000	$1,100,000

Widen Conventional Highway

1. Add one outside lane (Work includes earthwork, modify existing drainage system and construct AC shoulder section. Asphalt Concrete Pavement	$1,000,000/Mile
2. Add one outside lane each direction (Work includes earthwork, modify existing drainage system and construct AC shoulder section) Asphalt Concrete Pavement	$2,000,000/Mile
With Median Concrete Barrier	$2,200,000/Mile
With Median Double Thrie Beam Barrier	$2,300,000/Mile

Local Interchange Improvements

1. New Interchange	
Urban Interchange	$10,000,000 to $17,000,000
Partial – Cloverleaf Interchange (Work includes new OC structure, earthwork, signal)	$6,000,000
Diamond Interchange (Work includes new OC structure, earthwork, signal)	$5,000,000

Local Interchange Improvements CONT...		
2.	Reconstruct Existing Interchange	
	Realign and widen existing ramps (to 2 lanes)	$750,000/Each Ramp
	Construct Loop on – ramps (Does not include realigning existing ramp)	$700,000/Each Ramp
	Upgrade existing Diamond IC to Partial – Cloverleaf	$6,000,000
3.	Improve Existing Interchange	
	Widen ramps (From one to two lanes)	$350,000/Each Ramp
	Widen existing OC structure	$110/Sq. Ft.
	Signalize ramp intersection	$90,000/Location
	Upgrade existing signal at ramp terminal	$75,000/Intersection
	Upgrade existing signal at ramp terminal (Add lights only)	$25,000/Each
4.	Ramp Metering System	$60,000/Each location
Intersection Improvements		
1.	Signalization of local intersection (with some roadwork)	$250,000
2.	Upgrade existing intersection signalization	$75,000
3.	Upgrade existing Traffic Controller/Assembles	$40,000/Each
4.	Install new signal	$90,000/location
5.	Add signal heads	$25,000/Intersection
6.	Construct left – turn lane (240' long)	$50,000/Each Location
7.	Street widening (12' wide) (Pavement only)	$180,000/Mile
8.	Curb and gutter (Type A2-8)	$15/LF

Other Improvements	
1. Construct new OC structure (Does not include roadway work)	$100/Sq. Ft.
2. Construct Retaining Walls (Type 1)	$285/LF (H=8') $360/LF (H=10') $460/LF (H=12') $560/LF (H=14')
3. Construct Soundwall	$1,000,000/Mile (H=12')
4. Traffic Management Plan	10% of total construction costs

NOTE: This cost estimate does not include the following items:

1. R/W engineering, appraisal, acquisition and utilities relocation costs.
2. Minor items and supplemental work (10%).
3. Mobilization (10%).
4. Contingencies (25%).
5. Landscaping costs.

General Note: **When adding a through lane, the minimum distance is 600' approach and 600' departure to the next intersection.**

Kunzman Associates, Inc.

OVER 40 YEARS OF EXCELLENT SERVICE

1111 Town & Country Road, Suite 34
Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

KUNZMAN ASSOCIATES, INC.

BLOOMINGTON INDUSTRIAL FACILITY

TRUCK CIRCULATION ANALYSIS

August 31, 2016

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

KUNZMAN ASSOCIATES, INC.

BLOOMINGTON INDUSTRIAL FACILITY

TRUCK CIRCULATION ANALYSIS

August 31, 2016

Prepared by:

Robert Kunzman
Carl Ballard, LEED GA
William Kunzman, P.E

William Kunzman

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. KUNZMAN
No. TR0056
TRAFFIC
STATE OF CALIFORNIA

1111 Town & Country Road, Suite 34
Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

JN 5737b

August 31, 2016

Mr. Jeremy Mape, Director of Acquisitions
WESTERN REALCO
500 Newport Center Drive, Suite 630
Newport, CA 92660

Dear Mr. Mape:

INTRODUCTION

The firm of Kunzman Associates, Inc. is pleased to provide this truck circulation analysis for the Bloomington Industrial Facility project in the County of San Bernardino. Kunzman Associates, Inc. has been asked to conduct an analysis of the existing and future street system to determine if truck traffic from the project can properly circulate on the study area intersections. The truck circulation analysis supplements the Bloomington Industrial Facility Traffic Impact Analysis prepared by Kunzman Associates, Inc. (August 31, 2016). Figure 1 shows the project location/study area intersections and Figure 2 shows the project site plan.

This report summarizes our methodology, analysis and findings. We trust that the findings, which are summarized in the front of the report, will be of immediate as well as continuing value to you and the County of San Bernardino.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

FINDINGS

1. The identified off-site right turns are currently built with fifty (50) foot right turn radii. The identified on-site right turns are projected to be constructed with fifty (50) foot right turn radii. There are no right turn radii issues within the study area.

2. There are no identified U-turns that project trucks are projected to make based upon the truck trip distributions. There are no U-turn radius issues within the study area.

3. Left turns on a typical roadway pose a greater turning radius than required for a truck to appropriately circulate. There are no left turn radii issues within the study area.

4. The project site truck access points will be constructed to provide adequate access width on-site and off-site.

5. The portion of the study area utilized by project trucks that currently provides a soft shoulder, located on the north side of Jurupa Avenue, will be improved by the project to its ultimate half-section width. This improvement will eliminate the existing soft shoulder.

MINIMUM CURB RETURN RADIUS

Based on the County of San Bernardino Standard Plan (Curb Return With Sidewalk Ramp, Plan 110, page 1 of 2), a Local street to a Local street should have a twenty (20) foot minimum curb return radius, a Local street to a Collector street should have a thirty (30) foot minimum curb return radius, a Secondary Highway (residential) or greater should have a thirty-five (35) foot minimum curb return radius, and a Secondary Highway (commercial/industrial) or greater should have a fifty (50) foot minimum curb return radius.

It is recommended that all truck facilities utilize a fifty (50) foot minimum turning radius for right turns. The County of San Bernardino recognizes that a fifty (50) foot minimum turning radius is adequate for truck circulation on the public streets. This minimum turning radius is based on numerous truck studies and real life observations. If a smaller right turn radius is used, there is an increased chance that the turning vehicle will not be able to maintain its lane/not cross over into an opposing traffic lane and the trailing wheels of the trailer will contact or even drive over the curb. Both of these situations are not desirable.

PROJECT TRUCK TRIP DISTRIBUTION

The truck trip distributions have been obtained from the Bloomington Industrial Facility Traffic Impact Analysis prepared by Kunzman Associates, Inc. (August 31, 2016). The truck distributions have been discussed, reviewed, modified, and approved by the County of San Bernardino Traffic Engineer. Figures 3 and 4 show the project truck trip distributions for the project site.

EXISTING GEOMTRICS

Existing intersection geometrics have been obtained from the Bloomington Industrial Facility Traffic Impact Analysis and were field verified.

FUTURE GEOMETRICKS

Future intersection geometrics have been obtained from the Bloomington Industrial Facility Traffic Impact Analysis. The future intersection geometrics include site improvements projected to be completed by the project and include planned Improvements to the Cedar Avenue/I-10 Freeway interchange. The planned improvements to the Cedar Avenue/I-10 Freeway interchange are part of the San Bernardino Associated Governments (SANBAG) Development Mitigation Nexus Study.

POTENTIAL TRUCK RIGHT TURNS

Based on Figures 3 and 4, the right turns that project trucks are projected to make are at the following locations:

Project Access/Oak Street (NS) at:
- Jurupa Avenue (EW) - #2
  - Westbound Right

Cedar Avenue (NS) at:
- I-10 Freeway EB Ramps (EW) - #3
  - Northbound Right
  - Eastbound Right
- Project Access #1 (EW) - #7
  - Eastbound Right
  - Southbound Right
  - Project Access #4 (EW) - #10
  - Eastbound Right
  - Southbound Right
- Jurupa Avenue (EW) - #12
  - Eastbound Right

The identified off-site right turns are currently built with fifty (50) foot right turn radii. The identified on-site right turns listed above are projected to be constructed with fifty (50) foot right turn radii. There are no right turn radii issues within the study area.

POTENTIAL TRUCK U-TURNS

Based on Figures 3 and 4, there are no identified U-turns that project trucks are projected to make based upon the truck trip distributions. There are no U-turn radius issues within the study area.

POTENTIAL TRUCK LEFT TURNS

Based on Figures 3 and 4, the left turns that project trucks are projected to make are at the following locations:

Project Access/Oak Street (NS) at:
- Jurupa Avenue (EW) - #2
  - Southbound Left

Cedar Avenue (NS) at:
- I-10 Freeway WB Ramps (EW) - #3
  - Northbound Left
  - Westbound Left
- Project Access #1 (EW) - #7
  - Eastbound Left
  - Northbound Left
- Jurupa Avenue (EW) - #12
  - Eastbound Left
  - Northbound Left

Left turns on a typical two-way roadway naturally poses a greater turning radii than required for a truck to appropriately circulate because the complimentary right turn movement occupies the area on the inside of the turning movement requiring the left turn radii to be the right turn radii plus the lane width equaling a much greater minimum turning radii by default. There are no left turn radii issues within the study area.

ACCESS POINT ROADWAY WIDTHS

All on-site truck access points and drive aisles are forty (40) feet wide. All on-site passenger car access points are thirty (30) feet wide. This width will accommodate the proposed developments projected truck traffic.

Cedar Avenue adjacent to the project accesses is currently a four lane divided roadway. The minimum width is approximately 26 feet in each direction. This roadway width, along with fifty (50) foot right turn radii, will easily accommodate the projects projected truck traffic by allowing trucks to enter or exit the site without crossing over into an apposing traffic lane or clipping the curb with the trailing wheels of the trailer.

Jurupa Avenue adjacent to the project access is currently a two lane undivided roadway. The minimum width, once the project is constructed, will be approximately 26 feet along the projects side of the roadway. This roadway width, along with fifty (50) foot right turn radii, will easily accommodate the projects projected truck traffic by allowing trucks to enter or exit the site without crossing over into an apposing traffic lane or clipping the curb with the trailing wheels of the trailer.

EXISTING RAISED CURBS

Within the study area, the roadways that will be utilized by the project truck traffic will all provide raised curbs with the exception of the north and south sides of Jurupa Avenue. Jurupa Avenue currently has small segments of raised curbs within the study area where project trucks will be present.

The only portion of the study area, utilized by project trucks that currently provided a soft shoulder, is the north side of Jurupa Avenue.

FUTURE RAISED CURBS

Within the study area, the roadways that will be utilized by the project truck traffic will all include raised curbs and will continue to provide raised curbs with the exception of the south side of Jurupa Avenue. Jurupa Avenue currently has small segments of raised curbs within the study area where project trucks will be present.

The portion of the study area utilized by project trucks that currently provides a soft shoulder, located on the north side of Jurupa Avenue will be improved by the project to its ultimate half section width. This improvement will eliminate the existing soft shoulder.

RECOMMENDED MITIGATION MEASURES

No mitigation measures are recommended based on the analysis conducted in this truck circulation analysis.

CONCLUSIONS

The identified off-site right turns are currently built with fifty (50) foot right turn radii. The identified on-site right turns are projected to be constructed with fifty (50) foot right turn radii. There are no right turn radii issues within the study area.

There are no identified U-turns that project trucks are projected to make based upon the truck trip distributions. There are no U-turn radius issues within the study area.

Left turns on a typical roadway poses a greater turning radius than required for a truck to appropriately circulate. There are no left turn radii issues within the study area.

The project site truck access points will be constructed to provide adequate access width on-site and off-site.

The portion of the study area utilized by project trucks that currently provides a soft shoulder, located on the north side of Jurupa Avenue will be improved by the project to its ultimate half section width. This improvement will eliminate the existing soft shoulder.

It has been a pleasure to service your needs on this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 973-8383.

Sincerely,

KUNZMAN ASSOCIATES , INC.

Robert Kunzman

Robert Kunzman
Principal Associate

JN 5737b

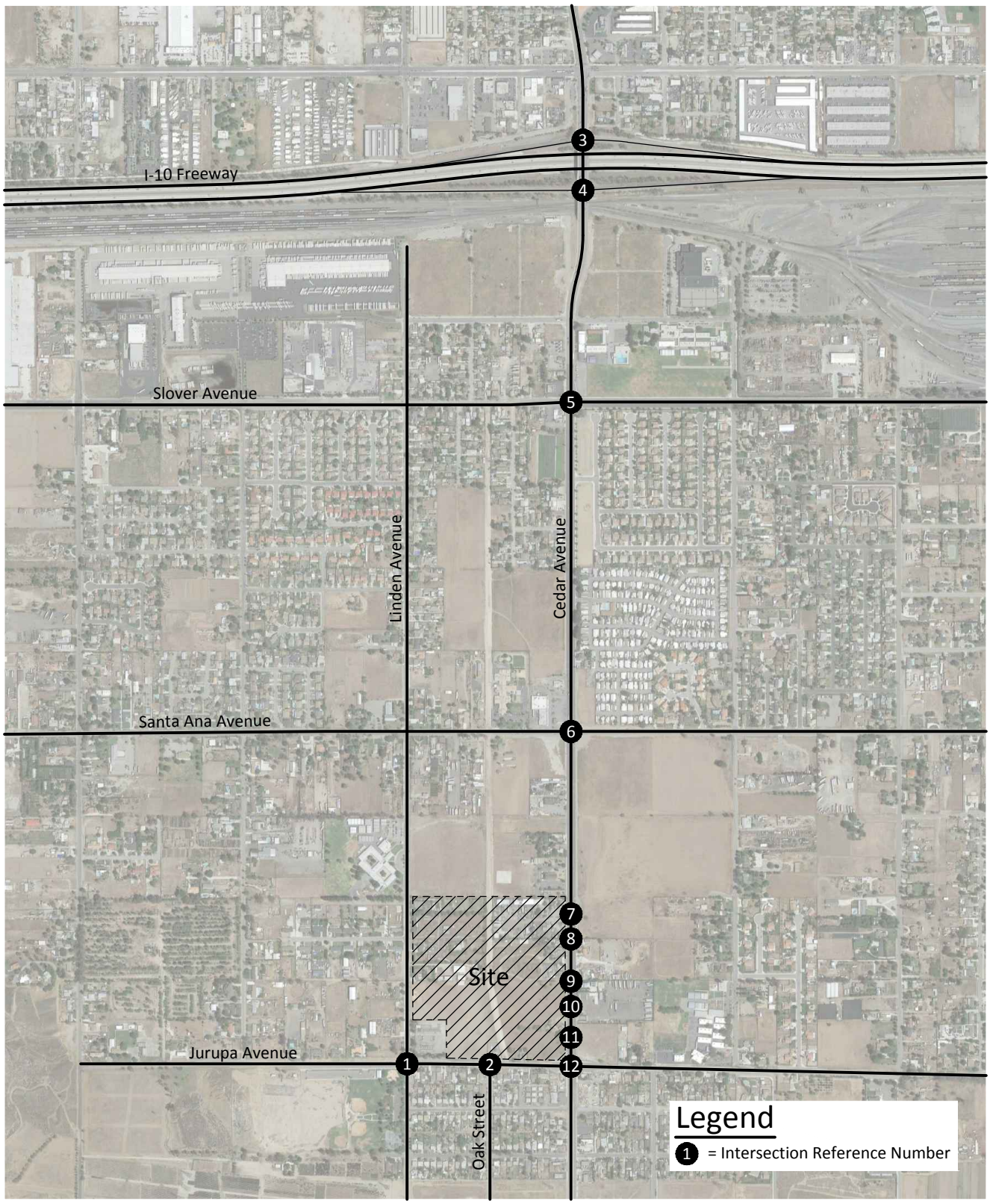
REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. KUNZMAN
No. TR0056
TRAFFIC
STATE OF CALIFORNIA

KUNZMAN ASSOCIATES, INC.

William Kunzman

William Kunzman, P.E.
Principal

Figure 1
Project Location Map



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737b

Figure 2
Site Plan

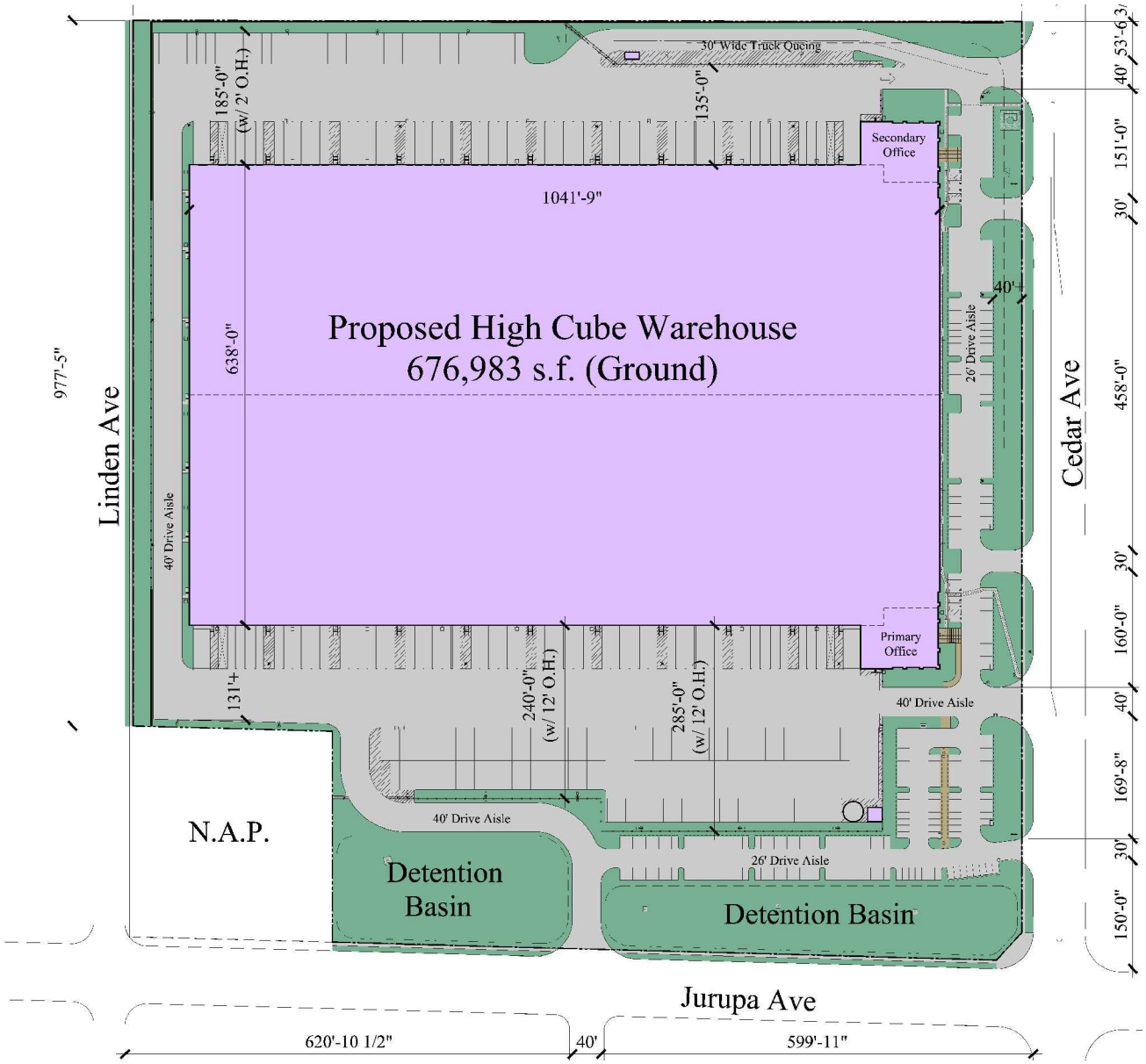
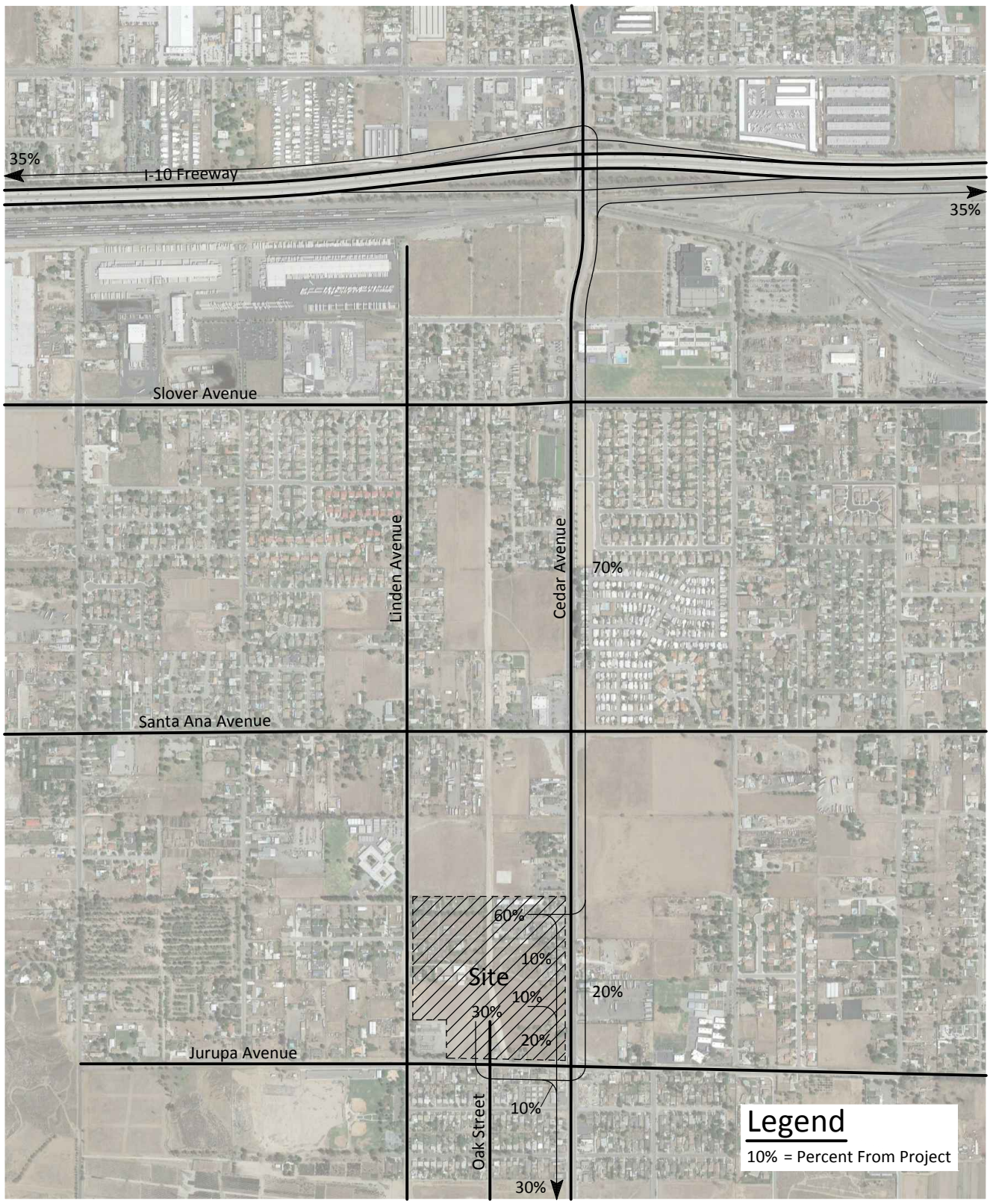


Figure 3
Project Outbound Trip Distribution - Trucks

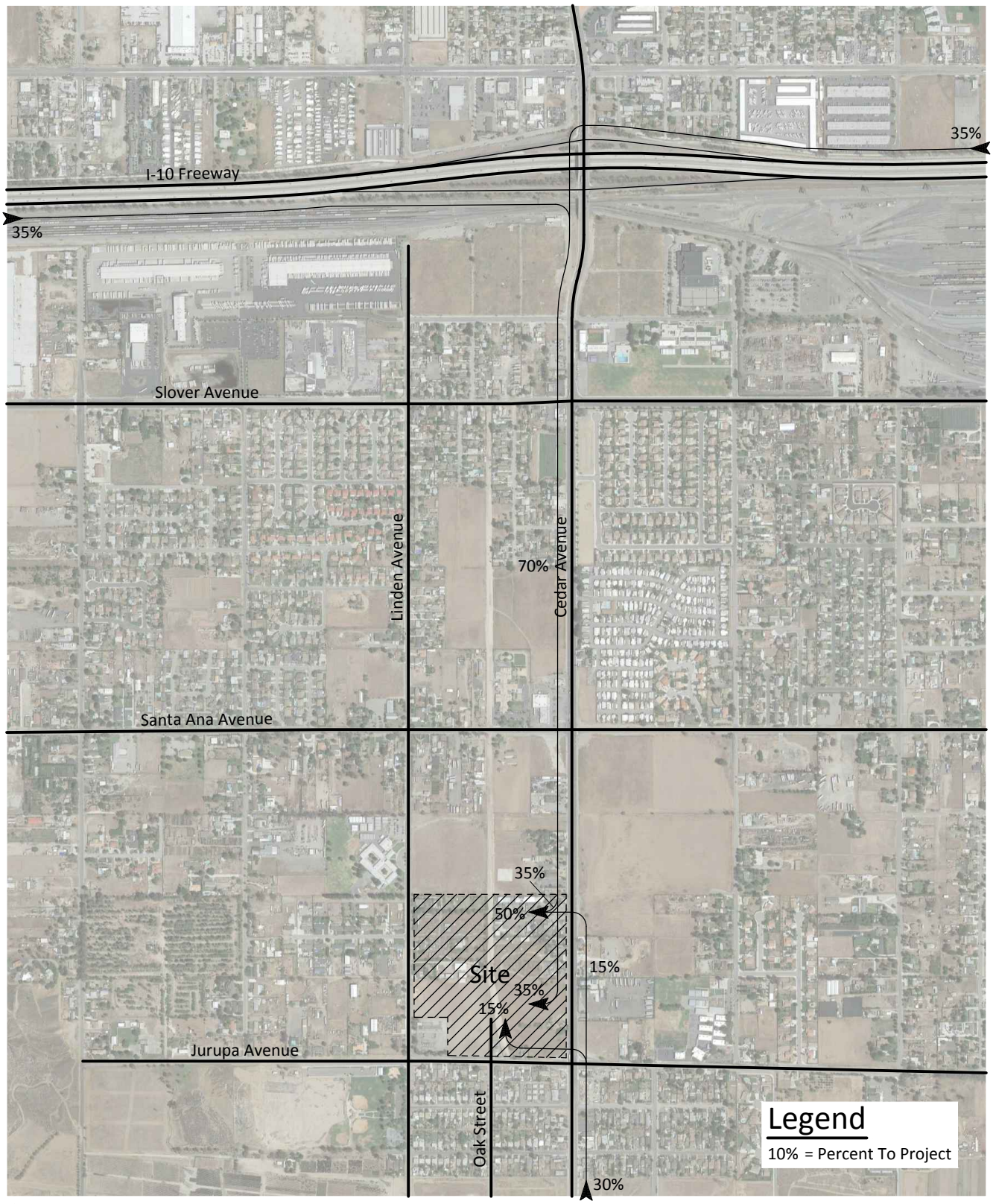


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737b

Figure 4
Project Inbound Trip Distribution - Trucks



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 5737b

APPENDIX A

GLOSSARY OF TRANSPORTATION TERMS

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

Kunzman Associates, Inc.

OVER 40 YEARS OF EXCELLENT SERVICE

1111 Town & Country Road, Suite 34
Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

Appendix G
Biological Resources

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

Biological Resources Technical Report
Bloomington Distribution Project

Prepared for:

Western Realco
500 Newport Center Drive
Newport Beach, California 92660
Contact: Jeremy Mape

Prepared by:

DUDEK
3685 Main Street, Suite 250
Riverside, California 92501
Contact: Shelah Riggs

SEPTEMBER 2016

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

1 INTRODUCTION 1
1.1 Project Location and Description 1
2 REGULATORY SETTING 7
2.1 Federal Regulations 7
2.2 State Regulations 8
2.3 County Regulations 9
3 METHODS 11
3.1 Literature Review 11
3.2 Field Reconnaissance 11
3.2.1 Vegetation Community and Land Cover Mapping 12
3.2.2 Flora 12
3.2.3 Fauna 12
3.2.4 Survey Limitations 12
4 ENVIRONMENTAL SETTING 15
4.1 Land Use 15
4.2 Topography/Hydrology 15
4.3 Climate 15
4.4 Soils 16
5 RESULTS 19
5.1 Vegetation Communities, Land Covers, and Floral Diversity 19
5.1.1 Non-Native Grassland 19
5.1.2 Agricultural Land 19
5.1.3 Developed/Disturbed Land 20
5.2 Floral Diversity 20
5.3 Faunal Diversity 20
5.4 Special-Status Plant Species 23
5.5 Special-Status Wildlife Species 26
5.5.1 Burrowing Owl 30
5.5.2 Cooper's Hawk 31
5.6 Jurisdictional Waters 31
5.7 Wildlife Corridors and Habitat Linkages 31
5.8 Nesting Birds 31

TABLE OF CONTENTS (CONTINUED)

Section **Page No.**

6 PROJECT IMPACTS 33
6.1 Impact BIO-1: Special-Status Species 34
6.1.1 Special-Status Plants 34
6.1.2 Special-Status Wildlife 35
6.2 Impact BIO-2: Sensitive Vegetation Communities 36
6.3 Impact BIO-3: Jurisdictional Waters 36
6.4 Impact BIO-4: Wildlife Corridors and Migratory Routes 37
6.5 Impact BIO-5: Local Policies or Ordinances 37
6.6 Impact BIO-6: Habitat Conservation Plan 37
7 CONCLUSION 39
8 REFERENCES 41

APPENDICES

A Plant and Wildlife Compendiums
B Photo Documentation
C Resumes

FIGURES

1 Regional Map 3
2 Vicinity Map 5
3 Soils Map 17
4 Vegetation Map 21

TABLES

1 Schedule of Surveys 11
2 Vegetation Communities 19
3 Special-Status Plant Species Potential to Occur on the Project Site 23
4 Special-Status Wildlife Species Potential to Occur on Project Site 27

1 INTRODUCTION

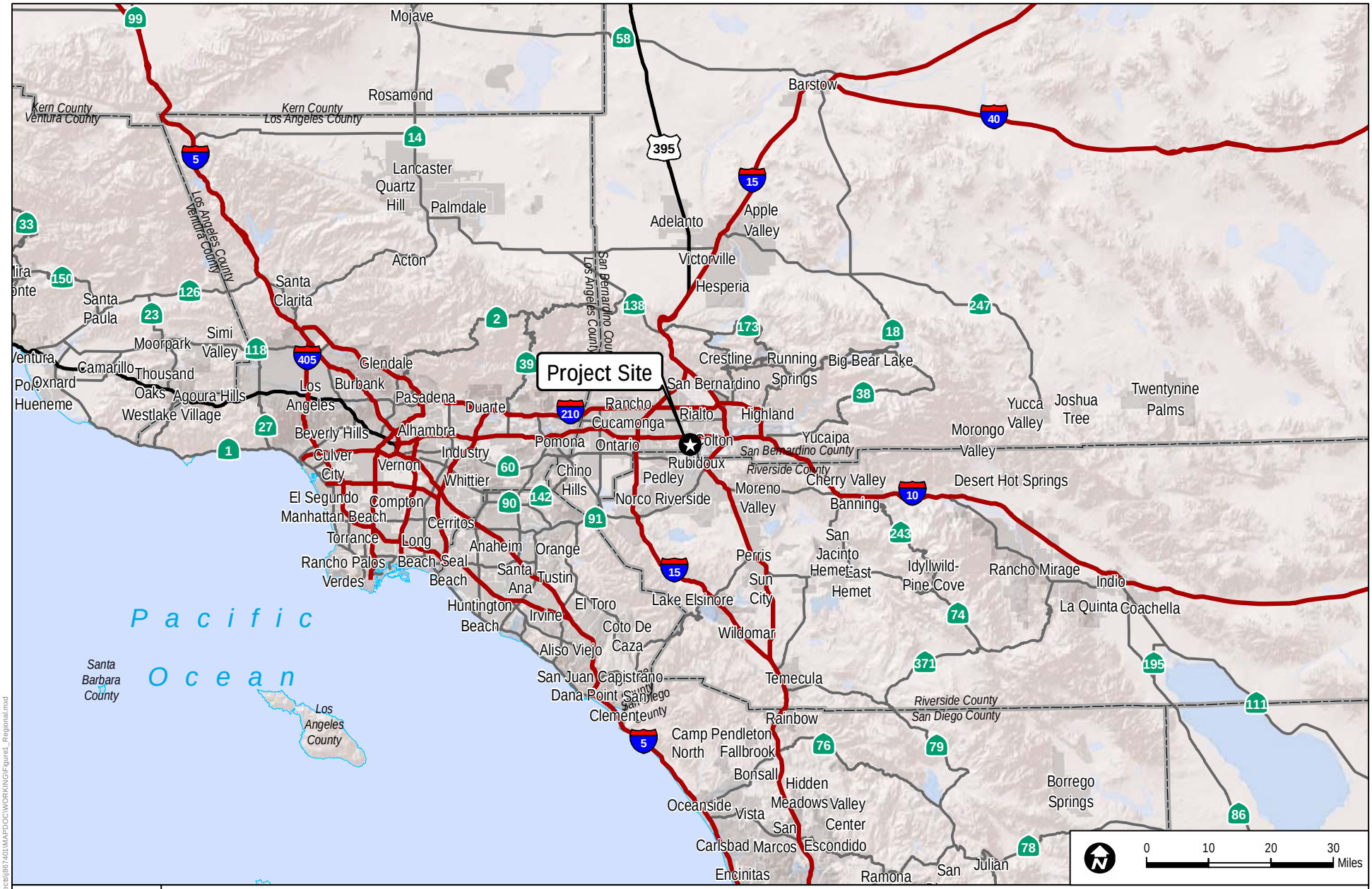
In February 2015, Dudek conducted a general biological survey for Western Realco's Bloomington Distribution project (project) site. This report includes the evaluation of impacts to biological resources from the project pursuant to California Environmental Quality Act (CEQA). Specifically, this report: (1) describes the existing conditions of biological resources within the project site in terms of vegetation, flora, wildlife, and wildlife habitats; (2) discusses potential impacts to biological resources that would result from development of the project; and (3) recommends mitigation measures for potential impacts to special-status biological resources, if necessary.

1.1 Project Location and Description

The project site is located within the unincorporated San Bernardino County area of Bloomington. Bloomington is located in between the Cities of Rialto and Fontana, just north of the San Bernardino and Riverside County line and approximately 1 mile south of Interstate 10 (Figure 1). The project site is located immediately west of Cedar Avenue, north of Jurupa Avenue, and east of Linden Avenue. It is within the U.S. Geological Survey (USGS) 7.5 minute map Fontana quadrangle, Section 27, Township 1 South, Range 5 West (Figure 2).

Western Realco is proposing to construct a single 676,983-square-foot distribution building within an approximately 35-acre property. The site would include two detention basins and landscaping along Cedar Avenue and Jurupa Avenue. There will be a total of 272 automobile parking stalls constructed for employee parking with access from Cedar Avenue and Jurupa Avenue. Truck access will be installed from Cedar Avenue, and a dockyard would include 138 trailer storage stalls, 4 grade level ramps, and 110 dock high doors.

INTENTIONALLY LEFT BLANK



DUDEK

8674

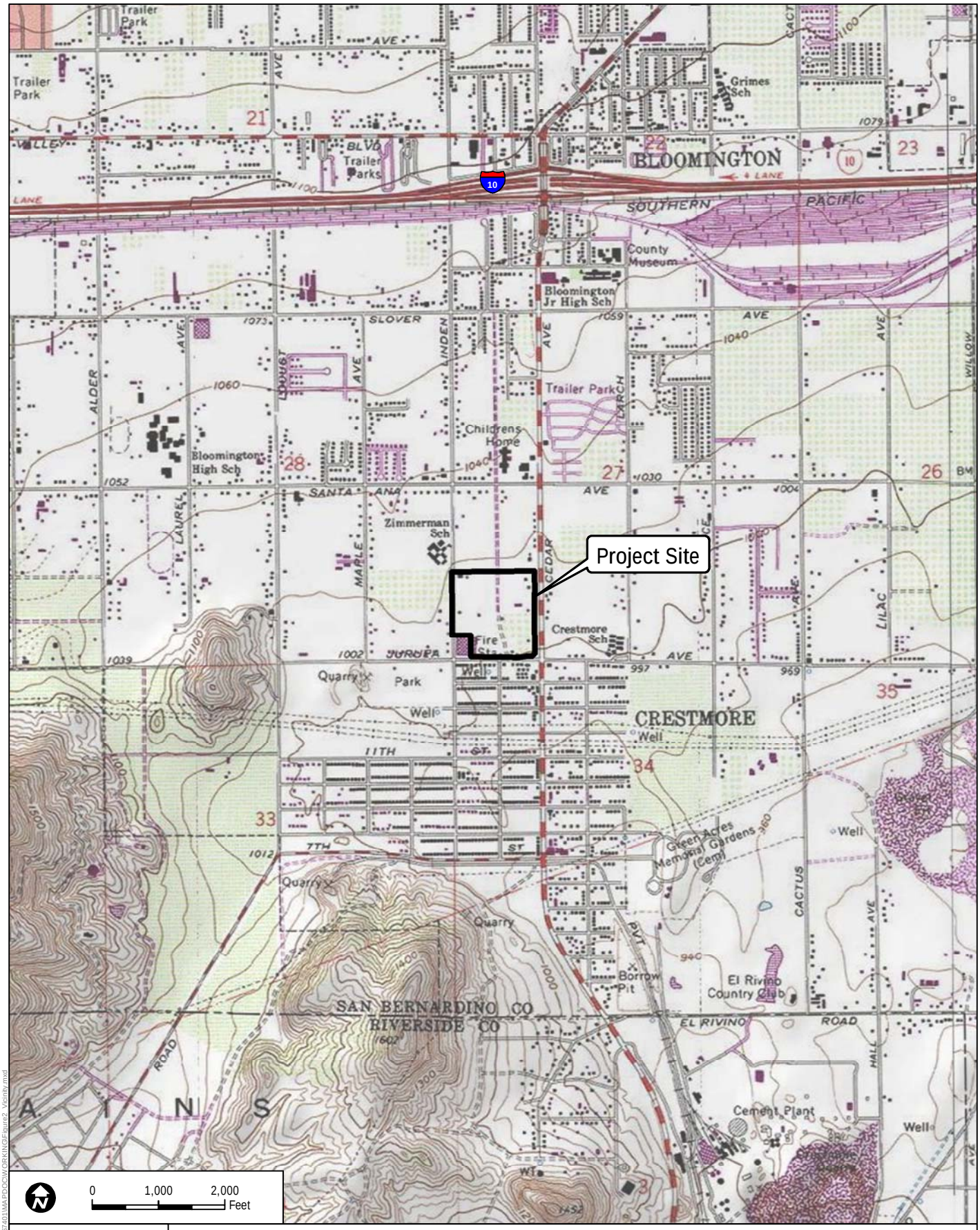
FIGURE 1

Regional Map

WESTERN REALCO - BLOOMINGTON, CA

File: \\dudek-files\GIS\Data\Projects\8674\01\MAPDOC\WORKING\Figure1_Regional.mxd

INTENTIONALLY LEFT BLANK



DUDEK

8674

SOURCE: USGS 7.5-Minute Series - Fontana Quadrangle.

FIGURE 2
Vicinity Map

WESTERN REALCO - BLOOMINGTON, CA

Document Path: Z:\Projects\8674\01\MAP\DOCWORKING\Figure2_Vicinity.mxd

INTENTIONALLY LEFT BLANK

2 REGULATORY SETTING

2.1 Federal Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species, and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. FESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under FESA, it is unlawful to take any listed species. "Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

FESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement.

FESA (16 U.S.C. Sections 1531 to 1599) is implemented by USFWS through a program that identifies and provides for protection of various species of fish, wildlife, and plants deemed to be in danger of or threatened with extinction. As part of this regulatory scheme, the FESA provides for designation of critical habitat, defined in FESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features "essential to the conservation of the species" are found and "which may require special management considerations or protection." Critical habitat may also include areas outside the current geographical area occupied by the species that are nonetheless "essential for the conservation of the species."

Under Section 4(f)(1) of FESA, USFWS is required to prepare recovery plans for newly listed species unless USFWS determines that such a plan will not promote the conservation of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) is an international treaty for the conservation and management of bird species. The MBTA makes it illegal to take, possess, buy, sell, purchase,

or barter any migratory bird listed in 50 CFR, Part 10 (USFWS 2002). The MBTA protects over 800 species of birds, including the burrowing owl (*Athene cunicularia*). This treaty is enforced in the United States by USFWS.

Clean Water Act

The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States under Section 404 of the federal Clean Water Act. Certain portions of the Clean Water Act are implemented by the State Water Resources Control Board and applicable Regional Water Quality Control Boards in California. The phrase "waters of the United States" is generally defined to include navigable waters as well as other waters (such as streams and seeps) and wetland waters that meet applicable regulatory criteria.

2.2 State Regulations

California Environmental Quality Act

Although endangered and threatened species are covered federal and state statutes, the CEQA Guidelines (Section 15380(b)) declare that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted. These guidelines require public agencies to undertake analyses to determine if projects would result in significant effects on candidate species that are not listed by either the USFWS or the California Department of Fish and Wildlife (CDFW). Species of Special Concern must also be considered during the environmental evaluation process for a proposed project. CEQA requires state agencies, local governments, and special districts to analyze and disclose impacts from proposed projects within California. Section 15380 of the CEQA Guidelines indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

California Fish and Game Code Sections 3503, 3503.5, and 3513

California Fish and Game Code regulations require that elements of a proposed project, particularly vegetation removal or construction near nests, be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS. Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

California Fish and Game Code 1600 – 1607 (Streambed Alteration Agreements)

Under sections 1600–1607 of the California Fish and Game Code, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes through Streambed Alteration Agreements. Jurisdiction is defined by the code as a "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (California Fish and Game Code, Section 1600 et seq.). A Streambed Alteration Agreement typically includes conditions for wildlife resources associated with a streambed.

2.3 County Regulations

San Bernardino County Development Code 88.03.010 (Plant Protection and Management)

Under section 88.03.010 of the San Bernardino County Development Code, the County regulates unincorporated areas of the County on property or combinations of property under private or public ownership. This provision applies to "the removal or relocation of regulated trees or plants and to any encroachment (such as grading) within the protected zone of a regulated tree or plant on all private land within unincorporated areas of the County." The intent is to:

a. Promote and sustain the health, vigor and productivity of plant life and aesthetic values within the County through appropriate management techniques.

b. Conserve the native plant life heritage for the benefit of all, including future generations.

c. Protect native trees and plants from indiscriminate removal and regulate removal activity.

d. Provide a uniform standard for appropriate removal of native trees and plants in public and private places and streets to promote conservation of these valuable natural resources.

e. Protect and maintain water productivity and quality in local watersheds.

f. Preserve habitats for rare, endangered or threatened plants and protect animals with limited or specialized habitats.

Section 88.01.040 of the San Bernardino County Development Code defines all regulated trees and plants as well as appropriate permits required for removal and conditions of approval.

INTENTIONALLY LEFT BLANK

3 METHODS

3.1 Literature Review

Prior to conducting the field investigation, a literature review was conducted to evaluate the environmental setting of the project site and to identify potential special-status biological resources that may be found on the site. The review included the Fontana 7.5-minute USGS quadrangle and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey. Additionally, a database query was conducted to identify special-status biological resources present or potentially present within the vicinity of the project site using the California Natural Diversity Database (CNDDB) (CDFW 2015) and California Native Plant Society's (CNPS's) *Inventory of Rare and Endangered Vascular Plants* (CNPS 2015). A 7-mile buffer around the project site was queried in the CNDDB using geographic information systems (GIS) software, and a "nine-quad" query was conducted of the CNPS. A nine-quad query includes the subject quadrangle of Fontana and the eight surrounding USGS quadrangles: Riverside East, Riverside West, Corona North, Guasti, Cucamonga Peak, Devore, San Bernardino North, and San Bernardino South.

3.2 Field Reconnaissance

The purpose of the general biological survey was to map vegetation communities on site; conduct a general inventory of plant and animal species detected by site, sound (calls), tracks, scat, or other signs; and determine the likelihood of occurrence of any special-status plant or wildlife species based on the presence/absence of suitable habitat and other natural history elements that might predict their occurrence.

In February 2015 Dudek Biologist Jessica Self conducted a general biological survey including vegetation mapping as well as the identification of wildlife and plant species on site. Table 1 lists the date, time and field conditions of the biological survey. The survey was limited to the project site boundaries due to surrounding development.

Table 1
Schedule of Surveys

Date	Hours	Personnel*	Focus	Conditions
2/24/15	0700-1100	JDS	General biological survey	47°F–63°F, 0% cc, 0–15 mph winds

JDS = Jessica D. Self; °F = ° Fahrenheit; cc = cloud cover; mph = miles per hour

The project site was methodically surveyed on foot, and all biological resources observed or detected were identified and inventoried. Potential for special-status plant species was assessed based on habitat and soil conditions that are known to support species occurring in the region.

Expected wildlife usage of the site was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area.

3.2.1 Vegetation Community and Land Cover Mapping

Vegetation communities and land uses within the project site were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet) aerial photograph field map of the project site. Following completion of the fieldwork, all vegetation polygons were digitized using ArcGIS and GIS coverage was created. Vegetation communities used in this report are classified using the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) with modifications made to account for site-specific differences.

3.2.2 Flora

All plant species encountered during the field surveys were identified and recorded. Those species that could not be identified immediately were brought into the laboratory for further investigation. Latin and common names for plant species with a California Rare Plant Rank (CRPR) follow the CNPS *Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2015). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2014), and common names follow the USDA NRCS Plants Database (NRCS 2014). General information regarding plant species, identification, and nomenclature was obtained from *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) and *The Flora of the Santa Ana River and Environs* (Clarke et al. 2007). Appendix A provides a Plant Compendium.

3.2.3 Fauna

Wildlife species observed or detected during field surveys by sight, calls, tracks, scat, or other signs were recorded. In addition to species actually observed, expected wildlife usage of the site was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. No trapping or focused surveys for special-status or nocturnal species was conducted. General information regarding wildlife species present in the region was obtained from Sibley (2000) for birds, Reid (2006) for mammals, and Stebbins (2003) for reptiles and amphibians. Appendix A provides a Wildlife Compendium.

3.2.4 Survey Limitations

The main survey limitation was accessibility to specific areas within the project site. Inaccessible areas included residences, fenced in junk yards, and a fenced agriculture field with llamas and goats grazing. For these areas, the biologist observed wildlife using binoculars and identified plant

species as precisely as possible (such as down to genus). However, some ornamental plant species were unidentifiable from a distance. Consequently, there may have been wildlife and plant species that were not identified. However, it is unlikely any special-status species occur within these areas as they were heavily developed and disturbed, thus drastically reducing the likelihood of an occurrence. However, burrowing owl burrows could potentially occur within the agriculture field that was inaccessible, but the biologist was unable to survey this area for potential burrows.

INTENTIONALLY LEFT BLANK

4 ENVIRONMENTAL SETTING

4.1 Land Use

The general vicinity surrounding the project site is developed with a mix of residential and rural residential uses. Single-family residential development occurs immediately adjacent to the site on the south and west. Open agricultural fields are directly north and northeast from the project site; an elementary school is to the northwest; Cedar Avenue runs directly along the eastern side of the site, with Jurupa Avenue along the south side and Linden Avenue along the west side of the site. Commercial property and open fields are east of the site, on the east side of Cedar Avenue.

The project site is disturbed with evidence of recent disking within open areas of the site. Multiple single-family homes and junk yards are present throughout the northern half of the site and three single-family homes are located in the southeastern portion of the site. A dirt road that looks to be an old channel now filled with soil runs north to south through the center of the project site.

4.2 Topography/Hydrology

The project site is in the San Bernardino valley with the San Bernardino Mountains approximately 9 miles to the north, La Loma Hills 2.7 miles to the southeast, Rattlesnake Mountain 0.6 mile to the south, and Mount Jurupa 1 mile to the southwest. The main water body in the vicinity is the Santa Ana River, which flows northeast to southwest approximately 2.5 miles southeast from the project site.

The site is relatively flat with elevation ranging from 1,005 to 1,030 feet above mean sea level. There is no primary drainage on site. However, upon interpretation of aerial photos, there is an old channel feature that runs through the center of the property. It starts north of the project site at Slover Avenue and terminates at Jurupa Avenue. This feature has since been filled with soil and now serves as a road through the property.

4.3 Climate

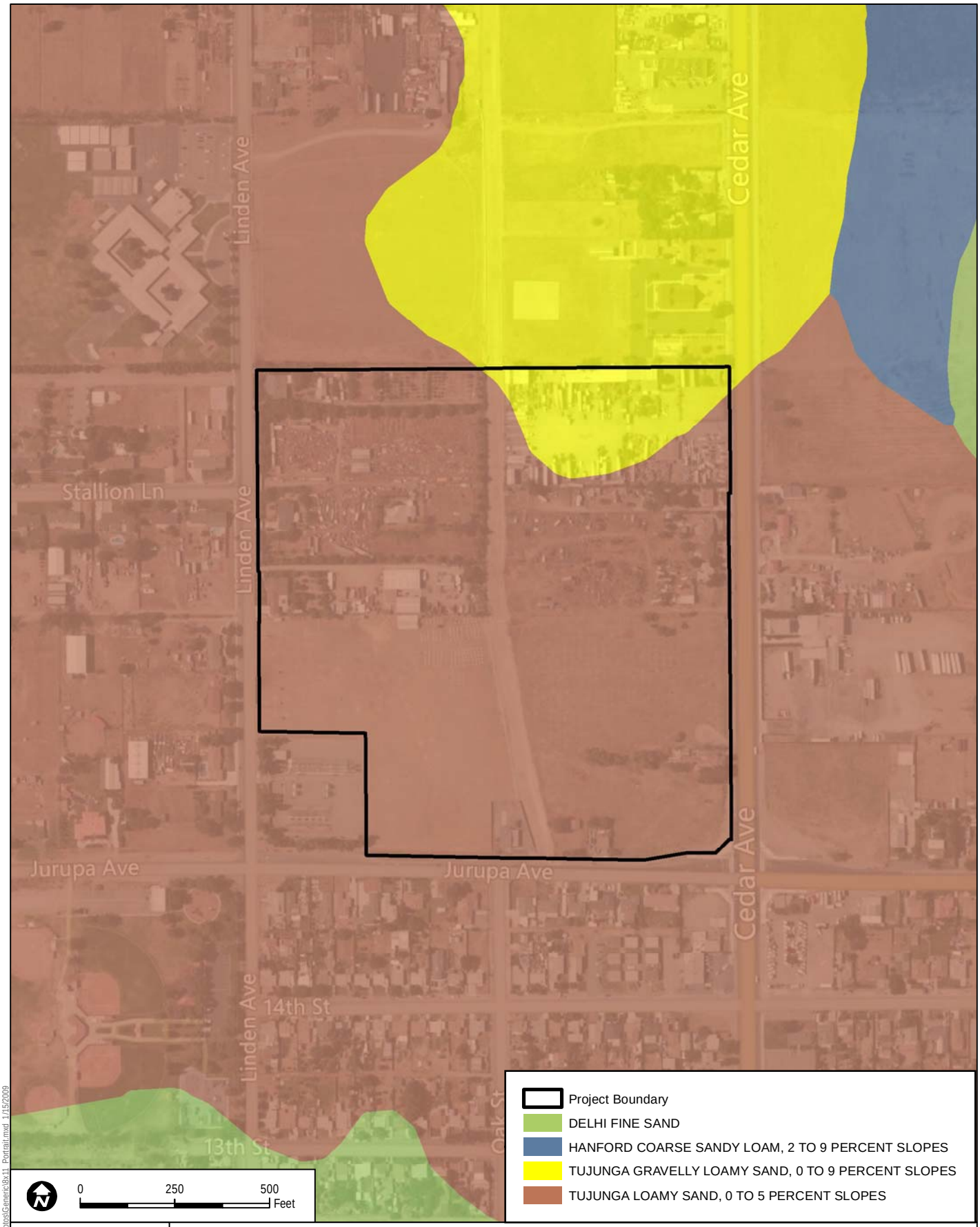
Bloomington experiences a Mediterranean type climate with cool, wet winters and dry, hot summers. Average yearly precipitation is 10.7 inches. Average summer highs are around 92° Fahrenheit (°F) with average lows around 61°F. In the winter, average highs are 67°F with lows around 42°F (NOAA 2015).

4.4 Soils

Tujunga gravelly sandy loam and Tujunga loamy sand soils are mapped within the project site (USDA 2015) (Figure 3). The description provided below regarding Tujunga series soils is summarized from NRCS (USDA 2015).

> The Tujunga series soils are located on alluvial flood plains derived from granitic sources and consist of deep and drained soils. Slopes with this soil range from 0 to 9%, with an annual mean temperature of 62°F and an annual mean precipitation of 16 inches. Tujunga soils occur at an elevation ranging from 5 to 4,300 feet. Geographically associated soils include Delhi soils as well as the Hanford, Soboba, and Grangeville soils.

A significant portion of the project site has been developed and the entire site has been disturbed with evidence of recent disking within open areas of the site. No windblown sands were observed within the project site.



Z:\Templates\Arcmap\New Protos\Generic\8x11 Portrait.mxd 1/15/2009

DUDEK

8674

SOURCE: Bing Maps 2015, USDA 2012

Figure 3

Soils Map

WESTERN REALCO - BLOOMINGTON, CA

INTENTIONALLY LEFT BLANK

5 RESULTS

5.1 Vegetation Communities, Land Covers, and Floral Diversity

Vegetation communities are depicted on Figure 4, and representative photographs are provided in Appendix B. There are three land covers/vegetation communities within the project site: agricultural, nonnative grassland and developed. The acreages are provided in Table 2 and a description of each follows.

Table 2
Vegetation Communities

Macrogroup	Acres	% of Site
Non-native Grassland	6.35	18.4%
Agricultural	6.91	20.0%
Developed/Disturbed	21.27	61.6%
Total	**34.54**	**100.0%**

5.1.1 Non-Native Grassland

Non-native annual grassland is characterized by weedy, introduced annuals, primarily grasses, including wild oat (*Avena* spp.), bromes (*Bromus diandrus, B. madritensis, B. hordeaceus*), black mustard (*Brassica nigra*), filaree (*Erodium* spp.), and Russian-thistle (*Salsola tragus*). It may occur where disturbance by maintenance (mowing, scraping, disking, spraying, etc.), grazing, repetitive fire, agriculture, or other mechanical disruption have altered soils and removed native seed sources from areas formerly supporting native vegetation. Non-native grassland typically occurs adjacent to roads or other developed areas where there has been some historic disturbance. Non-native grassland may support sensitive plant and animal species and provide valuable foraging habitat for raptors (birds of prey).

There are 6.35 acres characterized as non-native grassland within the project site. This vegetation community has a dense vegetative cover dominated by common fiddleneck (*Amsinckia intermedia*), bromes, and London rocket (*Sisymbrium irio*). The soil within this area was recently disked.

5.1.2 Agricultural Land

This community is not a designated vegetation community in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986); however, it is a commonly recognized land use and was a distinctive component within the project site. It is similar to non-native grassland and often contains some of the same weedy, introduced annuals including wild

oat, bromes, black mustard , filaree, and Russian-thistle. These grasslands serve as agricultural fields for various livestock species and are often heavily grazed.

On site, this community occurs on 6.91 acres within the southwest section of the property. There were llamas and goats grazing within the field. The plant species within this community were unidentifiable due to a combination of the agriculture field being completely fenced as well as livestock heavily grazing the grass species. However, since the non-native grassland vegetation community is in close proximity to the non-native grassland, it can be assumed that this community shares a similar species composition as the non-native grassland vegetation community.

5.1.3 Developed/Disturbed Land

Developed land consists of buildings, structures, homes, parking lots, paved roads, and maintained areas. Developed areas do not support native vegetation. Disturbed land refers to areas that are not developed yet lack vegetation, and generally are the result of severe or repeated mechanical perturbation.

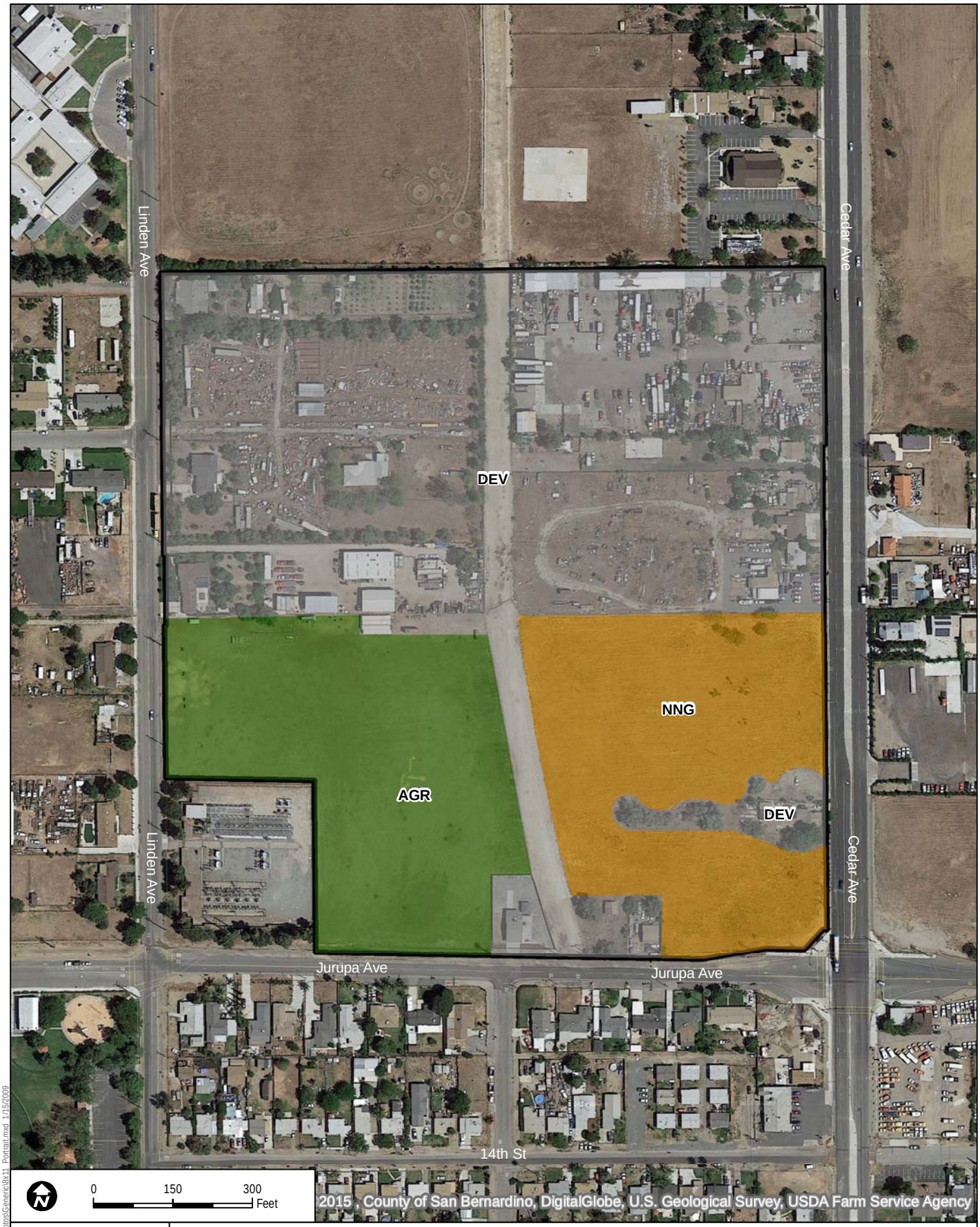
Developed/disturbed land occurs within a majority the project site for a total of 21.27 acres. Multiple residential homes and a junk yard are located within the project boundary. The residential yards contain ornamental trees including tamarisk (*Tamarix aphylla)*, Peruvian pepper trees (*Schinus molle)*, eucalyptus trees (*Eucalyptus* spp.), and tree tobacco (*Nicotiana glauca)*. Some areas contain multiple cars and trailers. The gravel road running through the center of the project site is absent of vegetation.

5.2 Floral Diversity

A total of 14 vascular plant species, including 1 native species (7%) and 13 non-native species (93%), were recorded during the surveys, representing 12 plant families. The lack of species diversity and relatively high proportion of non-native plants indicates the project site contains disturbed areas. The common plant species that were identified within the vegetation communities are provided in the Plant Compendium in Appendix A.

5.3 Faunal Diversity

Twenty-six wildlife species were observed during the field survey, including common bird species such as northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Spinus psaltria*). There were also a large number of painted lady (*Vanessa cardui)* butterflies. There were multiple species of farming animals on site located within fenced areas. A full list of wildlife species observed during the survey is provided in the Wildlife Compendium in Appendix A.



DUDEK

8674

SOURCE: Google Maps 2015

FIGURE 4

Vegetation Map

WESTERN REALCO - BLOOMINGTON, CA

Z:\Templates\Arcmap\New Protos\Generic\8x11 Portrait.mxd 1/15/2009

INTENTIONALLY LEFT BLANK

5.4 Special-Status Plant Species

The project does not overlap any Critical Habitat as designated by the U.S. Fish and Wildlife Service (USFWS). No special-status plant species were identified within the project site during the general biological survey. The project site is mostly developed and is primarily composed of disturbed land and developed land. Table 3 lists special-status plant species documented in the literature review and their potential to occur within the project site. No listed or special-status plant species have the potential to occur within the project site due to the lack of suitable habitat.

Table 3
Special-Status Plant Species Potential to Occur on the Project Site

Common Name	Scientific Name	Status (Federal/ State)	CRPR	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Bristly sedge	*Carex comosa*	None/None	2B.1	Coastal prairie, marshes and swamps(lake margins), valley and foothill grassland/perennial rhizomatous herb/May–Sep/0–2,051	Not expected to occur. No suitable habitat including marshes and swamps on site.
California satintail	*Imperata brevifolia*	None/None	2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub/mesic/perennial rhizomatous herb/Sep–May/0–3,986	Not expected to occur. High disturbance of habitat on site, and associated habitat including meadows and seeps are not located on site.
Chaparral ragwort	*Senecio aphanactis*	None/None	2B.2	Chaparral, cismontane woodland, Coastal scrub/sometimes alkaline/annual herb/Jan–Apr/49–2,625	Not expected to occur. Associated habitat is not located on site.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	None/None	1B.1	Chaparral, coastal scrub, desert dunes/sandy/annual herb/Jan–Sep/246–5,249	Not expected to occur. High disturbance of habitat on site, and associated habitat is not located on site.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None/None	1B.1	Marshes and swamps(coastal salt), playas, vernal pools/annual herb/Feb–Jun/3–4,003	Not expected to occur. Lack of associated habitat including marshes and swamps on site.
Gambel's water cress	*Nasturtium gambelii*	FE/CT	1B.1	Marshes and swamps(freshwater or brackish)/perennial rhizomatous herb/Apr–Oct/16–1,083	Not expected to occur. Lack of associated habitat including marshes and swamps on site.

Table 3
Special-Status Plant Species Potential to Occur on the Project Site

Common Name	Scientific Name	Status (Federal/ State)	CRPR	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Horn's milk-vetch	*Astragalus hornii* var. *hornii*	None/None	1B.1	Meadows and seeps, playas/lake margins, alkaline/annual herb/May–Oct/197–2,789	Not expected to occur. High disturbance and lack of associated habitat on site.
Hot springs fimbristylis	*Fimbristylis thermalis*	None/None	2B.2	Meadows and seeps (alkaline, near hot springs)/perennial rhizomatous herb/Jul–Sep/361–4,396	Not expected to occur. Lack of associated habitat including meadows and seeps on site.
Many-stemmed dudleya	*Dudleya multicaulis*	None/None	1B.2	Chaparral, coastal scrub, valley and foothill grassland/often clay/perennial herb/Apr–Jul/49–2592	Not expected to occur. Lack of associated habitat, including clay soils, on site.
Mesa horkelia	*Horkelia cuneata* var. *puberula*	None/None	1B.1	Chaparral(maritime), cismontane woodland, coastal scrub/sandy or gravelly/perennial herb/Feb–Jul (Sep)/230–2,657	Not expected to occur. Lack of associated habitat on site.
Nevin's barberry	*Berberis nevinii*	FE/CE	1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub/sandy or gravelly/perennial evergreen shrub/Mar-Jun/899–2,707	Not expected to occur. Lack of associated riparian habitat on site.
Parish's desert-thorn	*Lycium parishii*	None/None	2B.3	Coastal scrub, Sonoran desert scrub/perennial shrub/Mar–Apr/443–3,281	Not expected to occur. Lack of associated habitat on site.
Parish's gooseberry	*Ribes divaricatum* var. *parishii*	None/None	2B.3	Riparian woodland/perennial deciduous shrub/Feb–Apr/213–984	Not expected to occur. Lack of associated riparian woodland habitat on site.
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	None/None	1B.1	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/sandy or rocky, openings/annual herb/Apr–Jun/902–4,003	Not expected to occur. High disturbance of habitat on site, and lack of associated habitat on site.
Prairie wedge grass	*Sphenopholis obtusata*	None/None	2B.2	Cismontane woodland, meadows and seeps/mesic/perennial herb/Apr–Jul/984–6,562	Not expected to occur. Lack of associated habitat including meadows and seeps on site.
Pringle's monardella	*Monardella pringlei*	None/None	1A	Coastal scrub (sandy)/annual herb/May–Jun/984–1,312	Not expected to occur. Lack of associated habitat on site.

Table 3
Special-Status Plant Species Potential to Occur on the Project Site

Common Name	Scientific Name	Status (Federal/ State)	CRPR	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Prostrate vernal pool navarretia	*Navarretia prostrata*	None/None	1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland(alkaline), vernal pools/mesic/annual herb/Apr–Jul/49–3,970	Not expected to occur. Lack of associated habitat including coastal scrub, meadows and seeps on site.
Salt spring checkerbloom	*Sidalcea neomexicana*	None/None	2B.2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas/alkaline, mesic/perennial herb/Mar–Jun/49–5,020	Not expected to occur. Lack of associated habitat on site.
San Bernardino aster	*Symphyotrichum defoliatum*	None/None	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic)/near ditches, streams, springs/perennial rhizomatous herb/Jul–Nov/7–6,693	Not expected to occur. Lack of associated habitat including marshes, seeps, meadows, and swamps on site.
San Diego ambrosia	*Ambrosia pumila*	FE/None	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/66–1,362	Not expected to occur. Extremely high soil disturbance and lack of associated habitat on site.
Sanford's arrowhead	*Sagittaria sanfordii*	None/None	1B.2	Marshes and swamps(assorted shallow freshwater)/perennial rhizomatous herb/May–Oct (Nov)/0–2,133	Not expected to occur. Lack of associated habitat including marshes and swamps on site.
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	FE/CE	1B.1	Chaparral, coastal scrub (alluvial fan)/sandy or gravelly/perennial herb/Apr–Sep/299–2,001	Not expected to occur. Lack of associated habitat on site.
Singlewhorl burrobrush	*Ambrosia monogyra*	None/None	2B.2	Chaparral, Sonoran desert scrub/sandy/perennial shrub/Aug–Nov/33–1,640	Not expected to occur. Lack of associated habitat is not located on site.
Slender-horned spineflower	*Dodecahema leptoceras*	FE/CE	1B.1	Chaparral, cismontane woodland, coastal scrub (alluvial fan)/sandy/annual herb/Apr–Jun/656–2,493	Not expected to occur. Lack of associated habitat is not located on site.
Smooth tarplant	*Centromadia pungens* ssp. *laevis*	None/None	1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland/alkaline/annual herb/Apr–Sep/0–2,100	Not expected to occur. Lack of riparian woodland habitat on site.

Table 3
Special-Status Plant Species Potential to Occur on the Project Site

Common Name	Scientific Name	Status (Federal/ State)	CRPR	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	Potential to Occur
Thread-leaved brodiaea	*Brodiaea filifolia*	FT/CE	1B.1	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools/often clay/perennial bulbiferous herb/Mar–Jun/82–3,675	Not expected to occur. No vernal pools or other associated habitat on site.
White-bracted spineflower	*Chorizanthe xanti* var. *leucotheca*	None/None	1B.2	Coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland/sandy or gravelly/annual herb/Apr–Jun/984–3,937	Not expected to occur. Lack of associated habitat on site.

Federal Designations
FE: Species listed as endangered by the USFWS.
FT: Species listed as threatened by the USFWS.
State Designations
CE: Species listed as endangered by the California Fish and Game Commission.
CT: Species listed as threatened by the California Fish and Game Commission.
California Rare Plant Rank (CRPR)
1A: Plants presumed extinct in California.
1B: Plants rare, threatened, or endangered in California and elsewhere.
2: Plants rare, threatened, or endangered in California, but more common elsewhere.
3: Plants about which we need more information–a review list.
4: Plants of limited distribution–a watch list.
Threat Ranks
0.1: Seriously threatened in California (high degree/immediacy of threat).
0.2: Fairly threatened in California (moderate degree/immediacy of threat).
0.3: Not very threatened in California (low degree/immediacy of threats or no current threats known).

5.5 Special-Status Wildlife Species

The project does not overlap any Critical Habitat as designated by the USFWS. The project is within the boundary of the Delhi sands flower-loving fly Jurupa Recovery Unit (USFWS 1997); however, there are no Delhi sands mapped within the project site and there is no suitable habitat for the Delhi sands flower-loving fly within the project site.

No special-status wildlife species were observed during the survey. There is a potential for burrowing owl, a California Species of Special Concern, to occur on site due to presence of suitable habitat within and surrounding the project site, as well as historical occurrences within 1 mile. However, no suitable burrows were found within areas that were accessible to survey on site.

Table 4 includes special-status wildlife species documented in the literature review and their potential to occur on site based on the location of the site and general vegetation communities

found in the area. Where pertinent, a distinction is made between foraging and breeding habitat available on site. Species with a moderate or higher potential to occur are discussed in more detail following the table. With the exception of the foraging raptors and marginal potential of burrowing owl, no listed or special-status wildlife species are expected to occur on site based on the lack of suitable habitat.

Table 4
Special-Status Wildlife Species Potential to Occur on Project Site

Common Name	Scientific Name	Federal/State Status	Habitat	Potential to Occur
Amphibians				
Western spadefoot	*Spea hammondii*	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley-foothill woodlands, pastures, and other agriculture	Not likely to occur. No suitable habitat due to a lack of breeding ponds or aestivation habitat.
Reptiles				
Orangethroat whiptail	*Aspidoscelis hyperythra*	None/SSC	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood	Not likely to occur. No habitat associations present; heavy ground disturbance due to disking. Urbanization surrounds the project site.
California mountain kingsnake	*Lampropeltis zonata (parvirubra)*	None/SSC	Wide range of habitats including conifer forest, oak-pine woodlands, riparian woodland, chaparral, manzanita and coastal scrub	Not likely to occur. No habitat associations present; heavy ground disturbance due to disking. Urbanization surrounds the project site.
Silvery legless lizard	*Anniella pulchra pulchra*	None/SSC	Stabilized dunes, beaches, dry washes, chaparral, scrubs, pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils	Not likely to occur. No habitat associations present; heavy ground disturbance due to disking. Urbanization surrounds the project site.
Blainville's horned lizard	*Phrynosoma blainvillii*	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley-foothill hardwood, conifer, riparian, pine-cypress, juniper, and annual grassland	Not likely to occur. No habitat associations present; heavy ground disturbance due to disking. No associated ant colonies present. Urbanization surrounds the project site.
Red diamondback rattlesnake	*Crotalus ruber*	None/SSC	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not likely to occur. No habitat associations present; heavy ground disturbance due to disking. Urbanization surrounds the project site.

Table 4
Special-Status Wildlife Species Potential to Occur on Project Site

Common Name	Scientific Name	Federal/State Status	Habitat	Potential to Occur
Birds				
Cooper's Hawk	*Accipiter cooperii*	None/WL	Riparian and oak woodlands, montane canyons	Present for foraging; not expected to occur for nesting. Potential foraging habitat. However, no nesting habitat. Observed foraging in the fall.
Burrowing owl	*Athene cunicularia*	None/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows.	Moderate potential to occur**.** CNDDB extant occurrence overlaps project site. Suitable, open and flat habitat, No suitable burrows were detected but portions of the project site that was fenced and could not be surveyed. Due to animal grazing, the fenced in section habitat remains open. However, the potential for burrowing owl is low due to the chance of agricultural animals collapsing potential burrows.
Swainson's hawk	*Buteo swainsoni* (nesting)	None/ST	Nests in open woodland and savanna, riparian and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Low potential for foraging during migration. Not expected to nest due to the lack of suitable nesting habitat on site. Documented CNDDB occurrences within the area are presumed extirpated by CNDDB.
Yellow warbler	*Setophaga petechia* (nesting)	None/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine and mixed conifer habitats	Not expected to occur on site. No suitable vegetation present including riparian, woodland and conifer habitats.
Coastal California gnatcatcher	*Polioptila californica californica*	FT/SSC	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet in elevation	Not expected to occur on site. CNDDB occurrence within 1 mile from project site; however, no nesting potential due to the absence of coastal scrub vegetation on site and surrounded by residential development. No potential for foraging.
Least Bell's vireo	*Vireo bellii pusillus* (nesting)	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur on site. No suitable habitat occurs on site. Strongly associated with riparian forest.

Table 4
Special-Status Wildlife Species Potential to Occur on Project Site

Common Name	Scientific Name	Federal/State Status	Habitat	Potential to Occur
Mammals				
San Diego desert woodrat	*Neotoma lepida intermedia*	None/SSC	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Low potential to occur. Heavy ground disturbance due to disking. Unsuitable habitat, potential for recolonization within junk yard areas.
Los Angeles pocket mouse	*Perognathus longimembris brevinasus*	None/SSC	Lower elevation grassland, alluvial sage scrub, and coastal scrub	Low potential to occur. Heavy ground disturbance due to disking. Marginally suitable habitat, potential for recolonization.
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland, on immediate terraces adjacent to creeks	Low potential to occur. Heavy ground disturbance due to disking. Marginally suitable habitat, potential for recolonization.
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	FE/SSC	Sparse scrub habitat, alluvial scrub/coastal scrub habitats on gravelly and sandy soils near river and stream terraces	Not expected to occur. Project site is not near streams with the absence of suitable vegetation as well as heavy ground disturbance due to disking.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None/SSC	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Low potential to occur. Heavy ground disturbance due to disking. Marginally suitable habitat, potential for recolonization.
Stephens' kangaroo rat	*Dipodomys stephensi*	FE/ST	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover or in disturbed areas	Not expected to occur. No documented occurrence within a 7-mile radius of the project site. Heavy ground disturbance due to disking.
Western mastiff bat	*Eumops perotis californicus*	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees and tunnels, seeming to prefer synthetic structures. Roosting occurs on 50% – 100% of rocky slopes.	Low potential for foraging; not expected to roost on site. No roosting potential occurs within the project site due to the absence of rocky slopes.
Invertebrates				
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/None	Vernal pools, non-vegetated ephemeral pools	No potential to occur. No suitable habitat. Based on soils present, the site doesn't have the inherent capacity to hold rain water over a lengthy duration.

Table 4
Special-Status Wildlife Species Potential to Occur on Project Site

Common Name	Scientific Name	Federal/State Status	Habitat	Potential to Occur
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	FE/none	Delhi fine sandy soils and dunes, scrub and ruderal vegetation in the sand verbena series with <50% cover.	No potential to occur. CNDDB presumed extant occurrence within 1.5 miles of the site; however, no suitable habitat on site due to the absence of Delhi soils.

Federal Designations
FE: Species listed as endangered by the USFWS.
FT: Species listed as threatened by the USFWS.
State Designations
SE: Species listed as endangered by the California Fish and Game Commission.
ST: Species listed as threatened by the California Fish and Game Commission.
SSC: California Species of Special Concern; considered by CDFW as vulnerable to extinction in California due to declining populations or habitat.
WL: CDFW Watch List

5.5.1 Burrowing Owl

Burrowing owl is a USFWS Bird of Conservation Concern and a California Species of Special Concern. With a relatively wide-ranging distribution throughout the west, burrowing owls are considered habitat generalists (Lantz et al. 2004). In California, burrowing owls are year-long residents of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon–juniper and ponderosa pine habitats (Zeiner et al. 1990). Preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils (Haug et al. 1993).

The presence of burrows is the most essential component of burrowing owl habitat as they are required for nesting, roosting, cover, and caching prey. In California, western burrowing owls most commonly live in burrows created by California ground squirrels (*Spermophilus (Otospermophilus) beecheyi*). Burrowing owls may occur in human-altered landscapes such as channels, agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable (i.e., open and sparse), useable burrows are available, and foraging habitat occurs in close proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can also be used for nesting and roosting.

There were no potential burrows detected within the project site during the biological survey; however, a majority of the project site was inaccessible because it was fenced. Therefore, the biologist was unable to conduct a thorough habitat suitability assessment for burrowing owl. Due to the absence of sign within the portion of the project site that was accessible, it is assumed burrowing owls are not present at this time. However, potential burrowing owl burrows could occur within the agriculture field that was inaccessible. There is a presumed extant burrowing

owl occurrence documented in 2004 in the CNDDB that overlaps the project site and therefore enhances the possibility of future residency of this species on site.

5.5.2 Cooper's Hawk

Cooper's hawk is found year-round in Southern California. They are usually found in oak and conifer woodlands, suburban areas, riparian areas, and tree groves within the desert region. Their nests are usually more than 6 meters (20 feet) off the ground and are made of sticks and twigs on top of a bulky platform (Sibley 2000; Cornell Lab of Ornithology 2014).

Within the project site, there is suitable foraging and nesting habitat for Cooper's hawk. Cooper's hawk generally nest in riparian and oak woodlands; however, they are known to nest within suburban areas where trees greater than 6 meters (20 feet) in height are present.

5.6 Jurisdictional Waters

Due to the absence of riparian vegetation communities within the property as well as the absence of drainage features or other hydraulic indicators within the project site, there are no waters present that would fall under the jurisdiction of CDFW and/or the U.S. Army Corps of Engineers.

5.7 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal. Because nearly the entire project site is fenced and surrounded by development, there are no wildlife corridors within or adjacent to the project site.

5.8 Nesting Birds

The trees within the project site and surrounding residential areas could potentially be used by migratory birds for breeding. The open fields within the project site also have the potential to contain suitable burrows for burrowing owl and the ground surface is suitable nesting habitat for kill deer (*Charadrius vociferus*). There are multiple nesting boxes located on site along the west side of the dirt road that runs through the project site (see photograph in Appendix B). Numerous bird species can use these boxes for nesting. Furthermore, there are numerous bird species that nest within the non-native vegetation on site, such as the northern mockingbird and mourning dove (*Zenaida macroura*).

INTENTIONALLY LEFT BLANK

6 PROJECT IMPACTS

Impacts to special-status vegetation communities, plant and wildlife species, and jurisdictional waters, including wetlands, must be quantified and analyzed to determine whether such impacts are significant under CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible, because the significance of an activity may vary with the setting. Appendix G of the CEQA Guidelines, however, does provide "examples of consequences which may be deemed to be a significant effect on the environment" (CEQA Guidelines, Section 15064[e]). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. CEQA Guidelines Section 15065(a) is also helpful in defining whether a project may have "a significant effect on the environment." According to that section, a proposed project may have a significant effect on the environment if the project has the potential to: (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal, or (6) eliminate important examples of a major period of California history or prehistory.

The following are the significance thresholds for biological resources provided in the CEQA Guidelines Appendix G Environmental Checklist, which states that a project could potentially have a significant affect if it:

Impact BIO-1 Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game1 or U.S. Fish and Wildlife Service.

Impact BIO-2 Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact BIO-3 Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

[1] Although the California Department of Fish and Game changed its name to California Department of Fish and Wildlife effective January 1, 2013, this text is taken directly from the current CEQA Guidelines checklist, and therefore has not been modified.

Impact BIO-4 Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.

Impact BIO-5 Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact BIO-6 Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The evaluation of whether or not an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Significant impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal species. Impacts may be important locally, because they result in an adverse alteration of existing site conditions, but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether or not that impact can be mitigated to a level below significance.

All potential habitat for special status plants and wildlife species would be removed during grading and construction of the proposed development. Operation of the project would not result in significant impacts to biological resources since the majority of the site will be paved or landscaped. However, the proposed water quality basin could provide habitat for burrowing owl following construction. Maintenance of the basins could result in take of active burrowing owl nests if these activities are conducted during the breeding season. Therefore, the discussion below focuses on impacts to biological resources as a result of construction of the project and maintenance of the proposed water quality basin on the project site.

6.1 Impact BIO-1: Special-Status Species

6.1.1 Special-Status Plants

No special-status plant species were observed within the project site.

Due to high disturbance and lack of suitable habitat throughout the entire project area, there is no potential for special-status plant species to occur on site. Therefore, there are no anticipated occurrences of direct or indirect impacts to special-status plants within the project site.

6.1.2 Special-Status Wildlife

Potential impacts could occur to Cooper's hawk and burrowing owl. With implementation of MM-BIO-1 and MM-BIO-2, impacts would not be significant, and no additional mitigation is required for these species.

If the project removes trees or other habitat utilized by Cooper's hawk and other birds for foraging or nesting, direct impacts to foraging raptor species would occur. Potential indirect impacts to special-status foraging birds, such as Cooper's hawk, are limited to short-term construction impacts from increased noise and dust. Due to the limited amount of suitable habitat within the project footprint and the ability for foraging birds to move freely to other available habitat, indirect impacts to foraging special status bird species would be less than significant.

Project construction could result in direct impacts to nesting individuals, including the loss of nests, eggs, and fledglings if vegetation clearing and ground-disturbing activities occur during the nesting season (generally between February 1 and June 30). Furthermore, maintenance of the basins proposed as part of the project could result in direct impacts to nesting individuals. This impact may be significant because substantial direct impacts to individuals of designated special-status species could occur during a critical period of these species' life cycles and may result in reduced reproductive success during the construction period. Implementation of a nesting bird survey conducted in accordance with the MBTA, as described in MM-BIO-1, would reduce potential impacts to nesting special-status bird species to less than significant.

MM-BIO-1 If construction or basin maintenance activities are to take place during the avian nesting season breeding season (February 15 through August 31 for most bird species, and January 1 through August 31 for raptors), a pre-construction survey for nesting bird species, including raptors, shall be conducted within 7 days prior to vegetation removal or ground disturbing activities. The survey will identify any active protected nesting birds on the project site or within 500 feet of construction activities. If active nests of protected birds are present in the impact area or within 500 feet of the edge of construction area, a qualified biologist (knowledgeable of nesting birds in the region) shall prescribe avoidance measures including, but not limited to, establishing a construction avoidance buffer. The buffer will be established in the field using conspicuous flagging and construction personnel will be informed of the avoidance area. The buffer will be the minimum necessary to avoid direct and indirect impacts to the nest as determined by a qualified biologist but will be a minimum of 50 feet. The qualified biologist may determine that additional avoidance measures are necessary (such as noise reduction or visual buffers) and will be based on the

type of species, nesting stage, surround topography, existing conditions, and type of construction activity. Avoidance measures shall remain in place until the nest is no longer active as determined by a qualified biologist. All nests, implemented avoidance measures, and results (ie – nest success, nest predation, nest failure) will be documented in monitoring logs.

MM-BIO-2 A qualified biologist will conduct a burrowing owl pre-construction survey in accordance with the latest California Department of Fish and Wildlife (CDFW) survey guidelines within 14 days and within 24 hours prior to ground-disturbance or noise-producing activities. If burrowing owls occupy the site, then a mitigation plan shall be prepared following the requirements of the Staff Report on Burrowing Owl Mitigation (CDFG 2012) or latest CDFW requirements. The plan will include minimization measures and monitoring if practicable. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owls impacted are replaced in accordance with the recommendations of the Staff Report on Burrowing Owl Mitigation. Mitigation will include permanent conservation of similar vegetation communities to provide for burrowing owl nesting, foraging, wintering, and dispersal comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. The mitigation lands may require habitat enhancements including enhancement or expansion of burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. Mitigation lands shall be permanently protected through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission, The mitigation plan shall be approved by CDFW, and implemented prior to initiation of ground-disturbance activities that may affect the burrowing owl on site.

6.2 Impact BIO-2: Sensitive Vegetation Communities

There are no sensitive vegetation communities within or adjacent to the project site; therefore, the project would not result in direct or indirect impacts to sensitive vegetation communities.

6.3 Impact BIO-3: Jurisdictional Waters

There are no water features present within the project site; therefore, the project would not result in direct or indirect impacts to jurisdictional waters. Due to the lack of waters under the

jurisdiction of U.S. Army Corps of Engineers and CDFW, no additional coordination or application for permits with these agencies is required.

6.4 Impact BIO-4: Wildlife Corridors and Migratory Routes

There are no wildlife corridors within the project site, and therefore, the project would not have impacts to wildlife corridors.

Project implementation would not interfere substantially with the movement of any native resident or migratory bird species. The project site has potential to support nesting resident and migratory birds. The project will comply with all federal and state regulations that protect nesting and migratory bird species and will implement MM-BIO-1 to avoid nesting birds; therefore, there would be no significant impacts to migratory birds.

6.5 Impact BIO-5: Local Policies or Ordinances

There are no species or habitat regulated by the County's Native Plant Protection Act within the project site. There are no other local policies or ordinances with respect to biological resources that apply to the project site. Therefore, the project is not in conflict with local policies or ordinances.

6.6 Impact BIO-6: Habitat Conservation Plan

The project site is not within a designated habitat conservation plan area; therefore, the project is not in conflict with any habitat conservation plan.

INTENTIONALLY LEFT BLANK

7 CONCLUSION

Based on our review of biological resources in the project site, with implementation of the recommended mitigation measures, no significant impacts to biological resources would occur as a result of the project.

INTENTIONALLY LEFT BLANK

8 REFERENCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Baldwin, B., Goldman, D.H., Keil, D.J., Patterson, R., Rosatti, T.J. and Wilkin, D.H. 2012. *The Jepson Manual: Vascular Plants of California*. 2nd ed. Berkeley, California: University of California Press.

California Fish and Game Code, Section 1600–1616. Division 2: Department of Fish and Game, Chapter 6: Fish and Wildlife Protection and Conservation.

CDFW (California Department of Fish and Wildlife). 2015. California Natural Diversity Database (CNDDB). RareFind 4.0 (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed February 2015. https://nrmsecure.dfg.ca.gov/cnddb/Default.aspx.

Clarke, O.F, D. Svehla, G. Ballmer and A. Montalvo. 2007. *Flora of the Santa Ana River and Environs.* Library of Congress Cataloging-in-Publication Data.

CNPS (California Native Plant Society). 2015. *Inventory of Rare and Endangered Plants.* Online ed. Version 8-02. Sacramento, California: CNPS. Accessed February 2015. http://www.rareplants.cnps.org/detail/1599.html.

Cornell Lab of Ornithology. 2014. "Cooper's Hawk." Cornell University, Cornell Lab of Ornithology. http://birds.cornell.edu.

Gervais, J.A., D.K. Rosenberg, and L.A. Comrack. 2008. "Burrowing owl (*Athene cunicularia*)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California,* edited by W.D. Shuford and T. Gardali, 218–226. Studies of Western Birds no. 1. California: Western Field Ornithologists (Camarillo), and California Department of Fish and Game (Sacramento). February 4, 2008. http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html.

Haug, E.A., B.A. Millsap, and M.S. Martell. 2011. "Burrowing Owl." Revised by R. Poulin and L.D. Todd. In *The Birds of North America Online*, edited by A. Poole. Ithaca, New York: Cornell Lab of Ornithology. Accessed December 12, 2011. doi: 10.2173/bna.61.

Holland, R. F., 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame Heritage Program, California Department of Fish and Game. October 1986. http://www.cal-ipc.org/ip/inventory/pdf/HollandReport.pdf.

Jepson Flora Project. 2014. *Jepson eFlora*. Berkeley, California: University of California. http://ucjeps.berkeley.edu/cgi-bin/get_JM_name_data.pl.

Lantz, S. J., H. Smith, and D.A. Keinath. 2004. "Species Assessment for Western Burrowing owl (*Athene cunicularia hypugaea*) in Wyoming." Prepared for the U.S. Department of Interior and Bureau of Land Management.

NOAA (National Oceanic Atmospheric Administration). 2015. National Climatic Data Center. http://www.ncdc.noaa.gov/data-access.

NRCS (Natural Resources Conservation Service). 2014. PLANTS Database. U.S. Department of Agriculture, NRCS. http://plants.usda.gov/java/.

Reid, F.A. 2006. *Field Guide to Mammals of North America*. The Peterson Field Guide Series. 4th ed. Boston, Massachusetts: Houghton Mifflin.

Sibley, D.A. 2000. *The Sibley Guide to Birds*. New York, New York: Alfred A. Knopf.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians.* Boston, Massachusetts: Houghton Mifflin

USDA (U.S. Department of Agriculture).2015. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed February 2015.

USFWS (U.S. Fish and Wildlife Service). 2002. *Status Report and Conservation Plan for the Western Burrowing Owl in the United States*. Biological Technical Publication BTP-R6001-2003. Prepared by D.S. Klute, L.W. Ayers, M.T. Green, W.H. Howe, S.L. Jones, J.A. Shaffer, S.R. Sheffield, and T.S. Zimmerman. Washington, D.C.: USFWS.

USFWS (U.S. Fish and Wildlife Service). 1997. *Final Recovery Plan for the Delhi Sands Flower-loving Fly.*

USGS (U.S. Geologic Survey). 2010. "Fontana 7.5-Minute Series (Topographic)" [map]. Reston, Virginia: USGS.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife: Volume III. Mammals*. Sacramento, California: California Department of Fish and Game.

APPENDIX A

Plant and Wildlife Compendiums

APPENDIX A
Plant and Wildlife Compendiums

PLANT COMPENDIUM

ANGIOSPERMS (DICOTS)

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

* *Schinus molle*—Peruvian peppertree

BORAGINACEAE—BORAGE FAMILY

Amsinckia menziesii var. *intermedia* - common fiddleneck

BRASSICACEAE—MUSTARD FAMILY

* *Brassica nigra*—black mustard

* *Sisymbrium irio* – London rocket

* *Sisymbrium erysimoides* – Australian rocket

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Salsola tragus*—prickly Russian thistle

GERANIACEAE – GERANIUM FAMILY

* *Erodium cicutarium* – Red stemmed filaree

MYRTACEAE—MYRTLE FAMILY

* Eucalyptus species

PINACEAE – PINE FAMILY

* *Pinus halepensis* – Aleppo pine

RUTACEAE – ORANGE FAMILY

* *Citrus sinensis* – Orange tree

SIMAROUBACEAE – QUASSIA FAMILY

* *Ailanthus altissima* – Chinese tree of heaven

SOLANACEAE – NIGHTSHADE FAMILY

* *Nicotiana glauca* – Tree tobacco

TAMARICACEAE – TAMARISK FAMILY

* *Tamarix aphylla* – Salt cedar

MONOCOTS

POACEAE—GRASS FAMILY

* *Bromus diandrus* – Ripgut

* *Hordeum murinum* ssp. *glaucum* – Mouse barley

* signifies introduced (non-native) species

WILDLIFE COMPENDIUM

WILDLIFE SPECIES – VERTEBRATES

BIRD

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia – Song sparrow

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Carpodacus mexicanus—House finch

Spinus psaltria – Lesser goldfinch

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis—Red-tailed hawk

CORVIDAE—CROWS, RAVENS AND JAYS

Corvus brachyrhynchos — Common crow

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—Northern mockingbird

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—Mourning dove

INVERTEBRATE

NYMPHALIDAE – TRUE BUTTERFLIES

Vanessa cardui – Painted lady

MAMMAL

CAMELIDAE – CAMEL FAMILY

* *Lama glama* – Llama

SUIDAE – PIG FAMILY

* *Sus* sp. – Pig species

BOVIDAE – BISON, BUFFALO, SHEEP, GOATS, ANTELOPES AND GAZELLES

* *Capra aegagrus hircus* - Goat

EQUIDAE – HORSES, DONKEYS AND ZEBRAS

* *Equus ferus caballus* - Horse

REPTILE

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—Western fence lizard

* signifies introduced (non-native) species

INTENTIONALLY LEFT BLANK

APPENDIX B

Photo Documentation

APPENDIX B
Photo Documentation

Location 1: Dirt road/ filled in drainage channel, facing north.	**Location 2:** Fiddleneck field, facing southeast.
Location 3: Nesting bird box (one of three on site).	**Location 4:** Agriculture field with goats grazing, facing west.

Location 5: Agriculture fields with llamas grazing and an electrical plant in the background, facing southwest.	**Location 6:** Tamarisk grove, facing east.
Location 7: Fiddleneck field with on-site commercial property in the background, facing northeast.	**Location 8:** Debris on ground, facing north.

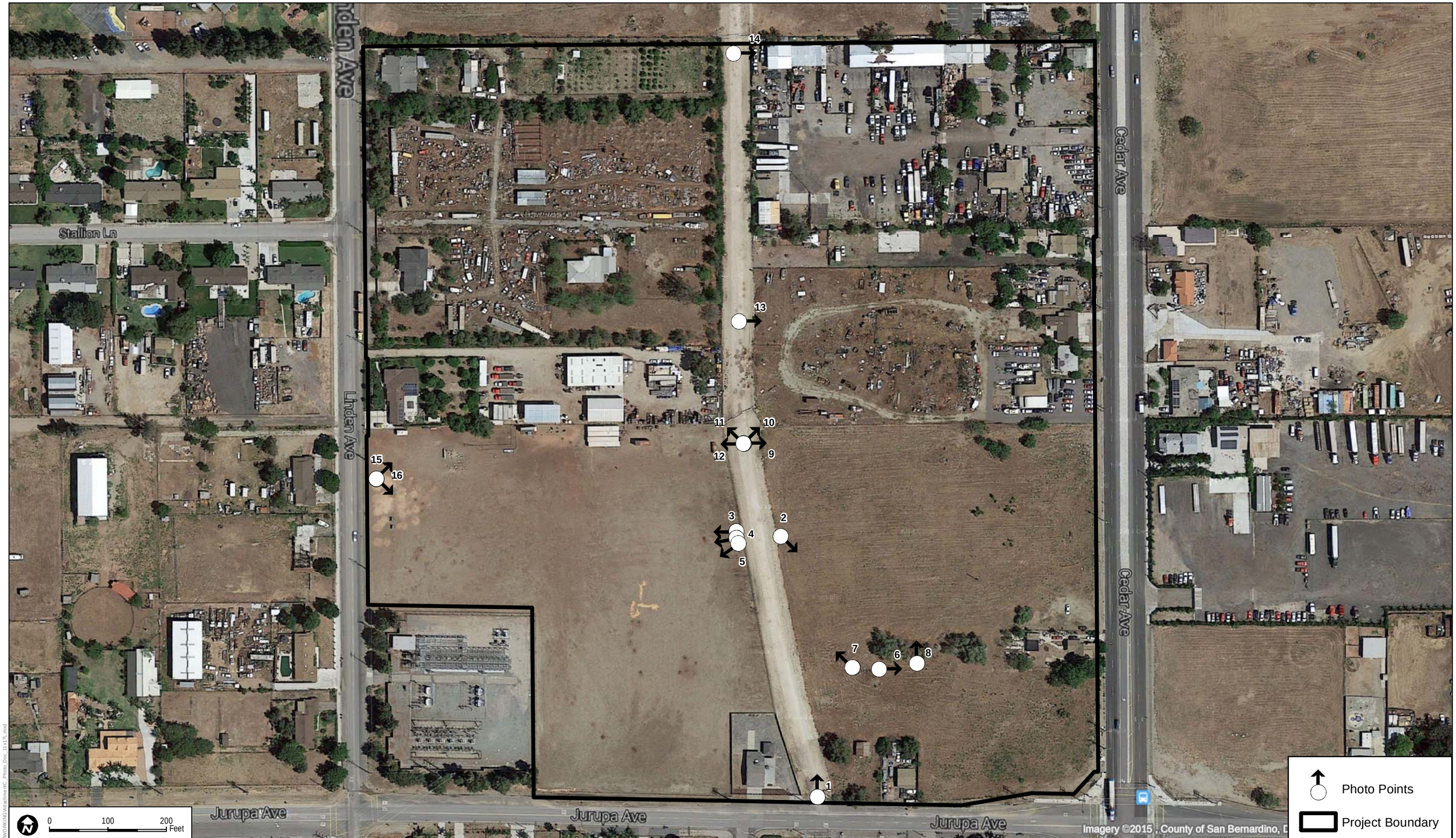
Location 9: Center of project site, facing east.	**Location 10:** Center of project site, facing northeast.
Location 11: Center of project site facing north.	**Location 12:** Center of project site, facing northwest.

Location 13: Deceased goat, facing east.

Location 14: Multiple animals in enclosure, facing northeast.

Location 15: Agriculture field, facing east.

Location 16: Agriculture field, facing southeast.



DUDEK

8674

SOURCE: Google Earth 2015

WESTERN REALCO - BLOOMINGTON, CA

ATTACHMENT C

Photo Documentation

File: Z:\Projects\8674011MA\DOCS\WORK\ATTACHMENT\C_Photo_Doc_11x17L.mxd

APPENDIX C

Resumes

Linda Archer

Environmental Specialist

Linda Archer is an environmental specialist and project manager with 16 years' experience providing natural resource and regulatory compliance consulting services, specializing in the integration of natural resource and Clean Water Act (CWA) issues within the planning process, as well as application of the Rapanos Guidance. Ms. Archer's has experience preparing and providing quality assurance/quality control review for documents in compliance with the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), biological technical reports and natural environment studies, and biological assessments.

Ms. Archer advises clients on the regulatory permitting process, obtaining permits under the CWA Sections 404 and 401, California Porter-Cologne Act, state and federal Endangered Species Acts (ESAs), and California Fish and Game Code Sections 1600–1616, as well as from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

Ms. Archer has extensive experience managing projects in Riverside and San Bernardino counties, particularly complying with the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and the Coachella Valley MSHCP. She performs jurisdictional delineations, general and directed surveys for federally and state-listed plants, locally important plant species identification, mitigation and construction monitoring, data collection for field studies and development of restoration plans, and oak tree assessments.

Ms. Archer has experience managing large biology teams, and maintains open communication with clients and among team members throughout the project process, enabling efficient collaboration and allocation of resources where needed to manage workload.

EDUCATION

University of Rochester
BS, Biology, Ecology, and Evolution, 1996

CERTIFICATIONS

Wetland Training Institute

- Plant Identification for Coastal Southern California, June 2007
- Advanced Hydric Soils, April 2005
- Wetland Delineation, March 2002

Southern California Coastal Water Research Project: CRAM 1-day workshop, 2008

Society for Ecological Restoration (SERCAL): Planned Grazing in the Management of Native Grasslands, 2003

California Native Grass Association (CNGA): Native Grassland Restoration, 2002

PROFESSIONAL AFFILIATIONS

American Planning Association, Los Angeles Chapter

California Native Plant Society

CNGA

SERCAL, California Chapter

Project Experience

Development

Specific Plan, Benchmark Pacific Corp, Hemet, California. Served as task leader for biological and regulatory compliance services and as an assistant project manager on the EIR for a specific plan in Hemet. Natural resource issues included compliance with the Western Riverside County MSHCP, conservation of vernal pools, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board.

Eagle Valley Development, Rose Investments, Inc., Lake Mathews, California. Served as biology and permitting task leader for the 800-acre master planned community located north of Lake Mathews in the sphere of influence of the City of Corona. Work efforts for this project included constraints analysis of

multiple access roads connecting the project site to Cajalco Road to the south and La Sierra Avenues to the east. Biology and permitting issues included MSHCP consistency analysis including HANS review, determination of biologically equivalent or superior preservation for riparian/riverine habitat, focused surveys for special-status species, jurisdictional delineation for 15 drainages, and consultation with the associated agencies.

Mine Expansion, Justice Associates, Coachella Valley Aggregates, Riverside County, California. Served as project manager for two mine expansion projects (180 acres and 400 acres) located in Coachella Valley in Riverside County, California. Oversaw technical studies including biological resource surveys, focused desert tortoise surveys, Coachella Valley MSHCP compliance, jurisdictional delineation, and cultural resource surveys.

CEQA Biological Study and Assorted Surveys, Trimark Pacific Homes, Victorville, California. Project manager for several projects for Trimark Pacific Homes in the Victorville area. Scope of the projects consisted of cultural resources assessment, focused Mohave ground squirrel (*Spermophilus mohavensis*) surveys, focused burrowing owl surveys (Athene cunicularia), focused desert tortoise surveys, CEQA-level general biological technical report, jurisdictional delineation, and 404, 401, and 1602 permit compliance. Managed efforts of staff biologists and subconsultants, coordinated with regulatory agencies, and assured environmental compliance of the projects. Conducted the general biological field survey, the jurisdictional delineations, and obtained the 404, 401, and 1602 permits.

ESA Compliance and Regulatory Services, Century Vintage Homes, San Bernardino, California. Project manager for a 280-acre site in Devore area of San Bernardino designated for residential development. Efforts included a jurisdictional delineation, regulatory advisory services, and ESA compliance.

Resource Management Plan for Planned Community, Aera Energy, LLC, Los Angeles and Orange Counties, California. Prepared a Restoration Management Plan for an approximately 3,000-acre master planned community in Los Angeles and Orange counties. Utilized GIS to incorporate existing resources, soils, aspect, slope, and wildlife movement corridors in the development of the plan. Worked closely with the California Department of Fish and Game, the Los Angeles County Fire Department, and the Orange County Fire Authority to develop unique mitigation strategies to maximize on-site opportunities. Additionally, analyzed baseline conditions to determine impacts to special-status biological resources and develop mitigation strategies for the project and alternatives.

Resource Management Plan for Planned Community, Ahmanson Land Company, Ventura County, California. Provided input to the Resource Management Plan for an approximately 3,000-acre master planned community in Ventura County. Contributions to the Resource Management Plan included management of special-status plant resources, a coastal sage scrub restoration plan, and a native grassland restoration plan. Conducted research on the state-listed San Fernando Valley spineflower and participated in an oak tree inventory that documented over 3,000 trees on the site.

Education

Glen Mor 2 Student Housing EIR, University of California, Riverside, Riverside, California. Project involved preparation of an EIR and associated technical studies for a University of California, Riverside (UCR) student housing community on approximately 21 acres of university-owned property. The project is covered in the University 2005 Long-Range Development Plan's (LRDP's) Land Use Plan. Ms. Archer was responsible for preparing the biological resources and jurisdictional delineation technical reports

supporting the EIR. Primary resource issues include an Arroyo within the project site, which is defined as naturalistic open space in the LRDP. The technical report included a consistency analysis of the project with the LRDP, and avoidance and mitigation measures for potential impacts to the Arroyo. The proposed project also occurs within the Western Riverside County MSHCP area. UCR is not a permittee under the Western Riverside County MSHCP; however, to address CEQA provisions related to consistency with habitat conservation plans and natural community conservation plans, the impact assessment and proposed mitigation measures were conducted and developed in accordance with the Western Riverside County MSHCP and associated implementation guidance.

Energy

Tehachapi Renewable Transmission Line Project, Biological Consulting, Southern California Edison, California. Ms. Archer served as the biological monitor manager on an approximately 174-mile transmission project that traverses from Antelope Valley through the Angeles National Forest to Chino Hills in the Los Angeles Basin. In the role of biological monitor manager, Ms. Archer was responsible for the compliance program related to biological resources during construction activities, including understanding all permit conditions related to biological resources (including CEQA mitigation measures, water permit conditions, and ESA permit conditions), providing consistency in biological monitoring and reporting across all segments, ensuring adequate staffing levels for biological monitors (up to 45 monitors per day), developing and implementing a training program for all biological monitors, and taking corrective actions for underperforming monitors.

On-Call Biological Services, Southern California Gas, California. Ms. Archer served as project manager for an on-call contract with Southern California Gas to provide biological and permitting support for operations and maintenance activities. Ms. Archer was the project manager for 12 task orders, which included biological reports (habitats assessments, plant survey, and Western Riverside County MSHCP consistency review) for the Evans Road gas pipeline installation, desert tortoise monitoring and pre-construction surveys, biological documentation (National Forest Biological Assessment/Evaluation) for the Lake Elsinore Microwave Station, and California newt (Taricha torosa) surveys and monitoring. Task orders frequently required mobilizing biologists in less than 24 hours to respond to emergency maintenance needs.

Municipal

Mockingbird Canyon to Harford Springs Regional Trail, Riverside County Regional Park and Open Space District, Riverside County, California. The County of Riverside Regional Park and Open Space District is developing and implementing a multi-use regional trail. As project manager, Ms. Archer oversaw completion of a constraints analysis to determine the best route for the trail and technical studies in support of a CEQA document. The constraints analysis included stakeholder and public meetings to compile trail goals and selection criteria, review of existing data to identify constraints, determination of selection criteria, use of GIS to prepare several alternative routes, and analysis of the routes to select a preferred alternative. Primary resource issues included biological resources, consistency with the Western Riverside MSHCP, and cultural resources.

San Bernardino County Department of Public Works On-Call, San Bernardino County Department of Public Works, San Bernardino County, California. Linda has been the client liaison for the County of San Bernardino Department of Public Works for approximately 6 years, managing work under an on-call contract including jurisdictional delineations, permitting, biological surveys, and CEQA compliance.

Resource Management

Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, San Bernardino Valley Water Conservation District, San Bernardino County, California. The project consisted of preparation of a Habitat Conservation Plan for implementation of the Upper Santa Ana River Wash Plan. Ms. Archer served as the biologist responsible for estimating take and compiling avoidance, minimization, and mitigation measures for the potentially affected special-status plant species, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Transportation

Alabama Street Bridge Culvert Replacement Project, Lim and Nascimiento Engineering, Redlands, California. Served as project manager for a culvert replacement project at Alabama Street in the City of Redlands. Work included focused surveys for special-status plant species, completion of a Natural Environment Study for Caltrans, jurisdictional delineation, a biological assessment for San Bernardino kangaroo rat (*Dipodomys merriami parvus*) in compliance with the ESA, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board.

Boulder Street Bridge Replacement Project, Lim and Nascimiento Engineering, Highland, California. Served as task leader for regulatory compliance services for a bridge replacement project in the City of Highland. Work efforts included jurisdictional delineation, focused plant surveys, and obtainment of 404, 401, and 1600 permits. The 404 permit included a Section 7 consultation for San Bernardino kangaroo rat and Santa Ana River woollystar.

Pepper Street Bridge Plant Surveys, City of Rialto, California. Conducted focused plant surveys, which included mapping an extensive population of Santa Ana River woollystar. Assisted with the Biological Assessment, which covered Santa Ana River woollystar and San Bernardino kangaroo rat, in compliance with Section 7 of the ESA.

LAX Master Plan Supplement to Environmental Impact Statement (EIS)/EIR—Los Angeles, California. Worked on the team that drafted the biological communities, wetlands, and threatened and endangered species sections of the LAX Master Plan Supplement to the draft EIS/EIR and final EIS/EIR. Researched scientific literature and solicited input from experts to complete an impact analysis to biological resources resulting from air, light, and noise impacts.

Water/Wastewater

Mojave River Maintenance Permit, San Bernardino County Department of Public Works, San Bernardino County, California. The San Bernardino County Flood Control District (District) performs maintenance activities in accordance with the Floodplain Maintenance Plan within 35 miles of an approximately 65-mile stretch of the Mojave River. Ms. Archer oversaw the completion of the jurisdictional delineation of the subject reaches of the Mojave River. The delineation included a review and analysis of available data to determine jurisdiction based on the river having a significant nexus to a navigable feature or to interstate commerce. The Mojave River watershed is the primary watershed in the desert regions of San Bernardino County and the jurisdiction of the Mojave River has long been contested due to its ephemeral nature. Guidance from the Environmental Protection Agency and the U.S. Army Corps of Engineers issued in 2007 resulting from court cases, "Rapanos Guidance," provides a basis for determining jurisdiction based on navigability, perennial waters, and a significant nexus to such waters or to interstate

commerce. The delineation report reviewed the Mojave River in light of this guidance to determine if it still qualifies as jurisdictional for the U.S. Army Corps of Engineers.

Lake Machado and Wilmington Drain Ecosystem Rehabilitation Project, CDM, Los Angeles, California. Ms. Archer served as the project manager on this highly public project coordinating with the Los Angeles Department of Public Works Bureau of Engineering and Bureau of Sanitation, Los Angeles Recreation and Parks, and team engineers. This project is a Proposition O-funded project that includes improving the water quality within Machado Lake in the City of Los Angeles. Linda coordinated with the client (engineer) and the City (applicant), provided technical oversight on all work efforts, and participated in the jurisdictional delineation and California Rapid Assessment Method (CRAM). Work efforts included baseline biological studies, jurisdictional delineation, CRAM, development of permit strategy, pre-application consultation with agencies, restoration plan, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board. Biological studies included focused surveys for least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*), focused surveys for special-status plants, population mapping of southern tarplant (*Centromadia parryi* ssp. *australis*), plant community mapping, and tree inventory. The project site includes approximately 40 acres of freshwater marsh and 53 acres of riparian forest. CRAM was completed on all wetland and riparian areas with a total of 18 assessment areas.

Relevant Previous Experience

ICF International

3/2008–9/2011: Southern California Biology Team Leader – Senior Project Manager

Michael Brandman Associates

3/2004–3/2008: Project Manager/Regulatory Team Leader

Sapphos Environmental Inc.

9/2001–03/2004: Biologist/Project Manager

Jessica Self

Biologist

Jessica Self is a biologist with 5 years' professional experience specializing in botanical and wildlife surveys and inventory. Her extensive experience and knowledge of California fauna and flora combined with proficiency using geographic information system (GIS) software and handheld devices makes her an asset in the field and the laboratory, where she has supervised technicians and undergraduates of varying skill levels. Her teaching experience equips her to clearly communicate scientific information in both written and oral form to industry professionals, clients, and the public. A strong background in biology, chemistry, and habitat restoration allows her to bring a unique understanding of the relationship between plant and wildlife species and their habitats to enhance environmental studies and reports. She has successfully collaborated with federal, state, local, and private agencies and excels at keeping the lines of communication open. Ms. Self has a history of successful team coordination, using data management, record keeping, and technical tools for coordination and conducting meetings.

EDUCATION

Georgia Southern University
MS, Biology, 2012

Western Washington University
BA, Biology, Chemistry Minor, 2009

CERTIFICATIONS/TRAINING

CDFW Rare Plant Voucher Collection
Permit No. 2081(a)-15-011-V

USFWS, Survey Permit:

- Fairy shrimp (submitted)
- Casey's June beetle (passed exam May 2015; permit being processed)

First Aid and CPR Certified

PROFESSIONAL AFFILIATIONS

Desert Tortoise Council (2014–2015)

CNPS (2013–2015)

Project Experience

Energy

Coles Levee Habitat Conservation Plan (HCP), Aera Energy LLC, Kern and Fresno Counties, California. As project biologist, conducted general biological reconnaissance surveys in Belridge, Lost Hills, and Coalinga. Conducted focused surveys for blunt-nosed leopard lizards (*Gambelia sila*) as the PASSPORT Training certified person in charge for all sites.

Nesting Bird Surveys, Blythe Solar Power, Blythe, California. As project biologist, conducted nesting bird surveys.

McCoy Solar Energy Nesting Bird Surveys, First Solar Electric Inc., Blythe, California. As project biologist, conducted nesting bird surveys and wrote nesting bird final reports.

Wind Energy Project Biological Technical Report, Confidential Client, Riverside, California. As project biologist, conducted general biological survey and vegetation mapping and wrote technical report.

Municipal

Warm Creek Conservation Basins Species Mitigation Plan, County of San Bernardino, Flood Control District, San Bernardino, California. Served as project biologist, wrote the Warm Creek Species Mitigation Plan for burrowing owl (*Athene cunicularia*) and nesting birds.

Tequesquite Creek Project Nesting Bird Survey Services, City of Riverside-Department of Public Works, Riverside, California. As project biologist, conducted a jurisdictional delineation and vegetation mapping in Tequesquite Creek/box springs channel. Also wrote proposal and final report.

Transportation

I-215 Keller Road Interchange Project, California Department of Transportation (Caltrans), Murrieta, California. As project biologist, conducted fairy shrimp (*Branchinecta spp.*) surveys, rare plant surveys, burrowing owl surveys, and general biological surveys. Currently writing natural environmental study report.

Water/Wastewater

North Norco Stage 11 Channel Improvements, Riverside County Flood Control and Water Conservation District, Norco, California. Wrote/constructed permit applications for Section 401 water quality certification, Clean Water Act Section 404 permitting, and streambed alteration agreement for North Norco channel improvements.

Operations and Maintenance (O&M) On Call Environmental Services Project Jurisdictional Delineation, County of San Bernardino-Flood Control District, San Bernardino, California. As project biologist, delineated jurisdictional waters for all water basins within the County of San Bernardino using ArcMap.

System Infrastructure Protection Program Environmental Impact Report (PIER), Metropolitan Water District of Southern California, Orange, California. As project biologist and biological monitor, conducted preconstruction nesting bird surveys and biological monitoring for geotechnical studies. Communicated with construction staff regarding avoidance measures and safety hazards in the area.

Biological Services for EIR Project Sensitivity Ranking System Development, County of San Bernardino-Flood Control District, San Bernardino, California. As project biologist, conducted biological sensitivity ranking for water facilities in the desert and mountain regions of San Bernardino County using ArcMap.

As-Needed Storm and Surface Water Permitting Services for Bena Landfill, Kern County Waste Management, Bakersfield, California. As project biologist, wrote an impact analysis for the Bena Landfill and assisted in the applications for the State Water Resources Control Board Section 401 water quality certification and California Department of Fish and Wildlife streambed alteration agreement permits for this project.

Relevant Previous Experience

Various Projects, ISCA Technologies Inc., Riverside, California. As project manager for all internal and external research and development projects for ISCA Technologies, reared multiple species of Coleoptera, Drosophila, Lepidoptera, and Hymenoptera and conducted laboratory and field experiments on these subjects. Wrote Small Business Innovation Research (SBIR) grants funded by the U.S. Department of Agriculture, the U.S. Department of Defense, the National Science Foundation, the National Institute of Health, and the Bill & Melinda Gates Foundation (funding up to $1 million per grant). Wrote monthly, quarterly, semiannual, and final reports for grants and privately funded research projects. Supervised biologists and interns. Scheduled, organized, prepared, and conducted meetings with collaborators, federal agencies and funding agencies. Provided updates to, assisted, and corresponded with research collaborators worldwide. Developed, planned, conducted, and analyzed laboratory and field experiments. Developed and implemented laboratory safety protocols. Edited grants, manuscripts, and reports. Registered new products with federal and state Environmental Protection Agencies.

Various Projects, U.S. Forest Service, Stanislaus National Forest, Sonora, California. As biological science technician for the Stanislaus National Forest, acted as crew leader for the wildlife crew (seven crew members) during the 2012 field season and for the botany crew (four crew members) during the 2012 and 2013 field seasons. Led and supervised the botany crew during threatened and sensitive plant surveys and habitat restoration projects. Led and supervised the wildlife crew during California spotted owl (*Strix occidentalis*), northern goshawk (*Accipiter gentilis*), and carnivore surveys. Conducted quality checks on wildlife and sensitive plant data survey forms, as well as conducting sensitive plant and wildlife surveys, inventories, and monitoring in support of ecological restoration and resource management projects. Collected, interpreted, and supervised data collection conducted with a high standard protocol of quality control.

Planned and developed sensitive plant and wildlife surveys, inventories, and monitoring studies. Using GIS, the California Natural Diversity Database (CNDDB), and Natural Resource Information System (NRIS), conducted prefield review analysis. Entered sensitive plant and wildlife surveys and occurrences as well as legacy data into Microsoft Access Database, GIS, CNDDB and NRIS. Interpreted aerial photos using GIS.

Followed all applicable rules, regulations, and protocols to perform tests, analyses, and surveys. Using adaptive management techniques identified appropriate alterations when needing to adjust protocols or work methods in order to resolve problems or unforeseen situations. Established equipment requirements for projects and informed crew of any changes in required equipment. Conducted conflict resolution discussions among coworkers when necessary and focused on maintaining positive crew dynamics. Led relevant safety meetings, created crew work schedules, and ensured that all crewmembers were conducting surveys efficiently while following all U.S. Forest Service safety protocols. Organized field and lab equipment and ordered supplies.

Wrote literature reviews, grants, and data summaries. Translated technical scientific data and concepts into easy-to-interpret format, using graphs, charts, tables, and presentations. Reformatted/updated survey and occurrence forms, developed and updated protocols, and created a working herbarium. Participated in outreach opportunities and developed partnerships within the community; organized and led volunteer workdays.

Research in Alvord Basin, Oregon, Georgia Southern University, Statesboro, Georgia. As graduate assistant, conducted literature reviews and authored and submitted grants. Wrote and edited multiple manuscripts for publication. Supervised three undergraduates in the field and laboratory over the course of two years. Created publishable-quality experimental designs, gaining professional knowledge of experimental procedure and design. Performed precise record keeping and data collection. Digitized habitat, morphology, performance, and kinematic data in MATLAB and Microsoft Excel. Created research presentations using Microsoft PowerPoint for lecture and poster presentation. Attended and presented at research seminars and research symposiums. Formulated feasible hypotheses and designed statistical sampling and analytical approaches. Analyzed data using multivariate statistical analyses in JMP 10.0 software. Captured lizards, measured their morphological features, and conducted experiments on the subjects in the field while following strict animal husbandry protocols. Filmed with high-speed digital cameras.

Georgia Southern University Herpetology Collection, Statesboro, Georgia. As curatorial assistant, Identified and digitized terrestrial and aquatic reptile and amphibian specimens including whole body organisms, bones, skin and eggs using Specify software. Identified all specimens at the species level. Organized legacy data.

Field Studies, Alvord Basin, Oregon. As field technician, provided field assistance while characterizing the evolution of habitat use, morphology and sprinting performance in desert lizards. Duties included capturing, conducting field experiments and releasing hundreds of lizards in the field while following strict animal husbandry protocols. Identified invertebrate species in lizard fecal samples. Collected extensive vegetation data. Performed precise record keeping and data collection.

Principles of Biology I, Georgia Southern University, Statesboro, Georgia. As lab instructor, implemented laboratory coursework, created and graded exams, and created and conducted lectures. Supervised one weekly section with 25 biology major undergraduates. Ensured proper laboratory safety and attire. Coursework focused on scientific method, microscopy, mitosis, solutions, dilutions, spectrophotometry, enzymes and catalysts, paper chromatography, DNA isolation, agarose gel electrophoresis, DNA fingerprinting, and PCR amplification.

Environmental Biology, Georgia Southern University, Statesboro, Georgia. As lab instructor, implemented laboratory coursework, created and graded exams, and created and conducted lectures. Supervised four weekly sections with 100 non-major undergraduates each semester. Ensured proper laboratory safety and attire. Coursework focused on scientific measurement, scientific investigation, allelopathy, sustainability, environmental microscopy, invasive species and biological control, lichens as bioindicators, population dynamics, and aquatic ecology. Independently identified and taught students how to identify microbes, aquatic species (including fish, macroinvertebrates, and microinvertebrates), lichens, plants, and various fungi using taxonomic keys and microscopes.

Ecological Field Methods and Research in Reptile Ecology, Alvord Basin, Fields, Oregon, Western Washington University. As teaching assistant, tracked desert horned lizards (*Phrynosoma platyrhinos*) using radio telemetry. Supervised 15 undergraduates. Trained students in plant and invertebrate identification and surveys. Maintained camp (repaired tools, cleaned and organized supplies, and cleaned camp). Trained students how to maintain a field notebook. Weighed, measured, and tagged captured lizards.

AmeriCorps Education, Georgia Sea Turtle Center, Jekyll Island, Georgia**.** Instructed and designed outreach programs, field trips, and adult educational programs directed toward sea turtle (Chelonioidea) anatomy, conservation, and rehabilitation. Assisted the husbandry department with surgeries, patient feedings, distributing medications, and physical therapy. Assisted with preparations for the release of sea turtles after rehabilitation. Duties include attachment of satellite tracking devices and insertion of microchips and flipper tags.

Specialized Training

- Successful CEQA Compliance – University of California, Los Angeles, Extension Center, December 2014
- Desert Tortoise Workshop – Ridgecrest, California, November 2014
- California Fairy Shrimp and Tadpole Identification – February 2015

Publications

Collins, C.E., R.E. Anderson, R.A., J.D. Self, and L.D. McBrayer. 2013. "Rock-Dwelling Lizards Exhibit Less Sensitivity of Sprint Speed to Increases in Substrate Rugosity." *Zoology* 116(3): 151–158.

Self, J.D., C.E. Collins, and L.D. McBrayer. In press. "Hurdling for Stability: Lizards Negotiate Obstacles by Altering Locomotor Posture, Kinematics, and Behavior." *Biological Journal of the Linnaean Society.*

Self, Jessica D. 2012. "The Effects of Locomotor Posture on Kinematics, Performance, and Behavior during Obstacle Negotiation in Lizards." Master's thesis; Georgia Southern University, Jack N. Averitt College of Graduate Studies, Department of Biology. *Electronic Theses & Dissertations*, Paper 10. http://digitalcommons.georgiasouthern.edu/etd/10.

Conference Presentations

"Biological Survey Methods." April 2015. Educational outreach presentation for California State University, San Diego undergraduates at 2015 Association of Environmental Professionals California Environmental Quality Act (CEQA) Practicum.

"Sprint Performance and Running Behavior of Obstacle Crossing in the Lizards Crotaphytus bicinctores, Gambelia wislizenii, Aspidoscelis tigris, and Sceloporus occidentalis." March 2012. Paper presented with L.D. McBrayer at Georgia Southern University Graduate Research Symposium. Statesboro, Georgia.

"Sprint Performance and Running Behavior of Obstacle Crossing in the Lizards Crotaphytus bicinctores, Gambelia wislizenii, Aspidoscelis tigris, and Sceloporus occidentalis." 2012. Paper presented with L.D. McBrayer at Society for Integrative and Comparative Biology, Annual Meeting. Charleston, South Carolina. January 2012.

Appendix H
Water Resources

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

Board of Directors

Dr. Clifford O. Young, Sr.
President
Linda Gonzalez
Vice President
Gregory Young
Director
Alan G. Dyer
Director
Donald Olinger
Director

West Valley Water District

Established as a public agency in 1952
West Valley Water District's mission is to provide a reliable, safe-drinking water supply to meet our customers' present and future needs at a reasonable cost and to promote water-use efficiency and conservation.

Administrative Staff

Thomas J. Crowley, P.E.
General Manager
Matthew H. Litchfield, P.E.
Assistant General Manager
Shanae Smith
Board Secretary

June 6, 2016

Mr. Vance C. Mape
Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, CA 92660

Subject: Water Supply Assessment for Western Realco – Cedar Avenue

Dear Mr. Mape,

West Valley Water District has completed its assessment of water supplies available for Western Realco as required by SB 610. The assessment projected water demands for the development utilizing the required information from the 2010 Regional Urban Water Management Plan (RUWMP). The assessment concludes that the projected water demand was accounted for in the 2010 RUWMP which demonstrated that sufficient supplies are available.

The Water Supply Assessment was adopted by the West Valley Water District Board of Directors at their regularly scheduled meeting on June 2, 2016. Enclosed are five (5) copies of the adopted assessment for your use. Should you have any questions please do not hesitate to contact me at (909) 820-3713.

Best Regards,

WEST VALLEY WATER DISTRICT

Linda Jadeski

Linda Jadeski
Engineering Services Manager

Cc: Enclosures

855 W. Base Line Rd., P.O. Box 920 | Rialto, CA 92377-0920
Ph: (909) 875-1804 | Fax: (909) 875-1849
www.wvwd.org

FAX (909) 875-7284 Administration
FAX (909) 875-1361 Engineering
FAX (909) 875-1849 Customer Service

Preliminary
Water Quality Management Plan
(WQMP)

For:

Bloomington Industrial Facility
Jurupa Avenue
Bloomington, CA 92316

APN: 0257-081-07 // 0257-091-07 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, 33

Prepared for:
Western Realco
500 Newport Center Drive #630
Newport Beach, CA 92660
Phone: (949) 720-3787
Contact: Jeremy Mape

Prepared by:
Thienes Engineering, Inc
14349 Firestone Boulevard
La Mirada, CA 90638
Phone: (714) 521-4811
Contact: Luis Prado (luisp@thieneseng.com)
Job No. 3329

Approval Date: _____
Implementation Date: _____

1st Submittal: March 17, 2015
2nd Submittal: _____
3rd Submittal: _____

Project Owner's Certification

This Water Quality Management Plan (WQMP) has been prepared for ***Western Realco*** by ***Thienes Engineering, Inc***. The WQMP is intended to comply with the requirements of the ***County of San Bernardino*** and the NPDES Areawide Stormwater Program requiring the preparation of a WQMP.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the San Bernardino County's Municipal Storm Water Management Program and the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors in interest and the city/county shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and fund) of the WQMP have been accepted and that the plan will be transferred to future successors."

Project Data			
Permit/Application Number(s):	PWXXXXXXXX LDXXXX	**Grading Permit Number(s):**	
Tract/Parcel Map Number(s):		**Building Permit Number(s):**	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):		APN: 0257-081-07 // 0257-091-07 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, 33	

Owner's Signature		
Owner Name: Jeremy Mape		
Title	Vice President	
Company	Western Realco	
Address	500 Newport Center Drive #630, Newport Beach, CA 92660	
Email	jmape@westernrealco.com	
Telephone #	(949) 720-3787	
Signature	**Date**	

Preparer's Certification

Project Data			
Permit/Application Number(s):	PWXXXXXXXX LDXXXX	**Grading Permit Number(s):**	
Tract/Parcel Map Number(s):		**Building Permit Number(s):**	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):		APN: 0257-081-07 // 0257-091-07 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, 33	

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of Regional Water Quality Control Board Order No. R8-2010-0036."

Engineer: Reinhard Stenzel		**PE Stamp Below**
Title	Director of Engineering	
Company	Thienes Engineering, Inc	
Address	14349 Firestone Boulevard, La Mirada, CA 90638	
Email	reinhard@thieneseng.com	
Telephone #	(714) 521-4811	
Signature		

Contents

Section 1 Discretionary Permit(s) 1-1
Section 2 Project Description 2-1
2.1 Project Information 2-1
2.2 Property Ownership/Management 2-2
2.3 Potential Stormwater Pollutants 2-2
2.4 Water Quality Credits 2-3
Section 3 Site and Watershed Description 3-1
Section 4 Best Management Practices (BMP) 4-1
4.1 Source Control BMP 4-1
4.1.1 Pollution Prevention 4-1
4.1.2 Preventive LID Site Design Practices 4-6
4.2 Project Performance Criteria 4-7
4.3 Project Conformance Analysis 4-13
4.3.1 Site Design Hydrologic Source Control BMP 4-15
4.3.2 Infiltration BMPs 4-17
4.3.3 Harvest and Use BMP 4-19
4.3.4 Biotreatment BMP 4-20
4.3.5 Conformance Summary 4-24
4.3.6 Hydromodification Control BMP 4-25
4.4 Alternative Compliance Plan (if applicable) 4-26
Section 5 Inspection and Maintenance Responsibility for Post Construction BMP 5-1
Section 6 WQMP Attachments 6-1
6.1 Site Plan and Drainage Plan 6-1
6.2 Electronic Data Submittal 6-1
6.3 Post Construction 6-1
6.4 Other Supporting Documentation 6-1

Forms

Form 1-1 Project Information 1-1
Form 2.1-1 Description of Proposed Project 2-1
Form 2.2-1 Property Ownership/Management 2-2
Form 2.3-1 Pollutants of Concern 2-2
Form 2.4-1 Water Quality Credits 2-3
Form 3-1 Site Location and Hydrologic Features 3-1
Form 3-2 Existing Hydrologic Characteristics for Drainage Area (DA) 3-2
Form 3-3 Watershed Description 3-3
Form 4.1-1 Non-Structural Source Control BMPs 4-2
Form 4.1-2 Structural Source Control BMPs 4-4
Form 4.1-3 Preventive LID Site Design Practices Checklist 4-6
Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume 4-7
Form 4.2-2 Summary of HCOC Assessment 4-9
Form 4.2-3 HCOC Assessment for Runoff Volume 4-10
Form 4.2-4 HCOC Assessment for Time of Concentration 4-11
Form 4.2-5 HCOC Assessment for Peak Runoff 4-12
Form 4.3-1 Infiltration BMP Feasibility 4-14
Form 4.3-2 Site Design Hydrologic Source Control BMPs 4-16
Form 4.3-3 Infiltration LID BMP (including underground BMPs) 4-18
Form 4.3-4 Harvest and Use BMPs 4-19
Form 4.3-5 Selection and Evaluation of Biotreatment BMP 4-20
Form 4.3-6 Volume Based Biotreatment – Bioretention and Planter Boxes with Underdrains 4-21
Form 4.3-7 Volume Based Biotreatment – Constructed Wetlands and Extended Detention 4-22
Form 4.3-8 Flow Based Biotreatment 4-23
Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate 4-24
Form 4.3-10 Hydromodification Control BMPs 4-25
Form 5-1 BMP Inspection and Maintenance 5-1

Attachments

Attachment A: Existing Condition Site Photos
Attachment B: BMP Design Calculations & Supporting Documentation
Attachment C: WQMP Site Map
Attachment D: WQMP and Stormwater BMP Transfer, Access and Maintenance Agreement
Attachment E: Educational Materials
Attachment F: Infiltration Report (pending)

Section 1 Discretionary Permit(s)

Form 1-1 Project Information					
Project Name	Bloomington Industrial Facility				
Project Owner Contact Name:	Jeremy Mape				
Mailing Address:	2817 E. Cedar Street, Suite 200 Ontario, CA 91761	**E-mail Address:**	jmape@westernrealco.com	**Telephone:**	(949) 720-3787
Permit/Application Number(s):	PWXXXXXXXX LDXXXX		**Tract/Parcel Map Number(s):**		
Additional Information/ Comments:	n/a				
Description of Project:	The project site encompasses approximately 34.5 acres. Proposed improvements to the site include one warehouse type building with an area of approximately 677,835 square feet. Truck yards will be along the north and south side of the building. Vehicle parking is to the east of the building with additional vehicle parking to the south of the southern truck dock. Infiltration basins are along the southerly property line. The remainder of the site will be landscaped. Runoff from the north truck yard, north half of the building, the west drive aisle, and the westerly portion of the southern truck yard will drain into catch basins in the truck yard. A storm drain will convey this runoff westerly, then southerly to infiltration basin #1. Runoff from the east vehicle parking, southern portion of the building, and the eastern portion of the southern truck yard will drain into catch basin in the truck yard. A storm drain will convey this runoff southerly towards infiltration basin #2. Approximately 2.0 acres, along the easterly and southerly property line, comprised mostly of landscape (some driveway) will drain offsite without treatment. A v-gutter will be installed along the north property line to convey the runoff flowing in the existing swale north of the property. The v-gutter will release the runoff into Cedar Ave.				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.	n/a				

Section 2 Project Description

2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for Conceptual/ Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

Form 2.1-1 Description of Proposed Project					
[1] **Development Category (Select all that apply):**					
☐ Significant re-development involving the addition or replacement of 5,000 ft^2 or more of impervious surface on an already developed site	☒ New development involving the creation of 10,000 ft^2 or more of impervious surface collectively over entire site	☐ Automotive repair shops with standard industrial classification (SIC) codes 5013, 5014, 5541, 7532-7534, 7536-7539	☐ Restaurants (with SIC code 5812) where the land area of development is 5,000 ft^2 or more		
☐ Hillside developments of 5,000 ft^2 or more which are located on areas with known erosive soil conditions or where the natural slope is 25 percent or more	☐ Developments of 2,500 ft^2 of impervious surface or more adjacent to (within 200 ft) or discharging directly into environmentally sensitive areas or waterbodies listed on the CWA Section 303(d) list of impaired waters.	☒ Parking lots of 5,000 ft^2 or more exposed to storm water	☐ Retail gasoline outlets that are either 5,000 ft^2 or more, or have a projected average daily traffic of 100 or more vehicles per day		
☐ Non-Priority / Non-Category Project *May require source control LID BMPs and other LIP requirements. Please consult with local jurisdiction on specific requirements.*					
[2] **Project Area (ft^2):**	1,502,820 (34.50 acres)*	[3] **Number of Dwelling Units:**	n/a	[4] **SIC Code:**	1541
[5] **Is Project going to be phased?** ☐Yes ☒No *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*					
[6] **Does Project include roads?** ☐Yes ☒No *If yes, ensure that applicable requirements for road projects are addressed (see Appendix A of TGD for WQMP)*					

*Includes 2.0 acres mostly of landscape (and some driveway) draining offsite along Jurupa and Cedar Avenue.

2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

Form 2.2-1 Property Ownership/Management
Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:
Western Realco 2817 E. Cedar Street, Suite 200 Ontario, CA 91761 Phone: (949) 720-3787 Contact: Jeremy Mape No infrastructure will be transferred to a public agency after project completion. A property owner's association (POA) will not be formed for long-term maintenance of project stormwater facilities.

2.3 Potential Stormwater Pollutants

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-3 in the TGD for WQMP).

Form 2.3-1 Pollutants of Concern

Pollutant	**Please check: E = Expected, N = Not Expected**		**Additional Information and Comments**
Pathogens (Bacterial / Virus)	E ☒	N ☐	Receiving Water impairments shown in Form 3-3. Including petroleum hydrocarbons. Bacterial indicators are routinely detected in pavement runoff.
Nutrients - Phosphorous	E ☒	N ☐	
Nutrients - Nitrogen	E ☒	N ☐	Receiving Water impairments shown in Form 3-3. Expected pollutant if landscaping exists on-site.
Noxious Aquatic Plants	E ☒	N ☐	
Sediment	E ☒	N ☐	Expected pollutant if landscaping exists on-site.
Metals	E ☒	N ☐	Receiving Water impairments shown in Form 3-3.
Oil and Grease	E ☒	N ☐	
Trash / Debris	E ☒	N ☐	
Pesticides / Herbicides	E ☒	N ☐	
Organic Compounds	E ☒	N ☐	Expected pollutant if landscaping exists on-site. Including petroleum hydrocarbons and solvents.
Other:			

2.4 Water Quality Credits

A water quality credit program is applicable for certain types of development projects if it is not feasible to meet the requirements for on-site LID. Proponents for eligible projects, as described below, can apply for water quality credits that would reduce project obligations for selecting and sizing other treatment BMP or participating in other alternative compliance programs. Refer to Section 6.2 in the TGD for WQMP to determine if water quality credits are applicable for the project.

Form 2.4-1 Water Quality Credits			
[1] **Project Types that Qualify for Water Quality Credits:** *Select all that apply*			
☐ Redevelopment projects that reduce the overall impervious footprint of the project site. [Credit = % impervious reduced]	Higher density development projects ☐ Vertical density [20%] ☐ 7 units/ acre [5%]	☐ Mixed use development, (combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that demonstrate environmental benefits not realized through single use projects) [20%]	☐ Brownfield redevelopment (redevelop real property complicated by presence or potential of hazardous contaminants) [25%]
☐ Redevelopment projects in established historic district, historic preservation area, or similar significant core city center areas [10%]	☐ Transit-oriented developments (mixed use residential or commercial area designed to maximize access to public transportation) [20%]	☐ In-fill projects (conversion of empty lots & other underused spaces < 5 acres, substantially surrounded by urban land uses, into more beneficially used spaces, such as residential or commercial areas) [10%]	☐ Live-Work developments (variety of developments designed to support residential and vocational needs) [20%]
[2] **Total Credit %:** n/a *(Total all credit percentages up to a maximum allowable credit of 50 percent)*			
Description of Water Quality Credit Eligibility (if applicable)	n/a		

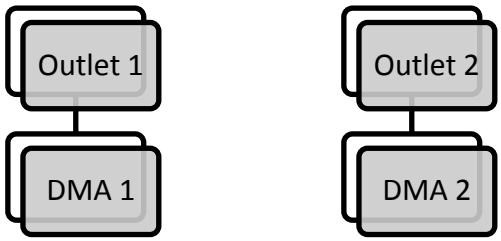
The proposed project will ***not*** utilize any water quality credits.

Section 3 Site and Watershed Description

Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed DMAs) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. Complete form 3.2 for each DA on the project site.

Form 3-1 Site Location and Hydrologic Features

Site coordinates *Take GPS measurement at approximate center of site*	**Latitude:** 34.050492	**Longitude:** -117.395897	**Thomas Bros Map page:** Page 645
[1] **San Bernardino County climatic region:** ☒Valley ☐Mountain ☐Desert			
[2] **Does the site have more than one drainage area (DA):** ☒Yes ☐No *If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached.*			



Conveyance	Briefly describe on-site drainage features to convey runoff that is not retained within a DMA.
DMA 1 flows to Outlet 1	An infiltration basin (Infiltration Basin "1") will be utilized to treat the water quality volume. It will receive the DCV through a bubbler inlet and higher flow will bypass the basin via parkway culvert to Jurupa Avenue.
DMA F flows to Outlet 2	An infiltration basin (Infiltration Basin "2") will be utilized to treat the water quality volume. It will receive the DCV through a bubbler inlet and higher flow will bypass the basin via parkway culvert to Jurupa Avenue.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area (DA)

For each drainage area's sub-watershed DMA, provide the following characteristics	Hydrology Nodes 100-104	Hydrology Nodes 200-202	Hydrology Nodes 210-211	n/a
[1] **DMA drainage area (ft^2)**	871,200 (20.0 acres)	474,804 (10.90 acres)	153,816 (3.60 acres)	n/a
[2] **Existing site impervious area (ft^2)**	34,067	25,508	3,840	n/a
[3] **Antecedent moisture condition** *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	AMC II	AMC II	AMC II	n/a
[4] **Hydrologic soil group** *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	HSG A	HSG A	HSG A	n/a
[5] **Longest flowpath length (ft)**	1,822	1,250	705	n/a
[6] **Longest flowpath slope (ft/ft)**	0.010	0.012	0.12	n/a
[7] **Current land cover type(s)** *Select from Fig C-3 of Hydrology Manual*	Barren	Barren	Barren	n/a
[8] **Pre-developed pervious area condition:** *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% See Attachment A for photos of site to support rating*	Poor	Poor	Poor	n/a

Form 3-3 Watershed Description	
Receiving Waters *Refer to Watershed Mapping Tool - http://sbcounty.permitrack.com/WAP* *See 'Drainage Facilities" link at this website*	Santa Ana River, Reach 4 Santa Ana River, Reach 3 Prado Dam Santa Ana River, Reach 2 Santa Ana River, Reach 1 Pacific Ocean
Applicable TMDLs *Refer to Local Implementation Plan*	Santa Ana River, Reach 4: None Santa Ana River, Reach 3: Pathogens, Nitrate Prado Dam: Pathogens Santa Ana River, Reach 2: None Santa Ana River, Reach 1: None Pacific Ocean: None
303(d) listed impairments *Refer to Local Implementation Plan and Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP* *and State Water Resources Control Board website – http://www.waterboards.ca.gov/santaana/water_iss ues/programs/tmdl/index.shtml*	Santa Ana River, Reach 4: Pathogens Santa Ana River, Reach 3: Copper, Lead, Pathogens Prado Dam: None Santa Ana River, Reach 2: Indicator Bacteria Santa Ana River, Reach 1: None Pacific Ocean: None
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	n/a
Unlined Downstream Water Bodies *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	Santa Ana River
Hydrologic Conditions of Concern	☐ Yes *Complete Hydrologic Conditions of Concern (HCOC) Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-10 in submittal* ☒ No
Watershed–based BMP included in a RWQCB approved WAP	☐ Yes *Attach verification of regional BMP evaluation criteria in WAP* • *More Effective than On-site LID* • *Remaining Capacity for Project DCV* • *Upstream of any Water of the US* • *Operational at Project Completion* • *Long-Term Maintenance Plan* ☒ No

Section 4 Best Management Practices (BMP)

4.1 Source Control BMP

4.1.1 Pollution Prevention

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	X		Property owner will familiarize him/herself with the educational materials in Attachment "E" and the contents of the WQMP.
N2	Activity Restrictions	X		No outdoor work areas, processing, storage or wash area. Activities are restricted to only those for which a BMP has been implemented. Pesticide control through licensed application.
N3	Landscape Management BMPs	X		Irrigation must be consistent with San Bernardino's Water Conservation Ordinance. Fertilizer and pesticide usage will be consistent with County Management Guidelines for Use of Fertilizers and Pesticides.
N4	BMP Maintenance	X		BMP maintenance, implementation schedules, and responsible parties are included with each specific BMP narrative.
N5	Title 22 CCR Compliance (How development will comply)		X	No hazardous wastes onsite.
N6	Local Water Quality Ordinances	X		Owner/tenant will be in compliance with Local Water Quality Ordinances.
N7	Spill Contingency Plan	X		Owner/tenant will have a spill contingency plan, a separate document, based on specific site needs.
N8	Underground Storage Tank Compliance		X	No USTs onsite.
N9	Hazardous Materials Disclosure Compliance		X	No hazardous materials onsite.
N10	Uniform Fire Code Implementation	X		Owner will comply with Article 80 of the Uniform Fire Code enforced by the fire protection agency. The facility operators will be educated annually regarding requirements for handling, storage and proper disposal of hazardous substances.
N11	Litter/Debris Control Program	X		Contract with their landscape maintenance firm to provide this service during regularly schedule maintenance. They are required to implement trash management and litter control procedures in the common areas aimed at reducing pollution of drainage water.
N12	Employee Training	X		The owner will ensure that tenants are also familiar with onsite BMPs and necessary maintenance required of the tenants. Owner will check with City and County at least once a year to obtain new or updated educational materials and provide these materials to tenants. Employees shall be trained to clean up minor spills and participate in ongoing maintenance. The WQMP requires annual employee training and new hires within 2 months.
N13	Housekeeping of Loading Docks	X		Keep all fluids indoors. Clean up spills immediately and keep spills from entering storm drain system. No direct discharges into the storm drain system. Area shall be inspected weekly for proper containment and practices with spills cleaned up immediately and disposed of properly.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N14	Catch Basin Inspection Program	X		Monthly inspection by property owner's designee. Sumps will be vacuumed when sediment or trash becomes 2-inches deep and disposed of properly.
N15	Vacuum Sweeping of Private Streets and Parking Lots	X		All landscape maintenance contractors will be required to sweep up all landscape cuttings, mowings and fertilizer materials off paved areas weekly and dispose of properly. Parking areas and drive ways will be swept monthly by sweeping contractor.
N16	Other Non-structural Measures for Public Agency Projects		X	Not a public agency project.
N17	Comply with all other applicable NDPES permits	X		Will comply with Construction General Permit by submitting an NOI and obtaining a WDID.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage (CASQA New Development BMP Handbook SD-13)	X		"No Dumping – Drains to River" stencils will be applied. Legibility of stencil will be maintained on a yearly basis.
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)		X	No outdoor material storage areas onsite.
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	X		Paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements diverted around the area, screened or walled to prevent off-site transport of trash. Provide solid roof or awning to prevent direct contact with rainfall.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	X		Irrigation systems shall include reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines. Timers will be used to avoid over watering and watering cycles and duration shall be adjusted seasonally by the landscape maintenance contractor. The landscaping areas will be grouped with plants that have similar water requirements. Native or drought tolerant species shall also be used where appropriate to reduce excess irrigation runoff and promote surface filtration.
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	X		Where applicable, landscaped areas will be depressed by 1-2 inches in order to increase retention of stormwater/irrigation water and promote infiltration.
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)		X	All slopes will be vegetated and maintained to prevent erosion and transport of sediment. Energy dissipaters are installed at all inlets into the basin.
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)		X	Finished goods being loaded and unloaded at the docks may have the potential to contribute to stormwater pollution in the event of a spill. In lieu of covered docks (which is not practical for a site of this magnitude), a spill contingency plan will be available and employees shall be trained to clean up minor spills and participate in ongoing maintenance. The WQMP requires annual employee training and new hires within 2 months. Docks are prohibited from directly connecting to a MS4 and are disconnected at the downstream BMP.
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)		X	No maintenance bays onsite.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)		X	No vehicle wash areas onsite.
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)		X	No outdoor processing areas onsite.
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)		X	No equipment wash areas onsite.
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)		X	No fueling areas onsite.
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)		X	No hillsides onsite.
S14	Wash water control for food preparation areas		X	No food preparation onsite.
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)		X	No community cars wash racks onsite.

4.1.2 Preventive LID Site Design Practices

Site design practices associated with new LID requirements in the MS4 Permit should be considered in the earliest phases of a project. Preventative site design practices can result in smaller DCV for LID BMP and hydromodification control BMP by reducing runoff generation. Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Form 4.1-3 Preventive LID Site Design Practices Checklist	
Site Design Practices *If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets.*	
Minimize impervious areas: ☐Yes ☒No	The project is a new development and will increase impervious areas, however, we will utilize an infiltration facility to collect runoff from impervious areas.
Maximize natural infiltration capacity: ☒Yes ☐No	The infiltration facility will maximize natural infiltration. Depressed landscaping are also utilized where applicable.
Preserve existing drainage patterns and time of concentration: ☒Yes ☐No	Post-development drainage patterns will mimic pre-development conditions. Stormwater will be detained in an infiltration facility and mimic the time of concentration compared to existing condition.
Disconnect impervious areas: ☒Yes ☐No	The proposed infiltration facility, an infiltration basin, will disconnect impervious areas from the project site before discharging offsite.
Protect existing vegetation and sensitive areas: ☐Yes ☒No	Not applicable, there is no existing vegetation onsite (see Attachment A for site photos).
Re-vegetate disturbed areas: ☐Yes ☒No	Not applicable, development consists of a light industrial facility. Most of the disturbed areas will be paved; however, all disturbed areas will be collected by the infiltration facility for treatment. New vegetation is proposed in the basin and landscaped areas.
Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: ☒Yes ☐No	Signs will be provided to prohibit heavy construction vehicles from unnecessary soil compaction of the infiltration facility.
Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: ☐Yes ☒No	Underground piping and imperviously lined swales are located at truck and car loading areas that could not be substituted with vegetated swales. All imperviously lined swales will be taken to the infiltration facility for treatment.
Stake off areas that will be used for landscaping to minimize compaction during construction : ☒Yes ☐No	Landscaped areas will be staked to minimize unnecessary compaction during construction.

4.2 Project Performance Criteria

The purpose of this section of the Project WQMP is to establish targets for post development hydrology based on performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection of any downstream waterbody segments with a HCOC. ***If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.***

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), the San Bernardino County Stormwater Program requires use of the P6 method (MS4 Permit Section XI.D.6a.ii) – Form 4.2-1
- For HCOC pre- and post-development hydrologic calculation, the San Bernardino County Stormwater Program requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 mi2), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for HCOC performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume		
[1] **Project area (ft^2):** 906,048 DMA 1 (20.8 ac)*	[2] **Imperviousness after applying preventative site design practices (Imp%):** 90%	[3] **Runoff Coefficient (R_c):** 0.730 *$R_C = 0.858(Imp\%)^3 - 0.78(Imp\%)^2 + 0.774(Imp\%) + 0.04$*
* **Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in):** 0.519 *http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html*		
[5] **Compute P6, Mean 6-hr Precipitation (inches):** 0.768 *P6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1* *(Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*		
[6] **Drawdown Rate** *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*		24-hrs ☐ 48-hrs ☒
[7] **Compute design capture volume, DCV (ft^3):** 83,179 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*		
[1] **Project area (ft^2):** 509,652 DMA B (11.70 ac)*	[2] **Imperviousness after applying preventative site design practices (Imp%):** 90%	[3] **Runoff Coefficient (R_c):** 0.730 *$R_C = 0.858(Imp\%)^3 - 0.78(Imp\%)^2 + 0.774(Imp\%) + 0.04$*
* **Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in):** 0.519 *http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html*		

[5] **Compute P6, Mean 6-hr Precipitation (inches):** 0.768 *P6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1* *(Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*	
[6] **Drawdown Rate** *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒
[7] **Compute design capture volume, DCV (ft^3):** 46,788 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*	

*Excludes 2.0 acres of mostly of landscape (and some driveway) draining offsite along Jurupa and Cedar Avenue.

Form 4.2-2 Summary of HCOC Assessment

Does project have the potential to cause or contribute to an HCOC in a downstream channel: ☐Yes ☒No

Go to: http://sbcounty.permitrack.com/WAP/

If "Yes", then complete HCOC assessment of site hydrology for 2yr storm event using Forms 4.2-3 through 4.2-5 and insert results below (Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual)

If "No," then proceed to Section 4.3 Project Conformance Analysis

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	[1] n/a *Form 4.2-3 Item 12*	[2] n/a *Form 4.2-4 Item 13*	[3] n/a *Form 4.2-5 Item 10*
Post-developed	[4] n/a *Form 4.2-3 Item 13*	[5] n/a *Form 4.2-4 Item 14*	[6] n/a *Form 4.2-5 Item 14*
Difference	[7] n/a *Item 4 – Item 1*	[8] n/a *Item 5 – Item 2*	[9] n/a *Item 6 – Item 3*
Difference (as % of pre-developed)	[10] n/a *Item 7 / Item 1*	[11] n/a *Item 8 / Item 2*	[12] n/a *Item 9 / Item 3*

Form 4.2-3 HCOC Assessment for Runoff Volume

Compute weighted curve number for pre and post developed conditions	Pre-developed DA *Add more columns if more than 4 DMA*				Post-developed DA *Add more columns if more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
[1] **Land Cover type**								
[2] **Hydrologic Soil Group (HSG)**								
[3] **DMA Area, ft^2** *sum of areas of DMA should equal area of DA*								
[4] **Curve Number (CN)** *Use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*								
	[5] **Pre-Developed area-weighted CN:**				[6] **Post-Developed area-weighted CN:**			
	[7] **Pre-developed soil storage capacity, S (in):** *S = (1000 / Item 5) - 10*				[8] **Post-developed soil storage capacity, S (in):** *S = (1000 / Item 6) - 10*			
	[9] **Initial abstraction, I_a (in):** *I_a = 0.2 * Item 7*				[10] **Initial abstraction, I_a (in):** *I_a = 0.2 * Item 8*			
[11] **Precipitation for 2 yr, 24 hr storm (in):** *Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html*								
[12] **Pre-developed Volume (ft^3):** *V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*								
[13] **Post-developed Volume (ft^3):** *V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*								
[14] **Volume Reduction needed to meet HCOC Requirement, (ft^3):** *V_{HCOC} = (Item 13 * 0.95) – Item 12*								

Form 4.2-4 HCOC Assessment for Time of Concentration

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

Variables	Pre-developed DA *Add more columns if more than 4 DMA*				Post-developed DA *Add more columns if more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
[1] **Length of flowpath (ft)** *Use Form 3-2 Item 5 for pre-developed condition*								
[2] **Change in elevation (ft)**								
[3] **Slope (ft/ft), So = Item 2 / Item 1**								
[4] **Land cover**								
[5] **Initial DMA Time of Concentration (min)** *Appendix C-1 of the TGD for WQMP*								
[6] **Length of conveyance from DMA outlet to project site outlet (ft)** *May be zero if DMA outlet is at project site outlet*								
[7] **Cross-sectional area of channel (ft2)**								
[8] **Wetted perimeter of channel (ft)**								
[9] **Manning's roughness of channel (n)**								
[10] **Channel flow velocity (ft/sec)** V_{fps} = (1.49 /Item 9) * (Item 7/Item 8)$^{0.67}$ * (Item 3)$^{0.5}$								
[11] **Travel time to outlet (min)** T_t = Item 6 / (Item 10 * 60)								
[12] **Total time of concentration (min)** T_c = Item 5 + Item 11								
[13] **Pre-developed time of concentration (min):** *Minimum of Item 12 pre-developed DMA*								
[14] **Post-developed time of concentration (min):** *Minimum of Item 12 post-developed DMA*								
[15] **Additional time of concentration needed to meet HCOC requirement (min):** $T_{C\text{-}HCOC}$ = (Item 14 * 0.95) – Item 13								

Form 4.2-5 HCOC Assessment for Peak Runoff

Compute peak runoff for pre and post developed conditions

Variables		Pre-developed DA *Add more columns if more than 3 DMA*			Post-developed DA *Add more columns if more than 3 DMA*		
		DMA A	**DMA B**	**DMA C**	**DMA A**	**DMA B**	**DMA C**
[1] **Rainfall Intensity for storm duration equal to time of concentration** *I_{peak} = 10^(LOG Form 4.2-1 Item 4 - 0.6 LOG Form 4.2-4 Item 5 /60)*							
[2] **Drainage Area of each DMA (ft2)** *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[3] **Ratio of pervious area to total area** *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[4] **Pervious area infiltration rate (in/hr)** *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*							
[5] **Maximum loss rate (in/hr)** *F_m = Item 3 * Item 4* *Use area-weighted Fm from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[6] **Peak Flow from DMA (cfs)** *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*							
[7] **Time of concentration adjustment factor for other DMA to site discharge point** *Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)*	**DMA A**	*n/a*			*n/a*		
	DMA B		*n/a*			*n/a*	
	DMA C			*n/a*			*n/a*

[8] **Pre-developed Q_p at T_c for DMA A:**	[9] **Pre-developed Q_p at T_c for DMA B:**	[10] **Pre-developed Q_p at T_c for DMA C:**
*Q_p = Item 6_{DMAA} + [Item 6_{DMAB} * (Item 1_{DMAA} – Item 5_{DMAB}) / (Item 1_{DMAB} - Item 5_{DMAB}) * Item $7_{DMAA/2}$] + [Item 6_{DMAC} * (Item 1_{DMAA} - Item 5_{DMAC}) / (Item 1_{DMAC} - Item 5_{DMAC}) * Item $7_{DMAA/3}$]*	*Q_p = Item 6_{DMAB} + [Item 6_{DMAA} * (Item 1_{DMAB} – Item 5_{DMAA}) / (Item 1_{DMAA} - Item 5_{DMAA}) * Item $7_{DMAB/1}$] + [Item 6_{DMAC} * (Item 1_{DMAB} - Item 5_{DMAC}) / (Item 1_{DMAC} - Item 5_{DMAC}) * Item $7_{DMAB/3}$]*	*Q_p = Item 6_{DMAC} + [Item 6_{DMAA} * (Item 1_{DMAC} – Item 5_{DMAA}) / (Item 1_{DMAA} - Item 5_{DMAA}) * Item $7_{DMAC/1}$] + [Item 6_{DMAB} * (Item 1_{DMAC} - Item 5_{DMAB}) / (Item 1_{DMAB} - Item 5_{DMAB}) * Item $7_{DMAC/2}$]*

11 Peak runoff from pre-developed condition confluence analysis (cfs):
Maximum of Item 8, 9, and 10

12 Post-developed Q_p at T_c for DMA A:	***13 Post-developed Q_p at T_c for DMA B:***	***14 Post-developed Q_p at T_c for DMA C:***
Same as Item 8 for post-developed values	*Same as Item 9 for post-developed values*	*Same as Item 10 for post-developed values*

15 Peak runoff from post-developed condition confluence analysis (cfs):
Maximum of Item 12, 13, and 14

16 Peak runoff reduction needed to meet HCOC Requirement (cfs):
*$Q_{p\text{-}HCOC}$ = (Item 14 * 0.95) – Item 11*

4.3 Project Conformance Analysis

Complete the following forms for each project site DA to document that the proposed LID BMPs conform to the project DCV developed to meet performance criteria specified in the MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the MS4 Permit (see Section 5.3.1 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design and Hydrologic Source Controls (Form 4.3-2)
- Retention and Infiltration (Form 4.3-3)
- Harvested and Use (Form 4.3-4) or
- Biotreatment (Form 4.3-5).

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2.1 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is "Yes," provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Forms 4.3-2 and 4.3-4 to determine the feasibility of applicable HSC and harvest and use BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable HSC BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of LID HSC, retention and infiltration, and harvest and use BMPs are unable to mitigate the entire DCV, then biotreatment BMPs may be implemented by the project proponent. If biotreatment BMPs are used, then they must be sized to provide sufficient capacity for effective treatment of the remainder of the volume-based performance criteria that cannot be achieved with LID BMPs (TGD for WQMP Section 5.4.4.2). Under no circumstances shall any portion of the DCV be released from the site without effective mitigation and/or treatment.

Form 4.3-1 Infiltration BMP Feasibility

Feasibility Criterion – Complete evaluation for each DA on the Project Site
[1] **Would infiltration BMP pose significant risk for groundwater related concerns?** ☐Yes ☒No *Refer to Section 5.3.2.1 of the TGD for WQMP*
If Yes, Provide basis: (attach)
[2] **Would installation of infiltration BMP significantly increase the risk of geotechnical hazards?** ☐Yes ☒No *(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):* • *The location is less than 50 feet away from slopes steeper than 15 percent* • *The location is less than eight feet from building foundations or an alternative setback.* • *A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.*
If Yes, Provide basis: (attach)
[3] **Would infiltration of runoff on a Project site violate downstream water rights?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[4] **Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[5] **Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[6] **Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses?** ☐Yes ☒No *See Section 3.5 of the TGD for WQMP and WAP*
If Yes, Provide basis: (attach)
[7] **Any answer from Item 1 through Item 3 is "Yes":** ☐Yes ☒No *If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 9 below.*
[8] **Any answer from Item 4 through Item 6 is "Yes":** ☐Yes ☒No *If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP.* *If no, then proceed to Item 9, below.*
[9] **All answers to Item 1 through Item 6 are "No":** ☒Yes ☐No *Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.* *Proceed to Form 4.3-2, Hydrologic Source Control BMP.*

4.3.1 Site Design Hydrologic Source Control BMP

Section XI.E. of the Permit emphasizes the use of LID preventative measures; and the use of LID HSC BMPs reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable HSC shall be provided except where they are mutually exclusive with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of HSC, if a project cannot feasibly meet BMP sizing requirements or cannot fully address HCOCs, feasibility of all applicable HSC must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design HSC BMP. Refer to Section 5.4.1 in the TGD for more detailed guidance.

Form 4.3-2 Site Design Hydrologic Source Control BMPs

[1] **Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP):** ☐Yes ☒No *If yes, complete Items 2-5; If no, proceed to Item 6*			
Variables *Aggregate impervious area dispersion with equal ratios of pervious to impervious;*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[2] **Total impervious area draining to pervious area**			
[3] **Ratio of pervious area receiving runoff to impervious area**			
[4] **Retention volume achieved from impervious area dispersion (ft^3)** *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*			
[5] **Sum of retention volume achieved from impervious area dispersion (ft^3):** *$V_{retention}$ = Sum of Item 4 for all BMPs*			
[6] **Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens):** ☐Yes ☒No *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[7] **Ponding surface area (ft^2)**			
[8] **Ponding depth (ft)**			
[9] **Surface area of amended soil/gravel (ft^2)**			
[10] **Average depth of amended soil/gravel (ft)**			
[11] **Average porosity of amended soil/gravel**			
[12] **Retention volume achieved from on-lot infiltration (ft^3)** *$V_{retention}$ = (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*			
[13] **Runoff volume retention from on-lot infiltration (ft^3):** *$V_{retention}$ = Sum of Item 12 for all BMPs*			
[14] **Implementation of evapotranspiration BMP (green, brown, or blue roofs):** ☐Yes ☒No *If yes, complete Items 15-20. If no, proceed to Item 21*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[15] **Rooftop area planned for ET BMP (ft^2)**			
[16] **Average wet season ET demand (in/day)** *Use local values, typical ~ 0.1*			
[17] **Daily ET demand (ft^3/day)** *Item 15 * (Item 16 / 12)*			
[18] **Drawdown time (hrs)** *Copy Item 6 in Form 4.2-1*			
[19] **Retention Volume (ft^3)** *$V_{retention}$ = Item 17 * (Item 18 / 24)*			
[20] **Runoff volume retention from evapotranspiration BMPs (ft^3):** *V = Sum of Item 19 for all BMPs*			
[21] **Implementation of Street Trees:** ☐Yes ☒No *If yes, complete Items 20-2. If no, proceed to Item 26*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[22] **Number of Street Trees**			
[23] **Average canopy cover over impervious area (ft^2)**			
[24] **Runoff volume retention from street trees (ft^3)** *$V_{retention}$ = Item 22 * Item 23 * (0.05/12) assume runoff retention of 0.05 inches*			
[25] **Runoff volume retention from street tree BMPs (ft^3):** *$V_{retention}$ = Sum of Item 24 for all BMPs*			
[26] **Implementation of residential rain barrels/cisterns:** ☐Yes ☒No *If yes, complete Items 27-28; If no, proceed to Item 30*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[27] **Number of rain barrels/cisterns**			
[28] **Runoff volume retention from rain barrels/cisterns (ft^3)** *$V_{retention}$ = Item 27 * 3*			
[29] **Runoff volume retention from residential rain barrels/Cisterns (ft^3):** *$V_{retention}$ =Sum of Item 28 for all BMPs*			
[30] **Total Retention Volume from Site Design Hydrologic Source Control BMPs:** *Sum of Items 5, 13, 20, 25 and 29*			

4.3.2 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix D of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5.1 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

Form 4.3-3 Infiltration LID BMP (including underground BMPs)

[1] **Remaining LID DCV not met by site design HSC BMP (ft^3):** 129,967
V = Form 4.2-1 Item 7 - Form 4.3-2 Item 30

BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP)*	**DMA 1 Infiltration Basin #1**	**DMA 2 Infiltration Basin #2**	**n/a**	**n/a**
[2] **Infiltration rate of underlying soils (in/hr)** *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods*	2.5	2.5	n/a	n/a
[3] **Infiltration safety factor** *See TGD Section 5.4.2 and Appendix D*	2.0	2.0	n/a	n/a
[4] **Design percolation rate (in/hr)** *P_{design} = Item 2 / Item 3*	1.25	1.25	n/a	n/a
[5] **Ponded water drawdown time (hr)** *Copy Item 6 in Form 4.2-1*	48	48	n/a	n/a
[6] **Maximum ponding depth (ft)** *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	5.0	5.0	n/a	n/a
[7] **Ponding Depth (ft)** *d_{BMP} = Minimum of (1/12 * Item 4 * Item 5) or Item 6*	3.67	2.85	n/a	n/a
[8] **Infiltrating surface area, SA (ft^2)** *The lesser of the area needed for BMP infiltration of full DCV or minimum space requirements from Table 5-7 of the TGD for WQMP*	18,835	12,276	n/a	n/a
[9] **Amended soil depth, d_{media} (ft)** *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*	n/a	n/a	n/a	n/a
[10] **Amended soil porosity**	n/a	n/a	n/a	n/a
[11] **Gravel depth, d_{media} (ft)** *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*	n/a	n/a	n/a	n/a
[12] **Gravel porosity**	n/a	n/a	n/a	n/a
[13] **Duration of storm as basin is filling (hrs)** *Typical ~ 3hrs*	3	3	n/a	n/a
[14] **Above Ground Retention Volume (ft^3)** *$V_{retention}$ = Item 8 * [Item7 + (Item 9 retention * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	83,179	47,204	n/a	n/a
[15] **Underground Retention Volume (ft^3)** *Volume determined using manufacturer's specifications and calculations*	n/a	n/a	n/a	n/a

[16] **Total Retention Volume from LID Infiltration BMPs (ft^3):** 130,383
(Sum of Items 14 and 15 for all infiltration BMP included in plan)

[17] **Fraction of DCV achieved with infiltration BMP:** 100%
Retention% = Item 16 / Form 4.2-1 Item 7

[18] **Is full LID DCV retained on-site with combination of hydrologic source control and LID retention and infiltration BMPs?**
☒Yes ☐No
If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.

4.3.3 Harvest and Use BMP

Harvest and use BMP may be considered if the full LID DCV cannot be met by maximizing infiltration BMPs. Use Form 4.3-4 to compute on-site retention of runoff from proposed harvest and use BMPs.

Volume retention estimates for harvest and use BMPs are sensitive to the on-site demand for captured stormwater. Since irrigation water demand is low in the wet season, when most rainfall events occur in San Bernardino County, the volume of water that can be used within a specified drawdown period is relatively low. The bottom portion of Form 4.3-4 facilitates the necessary computations to show infeasibility if a minimum incremental benefit of 40 percent of the LID DCV would not be achievable with MEP implementation of on-site harvest and use of stormwater (Section 5.5.4 of the TGD for WQMP).

Form 4.3-4 Harvest and Use BMPs			
[1] **Remaining LID DCV not met by site design HSC or infiltration BMP (ft^3):** V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16			
BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP)*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[2] **Describe cistern or runoff detention facility**			
[3] **Storage volume for proposed detention type (ft^3)** *Volume of cistern*			
[4] **Landscaped area planned for use of harvested stormwater (ft^2)**			
[5] **Average wet season daily irrigation demand (in/day)** *Use local values, typical ~ 0.1 in/day*			
[6] **Daily water demand (ft^3/day)** *Item 4 * (Item 5 / 12)*			
[7] **Drawdown time (hrs)** *Copy Item 6 from Form 4.2-1*			
[8] **Retention Volume (ft^3)** *$V_{retention}$ = Minimum of (Item 3) or (Item 6 * (Item 7 / 24))*			
[9] **Total Retention Volume (ft^3) from Harvest and Use BMP:** *Sum of Item 8 for all harvest and use BMP included in plan*			
[10] **Is the full DCV retained with a combination of LID HSC, retention and infiltration, and harvest and use BMPs?** ☐Yes ☐No *If yes, demonstrate conformance using Form 4.3-10. If no, then re-evaluate combinations of all LID BMP and optimize their implementation such that the maximum portion of the DCV is retained on-site (using a single BMP type or combination of BMP types). If the full DCV cannot be mitigated after this optimization process, proceed to Section 4.3.4.*			

4.3.4 Biotreatment BMP

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration, and harvest and use BMPs. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-5 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV. Biotreatment computations are included as follows:

- Use Form 4.3-6 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-7 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-8 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

Form 4.3-5 Selection and Evaluation of Biotreatment BMP		
[1] **Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment (ft^3):** 2,960 *Form 4.2-1 Item 7 – Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9*	**List pollutants of concern:** Pathogens, Nitrogen, and Metals *Copy from Form 2.3-1*	
[2] **Biotreatment BMP Selected** *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)*	**Volume-based biotreatment** *Use Forms 4.3-6 and 4.3-7 to compute treated volume*	**Flow-based biotreatment** *Use Form 4.3-8 to compute treated volume*
	☐ Bioretention with underdrain ☐ Planter box with underdrain ☐ Constructed wetlands ☐ Wet extended detention ☐ Dry extended detention	☐ Vegetated swale ☐ Vegetated filter strip ☒ Proprietary biotreatment
[3] **Volume biotreated in volume based biotreatment BMP (ft^3):** n/a *Form 4.3-6 Item 15 + Form 4.3-7 Item 13*	[4] **Compute remaining LID DCV with implementation of volume based biotreatment BMP (ft^3):** 2,960 *Item 1 – Item 3*	[5] **Remaining fraction of LID DCV for sizing flow based biotreatment BMP:** 100% *Item 4 / Item 1*
[6] **Flow-based biotreatment BMP capacity provided (cfs):** 0.10 cfs (DMA D) + 0.08 cfs (DMA E) = 0.18 cfs *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*		
[7] **Metrics for MEP determination:** ☐ **Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development:** *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*		

Form 4.3-6 Volume Based Biotreatment – Bioretention and Planter Boxes with Underdrains			
BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP)*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[1] **Pollutants addressed with BMP** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*			
[2] **Amended soil infiltration rate** *Typical ~ 5.0 in/hr*			
[3] **Amended soil infiltration safety factor** *Typical ~ 2.0*			
[4] **Amended soil design percolation rate (in/hr)** P_{design} *= Item 2 / Item 3*			
[5] **Ponded water drawdown time (hr)** *Copy Item 6 from Form 4.2-1*			
[6] **Maximum ponding depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[7] **Ponding Depth (ft)** d_{BMP} *= Minimum of (1/12 * Item 4 * Item 5) or Item 6*			
[8] **Amended soil surface area (ft^2)**			
[9] **Amended soil depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[10] **Amended soil porosity, *n***			
[11] **Gravel depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[12] **Gravel porosity, *n***			
[13] **Duration of storm as basin is filling (hrs)** *Typical ~ 3hrs*			
[14] **Biotreated Volume (ft^3)** $V_{biotreated}$ *= Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
[15] **Total biotreated volume from bioretention and/or planter box with underdrains BMP:** *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-7 Volume Based Biotreatment – Constructed Wetlands and Extended Detention

Biotreatment BMP Type *Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (e.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*	**BMP Type and DA**		**BMP Type and DA**		**BMP Type and DA**	
	Forebay	**Basin**	**Forebay**	**Basin**	**Forebay**	**Basin**
[1] **Pollutants addressed with BMP forebay and basin** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*						
[2] **Bottom width (ft)**						
[3] **Bottom length (ft)**						
[4] **Bottom area (ft^2)** A_{bottom} = *Item 2 * Item 3*						
[5] **Side slope (ft/ft)**						
[6] **Depth of storage (ft)**						
[7] **Water surface area (ft2)** $A_{surface}$ = *(Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))*						
[8] **Storage volume (ft3)** *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details V =Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)$^{0.5}$]*						
[9] **Drawdown Time (hrs)** *Copy Item 6 from Form 2.1*						
[10] **Outflow rate (cfs)** Q_{BMP} = *(Item* $8_{forebay}$ *+ Item* 8_{basin}*) / (Item 9 * 3600)*						
[11] **Duration of design storm event (hrs)**						
[12] **Biotreated Volume (ft^3)** $V_{biotreated}$ = *(Item* $8_{forebay}$ *+ Item* 8_{basin}*) +(Item 10 * Item 11 * 3600)*						
[13] **Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention:** *(Sum of Item 12 for all BMP included in plan)*						

Form 4.3-8 Flow Based Biotreatment		
Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary BMP*	**BMP Type and DA**	**BMP Type and DA**
[1] **Pollutants addressed with BMP** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in TGD Table 5-5*	n/a	n/a
[2] **Flow depth for water quality treatment (ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	n/a	n/a
[3] **Bed slope (ft/ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	n/a	n/a
[4] **Manning's roughness coefficient**	n/a	n/a
[5] **Bottom width (ft)** b_w = (Form 4.3-5 Item 6 * Item 4) / (1.49 * Item $2^{1.67}$ * Item $3^{0.5}$)	n/a	n/a
[6] **Side Slope (ft/ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	n/a	n/a
[7] **Cross sectional area (ft^2)** *A = (Item 5 * Item 2) + (Item 6 * Item 2^2)*	n/a	n/a
[8] **Water quality flow velocity (ft/sec)** *V = Form 4.3-5 Item 6 / Item 7*	n/a	n/a
[9] **Hydraulic residence time (min)** *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	n/a	n/a
[10] **Length of flow based BMP (ft)** *L = Item 8 * Item 9 * 60*	n/a	n/a
[11] **Water surface area at water quality flow depth (ft2)** SA_{top} = (Item 5 + (2 * Item 2 * Item 6)) * Item 10	n/a	n/a

4.3.5 Conformance Summary

Complete Form 4.3-9 to demonstrate how on-site LID DCV is met with proposed site design hydrologic source control, infiltration, harvest and use, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate
[1] **Total LID DCV for the Project (ft^3):** 129,967 *Copy Item 7 in Form 4.2-1*
[2] **On-site retention with site design hydrologic source control LID BMP (ft^3):** 0 *Copy Item 30 in Form 4.3-2*
[3] **On-site retention with LID infiltration BMP (ft^3):** 130,383 *Copy Item 16 in Form 4.3-3*
[4] **On-site retention with LID harvest and use BMP (ft^3):** 0 *Copy Item 9 in Form 4.3-4*
[5] **On-site biotreatment with volume based biotreatment BMP (ft^3):** 0 *Copy Item 3 in Form 4.3-5*
[6] **Flow capacity provided by flow based biotreatment BMP (cfs):** 0 *Copy Item 6 in Form 4.3-5*
[7] **LID BMP performance criteria are achieved if answer to any of the following is "Yes":** • **Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP:** ☒Yes ☐No *If yes, sum of Items 2, 3, and 4 is greater than Item 1* • **Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV:** ☐Yes ☒No *If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized* • **On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV:** ☐Yes ☒No *If yes, Form 4.3-1 Items 7 and 8 were both checked yes*
[8] **If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:** ☐ **Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture.** *Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance,* V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%* ☐ **An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility.** *Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed*

4.3.6 Hydromodification Control BMP

Use Form 4.3-10 to compute the remaining runoff volume retention, after LID BMP are implemented, needed to address HCOC, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential HCOC. Describe hydromodification control BMP that address HCOC, which may include off-site BMP and/or in-stream controls. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-10 Hydromodification Control BMPs	
[1] **Volume reduction needed for HCOC performance criteria (ft^3):** *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	[2] **On-site retention with site design hydrologic source control, infiltration, and harvest and use LID BMP (ft^3):** *Sum of Form 4.3-9 Items 2, 3, and 4. Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving HCOC volume reduction*
[3] **Remaining volume for HCOC volume capture (ft^3):** *Item 1 – Item 2*	[4] **Volume capture provided by incorporating additional on-site or off-site retention BMPs (ft^3):** *Existing downstream BMP may be used to demonstrate additional volume capture (if so, attach to this WQMP a hydrologic analysis showing how the additional volume would be retained during a 2-yr storm event for the regional watershed)*
[5] **If Item 4 is less than Item 3, incorporate in-stream controls on downstream waterbody segment to prevent impacts due to hydromodification** ☐ *Attach in-stream control BMP selection and evaluation to this WQMP*	
[6] **Is Form 4.2-2 Item 11 less than or equal to 5%:** ☐Yes ☐No *If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:* ☐ **Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site or off-site retention BMP.** *BMP upstream of a waterbody segment with a potential HCOC may be used to demonstrate increased time of concentration through hydrograph attenuation (if so, show that the hydraulic residence time provided in BMP for a 2-year storm event is equal or greater than the addition time of concentration requirement in Form 4.2-4 Item 15)* ☐ **Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities.** ☐ **Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California.**	
[7] **Form 4.2-2 Item 12 less than or equal to 5%:** ☐Yes ☐No *If yes, HCOC performance criteria are achieved. If no, select one or more mitigation options below:* ☐ **Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site or off-site retention BMPs.** *BMPs upstream of a waterbody segment with a potential HCOC may be used to demonstrate additional peak runoff reduction through hydrograph attenuation (if so, attach to this WQMP, a hydrograph analysis showing how the peak runoff would be reduced during a 2-yr storm event)* ☐ **Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California.**	

4.4 Alternative Compliance Plan (if applicable)

Describe an alternative compliance plan (if applicable) for projects not fully able to infiltrate, harvest and use, or biotreat the DCV via on-site LID practices. A project proponent must develop an alternative compliance plan to address the remainder of the LID DCV. Depending on project type some projects may qualify for water quality credits that can be applied to reduce the DCV that must be treated prior to development of an alternative compliance plan (see Form 2.4-1, Water Quality Credits). Form 4.3-9 Item 8 includes instructions on how to apply water quality credits when computing the DCV that must be met through alternative compliance. Alternative compliance plans may include one or more of the following elements:

- On-site structural treatment control BMP - All treatment control BMP should be located as close to possible to the pollutant sources and should not be located within receiving waters;
- Off-site structural treatment control BMP - Pollutant removal should occur prior to discharge of runoff to receiving waters;
- Urban runoff fund or In-lieu program, if available

Depending upon the proposed alternative compliance plan, approval by the executive officer may or may not be required (see Section 6 of the TGD for WQMP).

Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMP included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and may require a Maintenance Agreement (consult the jurisdiction's LIP). If a Maintenance Agreement is required, it must also be attached to the WQMP.

Form 5-1 BMP Inspection and Maintenance

BMP	Responsible Party(ies)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
Drain Inserts	Owner	Visually inspect for defects and illegal dumping. Notify proper authorities if illegal dumping has occurred. Using an industrial vacuum, the collected materials shall be removed from the filter basket and disposed of properly. Inspect biosorb hydrocarbon boom and replace as necessary.	Annually
Infiltration Basin	Owner	Maintenance activities include repairing undercut and eroded areas at inflow and outflow structures. Remove trash, debris, grass clippings, trees, and other large vegetation from the basin and dispose of properly. Standing water that does not drain within 48 hours will need to be scraped until good drainage is reestablished. All maintenance activities should be conducted by hand labor. Heavy equipment shall not be used on the basin in order to prevent any type of soil compaction that would affect infiltration rates.	The infiltration basin shall be inspected and maintained after every rain event that is greater than 0.5-inches.

Section 6 WQMP Attachments

6.1 Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

See Attachment C for WQMP Site Map.

6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (consult the LIP), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

6.3 Post Construction

Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP (Attachment D).

6.4 Other Supporting Documentation

- Existing Site Photos (Attachment A)
- BMP Design Calculations & Supporting Documentation (Attachment B)
- Maintenance Agreement (Attachment D)
- BMP Educational Materials (Attachment E)
- Soil-Infiltration Report (Attachment F) Pending

Attachment A
Existing Condition Site Photos

10/24/2014

10/24/2014

10/24/2014

10/24/2014

10/24/2014

10/24/2014

Attachment B
BMP Design Calculations & Supporting Documentation

www.nws.noaa.gov

NOAA's National Weather Service
Hydrometeorological Design Studies Center
Precipitation Frequency Data Server (PFDS)

Home Site Map News Organization Search NWS All NOAA Go

General Info
Homepage
Current Projects
FAQ
Glossary

Precipitation Frequency (PF)
PF Data Server
• PF in GIS Format
• PF Maps
• Temporal Distr.
• Time Series Data
• PFDS Perform.
PF Documents

Probable Maximum Precipitation (PMP)
PMP Documents

Miscellaneous
Publications
AEP Storm Analysis
Record Precipitation

Contact Us
Inquiries
List-server

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA

DATA DESCRIPTION

Data type: precipitation depth **Units:** english **Time series type:** partial duration

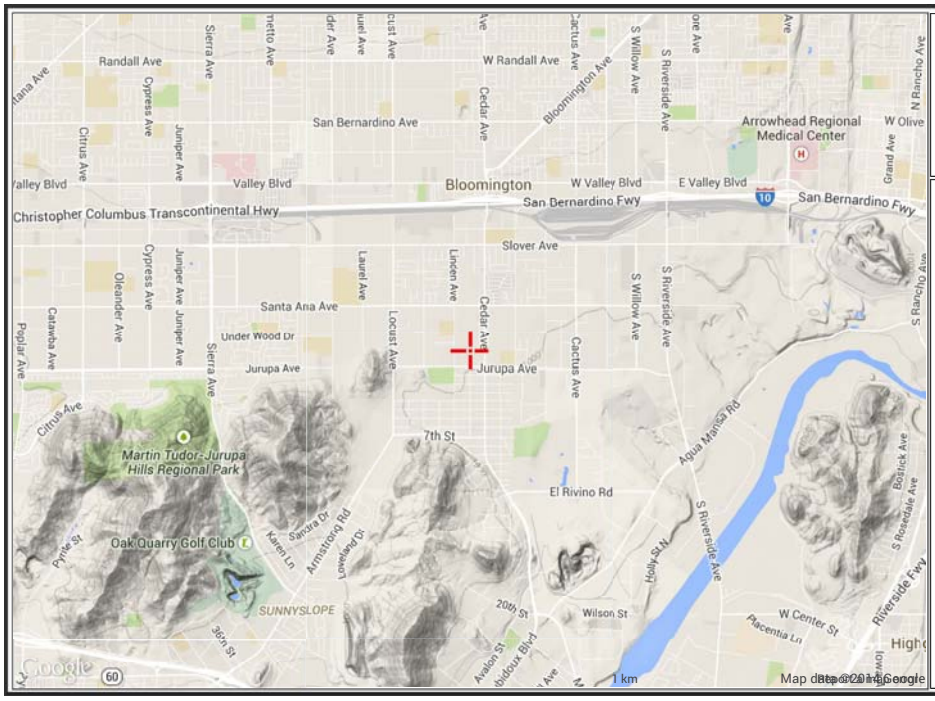
SELECT LOCATION

1. Manually:

a) Enter location (decimal degrees, use "-" for S and W): latitude: 34.050492 longitude: -117.398597 submit

b) Select station (click here for a list of stations used in frequency analysis for CA): select station

2. Use map:



a) Select location
(move crosshair or double click)

b) Click on station icon
(☐ show stations on map)

LOCATION INFORMATION:
Name: Bloomington, California, US*
Latitude: 34.0505°
Longitude: -117.3986°
Elevation: 1012 ft*

* source: Google Maps

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 6, Version 2

PF tabular PF graphical Supplementary information Print Page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years) 1	2	5	10	25	50	100	200	500	1000
5-min	0.106 (0.088–0.129)	0.137 (0.114–0.167)	0.179 (0.149–0.218)	0.214 (0.176–0.263)	0.262 (0.209–0.333)	0.301 (0.234–0.390)	0.340 (0.258–0.453)	0.383 (0.282–0.525)	0.442 (0.312–0.633)	0.490 (0.334–0.727)
10-min	0.152 (0.127–0.184)	0.197 (0.164–0.239)	0.257 (0.213–0.312)	0.307 (0.252–0.376)	0.376 (0.299–0.478)	0.431 (0.335–0.560)	0.488 (0.370–0.650)	0.549 (0.404–0.752)	0.634 (0.447–0.907)	0.703 (0.479–1.04)
15-min	0.184 (0.153–0.223)	0.238 (0.198–0.289)	0.310 (0.258–0.378)	0.371 (0.305–0.455)	0.455 (0.362–0.578)	0.521 (0.405–0.677)	0.590 (0.448–0.786)	0.664 (0.489–0.910)	0.767 (0.541–1.10)	0.850 (0.579–1.26)
30-min	0.275 (0.229–0.333)	0.356 (0.296–0.432)	0.464 (0.385–0.564)	0.554 (0.456–0.680)	0.680 (0.540–0.863)	0.779 (0.606–1.01)	0.882 (0.669–1.17)	0.991 (0.731–1.36)	1.15 (0.808–1.64)	1.27 (0.865–1.88)
60-min	0.401 (0.334–0.486)	0.519 (0.432–0.630)	0.677 (0.562–0.823)	0.808 (0.665–0.992)	0.991 (0.788–1.26)	1.14 (0.884–1.48)	1.29 (0.976–1.71)	1.45 (1.07–1.98)	1.67 (1.18–2.39)	1.85 (1.26–2.75)
2-hr	0.586 (0.489–0.710)	0.752 (0.626–0.912)	0.970 (0.805–1.18)	1.15 (0.946–1.41)	1.40 (1.11–1.78)	1.59 (1.24–2.06)	1.79 (1.36–2.38)	1.99 (1.47–2.73)	2.28 (1.61–3.27)	2.51 (1.71–3.72)
3-hr	0.730 (0.608–0.884)	0.933 (0.777–1.13)	1.20 (0.996–1.46)	1.42 (1.17–1.74)	1.72 (1.37–2.18)	1.95 (1.52–2.53)	2.18 (1.66–2.91)	2.43 (1.79–3.33)	2.77 (1.95–3.96)	3.04 (2.07–4.50)
6-hr	1.03 (0.856–1.25)	1.32 (1.10–1.60)	1.69 (1.40–2.06)	1.99 (1.64–2.45)	2.40 (1.91–3.05)	2.72 (2.11–3.53)	3.04 (2.30–4.04)	3.37 (2.48–4.62)	3.82 (2.69–5.46)	4.17 (2.84–6.18)
12-hr	1.37 (1.14–1.65)	1.76 (1.46–2.13)	2.26 (1.88–2.75)	2.67 (2.20–3.28)	3.22 (2.56–4.09)	3.64 (2.83–4.72)	4.06 (3.08–5.40)	4.49 (3.31–6.15)	5.07 (3.58–7.26)	5.52 (3.76–8.19)
24-hr	1.82 (1.61–2.10)	2.37 (2.10–2.74)	3.08 (2.72–3.56)	3.65 (3.19–4.26)	4.41 (3.74–5.32)	4.99 (4.14–6.14)	5.57 (4.52–7.02)	6.17 (4.86–7.99)	6.97 (5.27–9.40)	7.59 (5.55–10.6)
2-day	2.21 (1.96–2.55)	2.93 (2.59–3.39)	3.87 (3.41–4.48)	4.63 (4.05–5.40)	5.65 (4.78–6.81)	6.43 (5.34–7.91)	7.23 (5.85–9.10)	8.04 (6.34–10.4)	9.14 (6.92–12.3)	10.0 (7.32–14.0)

3-day	**2.37** (2.10–2.74)	**3.20** (2.83–3.69)	**4.27** (3.77–4.94)	**5.15** (4.50–6.00)	**6.35** (5.37–7.65)	**7.27** (6.03–8.94)	**8.22** (6.66–10.3)	**9.19** (7.25–11.9)	**10.5** (7.97–14.2)	**11.6** (8.46–16.1)
4-day	**2.55** (2.26–2.94)	**3.47** (3.07–4.01)	**4.68** (4.12–5.41)	**5.67** (4.96–6.61)	**7.02** (5.95–8.46)	**8.08** (6.70–9.93)	**9.16** (7.42–11.5)	**10.3** (8.10–13.3)	**11.8** (8.94–15.9)	**13.0** (9.53–18.2)
7-day	**2.92** (2.59–3.37)	**4.02** (3.56–4.64)	**5.47** (4.82–6.33)	**6.66** (5.83–7.77)	**8.30** (7.03–10.0)	**9.58** (7.95–11.8)	**10.9** (8.83–13.7)	**12.3** (9.67–15.9)	**14.2** (10.7–19.1)	**15.7** (11.5–21.9)
10-day	**3.17** (2.81–3.66)	**4.39** (3.88–5.07)	**6.00** (5.30–6.95)	**7.34** (6.42–8.56)	**9.18** (7.77–11.1)	**10.6** (8.81–13.1)	**12.1** (9.81–15.3)	**13.7** (10.8–17.7)	**15.8** (12.0–21.3)	**17.6** (12.8–24.5)
20-day	**3.84** (3.40–4.43)	**5.36** (4.74–6.19)	**7.39** (6.51–8.55)	**9.08** (7.94–10.6)	**11.4** (9.68–13.8)	**13.3** (11.0–16.3)	**15.2** (12.3–19.2)	**17.3** (13.6–22.4)	**20.1** (15.2–27.2)	**22.5** (16.4–31.3)
30-day	**4.55** (4.03–5.25)	**6.35** (5.62–7.33)	**8.77** (7.73–10.1)	**10.8** (9.44–12.6)	**13.6** (11.5–16.4)	**15.9** (13.2–19.5)	**18.3** (14.8–23.0)	**20.8** (16.4–26.9)	**24.4** (18.4–32.8)	**27.3** (19.9–38.0)
45-day	**5.44** (4.81–6.27)	**7.53** (6.66–8.69)	**10.4** (9.13–12.0)	**12.7** (11.1–14.9)	**16.1** (13.6–19.4)	**18.8** (15.6–23.1)	**21.6** (17.5–27.3)	**24.7** (19.5–32.0)	**29.1** (22.0–39.2)	**32.7** (23.9–45.6)
60-day	**6.36** (5.63–7.33)	**8.71** (7.70–10.1)	**11.9** (10.5–13.8)	**14.6** (12.8–17.0)	**18.4** (15.6–22.2)	**21.5** (17.9–26.5)	**24.8** (20.1–31.3)	**28.4** (22.4–36.7)	**33.5** (25.3–45.1)	**37.7** (27.6–52.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in csv format: precipitation frequency estimates Submit

Main Link Categories:
Home | OHD

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910
Page Author: HDSC webmaster
Page last modified: August 27, 2014

Map Disclaimer
Disclaimer
Credits
Glossary

Privacy Pol
About
Career Opportuniti

Worksheet H: Factor of Safety and Design Infiltration Rate Worksheet
(All Onsite DMAs)

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1.00
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/expected sediment loads	0.25	1	0.25
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, $S_B = \Sigma p$			2.00

Combined Safety Factor, $S_{TOT} = S_A \times S_B$	2.0
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)	2.5
Design Infiltration Rate, in/hr, $K_{DESIGN} = K_M / S_{TOT}$	1.25

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

A double-ring infiltration test will be conducted at the project site to support a measured rate of 2.5 in/hr. The design rate is 1.25 in/hr after applying the appropriate safety factor. This design rate is suitable for infiltration facilities.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

VOLUME-BASED BMP DESIGN

$C_{BMP} = 0.858(imp)^3 - 0.78(imp)^2 + 0.774(imp) + 0.04$
P6 = (0.519)(1.4807) = 0.768 inches
P0 = (1.963)(C_{BMP})(0.768)
DCV = (P0 * Area) / 12

DMA 1 – INFILTRATION BASIN #1

Region		Valley	
Drainage Area (acres)		20.80	acres
Drainage Area (sq-ft)		906,048	sq-ft
Impervious Coeff	i =	0.9	< 1.0
Runoff Coeff	**C =**	0.730	
1-hr 2-yr from NOAA		0.519	
P6 Coeff		1.4807	
Mean 6-hr (P6)		0.768	
Drawdown Rate (a)		1.963	
DCV		83,179	cu-ft
DCV		1.910	acre-ft

INFILTRATION BASIN #1					
Elevation	Depth	Area	Volume	∑ Volume	∑ Volume
	(feet)	(sq. ft.)	(c.f.)	(c.f.)	(ac-ft)
998.93	0	18835			
			1323	1,323.14	0.03
999.00	0	18969			
			19945	21,268.14	0.49
1000.00	1.07	20921			
			21934	43,202.14	0.99
1001.00	2.07	22947			
			23999	67,200.64	1.54
1002.00	3.07	25050			
			17273	84,473.24	1.94
1002.67	3.74	26510			
			26140	93,340.64	2.14
1003.00	4.07	27230			
			28360	121,700.64	2.79
1004.00	5.07	29490			
			36244	157,944.54	3.63
1004.22	5.29	300000			

DMA 2 – INFILTRATION BASIN #2

Region		Valley	
Drainage Area (acres)		11.70	acres
Drainage Area (sq-ft)		509,652	sq-ft
Impervious Coeff	i =	0.9	< 1.0
Runoff Coeff	**C =**	0.730	
1-hr 2-yr from NOAA		0.519	
P6 Coeff		1.4807	
Mean 6-hr (P6)		0.768	
Drawdown Rate (a)		1.963	
DCV		46,788	cu-ft
DCV		1.074	acre-ft

INFILTRATION BASIN #2					
Elevation	Depth	Area	Volume	∑ Volume	∑ Volume
	(feet)	(sq. ft.)	(c.f.)	(c.f.)	(ac-ft)
996.55	0	12276			
			5800	5,799.60	0.13
997.00	0.45	13500			
			15052	20,851.10	0.48
998.00	1.45	16603			
			18187	39,037.60	0.90
999.00	2.45	19770			
			8166	47,204.00	1.08
999.40	2.85	21062			
			21386	60,423.60	1.39
1000.00	3.45	23002			
			24650	85,073.60	1.95
1001.00	4.45	26298			
			27979	113,052.10	2.60
1002.00	5.45	29659			
			31372	116,445.10	2.67
1003.00	6.45	33084			

Attachment C
WQMP Site Map

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

VICINITY MAP

FOR

BLOOMINGTON INDUSTRIAL FACILITY

N

NOT TO SCALE

Attachment D
WQMP and Stormwater BMP Transfer, Access and Maintenance Agreement

RECORDING REQUESTED BY:
County of San Bernardino
Department of Public Works

AND WHEN RECORDED MAIL TO:
County of San Bernardino
Department of Public Works
825 E. Third Street, Room 117
San Bernardino, CA 92415-0835

SPACE ABOVE THIS LINE FOR RECORDER'S USE

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN AND STORMWATER BEST MANAGEMENT PRACTICES TRANSFER, ACCESS AND MAINTENANCE

THIS PAGE ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION

Covenant and Agreement Regarding Water Quality Management Plan and Stormwater Best Management Practices
Transfer, Access and Maintenance

OWNER NAME: Western Realco

PROPERTY ADDRESS: _____

_____

APN: APN: 0257-081-07 // 0257-091-07 11, 12, 14, 15, 19, 20, 23, 24, 25, 26, 28, 29, 30, 32, 33

THIS AGREEMENT is made and entered into in

_____ ,California, this _____ day of

MONTH 2015 , by and between

Western Realco , hereinafter

referred to as Owner, and the COUNTY OF SAN BERNARDINO, a political subdivision of the State of California, hereinafter referred to as "the County";

WHEREAS, the Owner owns real property ("Property") in the County of San Bernardino, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of which exhibits is attached hereto and incorporated herein by this reference; and

WHEREAS, at the time of initial approval of development project known as

Bloomington Industrial Facility within the Property described herein, the County required the project to employ Best Management Practices, hereinafter referred to as "BMPs," to minimize pollutants in urban runoff; and

WHEREAS, the Owner has chosen to install and/or implement BMPs as described in the Water Quality Management Plan, dated MONTH DAY, 2015, on file with the County and incorporated herein by this reference, hereinafter referred to as "WQMP", to minimize pollutants in urban runoff and to minimize other adverse impacts of urban runoff; and

WHEREAS, said WQMP has been certified by the Owner and reviewed and approved by the County; and

WHEREAS, the Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of all BMPs in the WQMP and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining to confined space and waste disposal methods, in effect at the time such maintenance occurs.

NOW THEREFORE, it is mutually stipulated and agreed as follows:

1. Owner shall comply with the WQMP

2. All maintenance or replacement of BMPs proposed as part of the WQMP are the sole responsibility of the Owner in accordance with the terms of this Agreement.

3. Owner hereby provides the County's designee complete access, of any duration, to the BMPs and their immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by the County Director of Public Works, no advance notice, for the purpose of inspection, sampling, testing of the BMPs, and in case of emergency, to undertake all necessary repairs or other preventative measures at owner's expense as provided in paragraph 5 below. The County shall make every effort at all times to minimize or avoid interference with Owner's use of the Property. Denial of access to any premises or facility that contains WQMP features is a breach of this Agreement and may also be a violation of the County's Pollutant Discharge Elimination System regulations, which on the effective date of this Agreement are found in County Code Sections 35.0101 et seq. If there is reasonable cause to believe that an illicit discharge or breach of this Agreement is occurring on the premises then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction in addition to other enforcement actions. Owner recognizes that the County may perform routine and regular inspections, as well as emergency inspections, of the BMPs. Owner or Owner's successors or assigns shall pay County for all costs incurred by County in the inspection, sampling, testing of the BMPs within thirty (30) calendar days of County invoice.

4. Owner shall use its best efforts diligently to maintain all BMPs in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of any material(s) from the BMPs and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested from time to time by the County, the Owner shall provide the County with documentation identifying the material(s) removed, the quantity, and disposal destination), testing construction or reconstruction.

5. In the event Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) business days of being given written notice by the County , the County is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense against the Property and/or to the Owner or Owner's successors or assigns, including administrative costs, attorneys fees and interest thereon at the maximum rate authorized by the County Code from the date of the notice of expense until paid in full. Owner or Owner's successors or assigns shall pay County within thirty (30) calendar days of County invoice.

6. The County may require the owner to post security in form and for a time period satisfactory to the County to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under the Agreement, the County may, in the case of a cash bond, act for the Owner using the proceeds from it, or in the case of a surety bond, require the surety(ies) to perform the obligations of this Agreement.

7. The County agrees, from time to time, within ten (10) business days after request of Owner, to execute and deliver to Owner, or Owner's designee, an estoppel certificate requested by Owner, stating that this Agreement is in full force and effect, and that Owner is not in default hereunder with regard to any maintenance or payment obligations (or specifying in detail the nature of Owner's default). Owner shall pay all costs and expenses incurred by the County in its investigation of whether to issue an estoppel certificate within thirty (30) calendar days after receipt of a County invoice and prior to the County's issuance of such certificate. Where the County cannot issue an estoppel certificate, Owner shall pay the County within thirty (30) calendar days of receipt of a County invoice.

8. Owner shall not change any BMPs identified in the WQMP without an amendment to this Agreement approved by authorized representatives of both the County and the Owner.

9. County and Owner shall comply with all applicable laws, ordinances, rules, regulations, court orders and government agency orders now or hereinafter in effect in carrying out the terms of this Agreement. If a provision of this Agreement is terminated or held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall remain in full effect.

10. In addition to any remedy available to County under this Agreement, if Owner violates any term of this Agreement and does not cure the violation within the time already provided in this Agreement, or, if not provided, within thirty (30) calendar days, or within such time authorized by the County if said cure reasonably requires more than the subject time, the County may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by the Owner with the terms of this Agreement. In such action, the County may recover any damages to which the County may be entitled for the violation, enjoin the violation by temporary or permanent injunction without the necessity of proving actual damages or the inadequacy of otherwise available legal remedies, or obtain other equitable relief, including, but not limited to, the restoration of the Property and/or the BMPs identified in the WQMP to the condition in which it/they existed prior to any such violation or injury.

11. This Agreement shall be recorded in the Office of the Recorder of San Bernardino County, California, at the expense of the Owner and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth, and also a lien in such amount as will fully reimburse the County, including interest as herein above set forth, subject to foreclosure in event of default in payment.

12. In event of legal action occasioned by any default or action of the Owner, or its successors or assigns, then the Owner and its successors or assigns agree(s) to hold the County harmless and pay all costs incurred by the County in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

13. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien there against.

14. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto. The term "Owner" shall include not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of

this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the County at the same time such notice is provided to the successor.

15. Time is of the essence in the performance of this Agreement.

16. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

17. Owner agrees to indemnify, defend (with counsel reasonably approved by the County) and hold harmless the County and its authorized officers, employees, agents and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person and for any costs or expenses incurred by the County on account of any claim except where such indemnification is prohibited by law. This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The Owner's indemnification obligation applies to the County's "active" as well as "passive" negligence but does not apply to the County's "sole negligence" or "willful misconduct" within the meaning of Civil Code Section 2782, or to any claims, actions, losses, damages, and/or liabilities, to the extent caused by the acts or omissions of any third party contractors undertaking any work (other than field inspections) or other maintenance on the Property on behalf of the County under this Agreement..

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IF TO COUNTY :

Director of Public Works

825 E. Third Street, Room 117

San Bernardino, CA 92415-0835

IF TO OWNER:

Western Realco

500 Newport Center Drive #630

Newport Beach, CA 92660

IN WITNESS THEREOF, the parties hereto have affixed their signatures as of the date first written above.

OWNER:

Signature: _____

Name: Vance Mape

Title: President

Date: _____

FOR: Maintenance Agreement, dated MONTH DAY, 2015, for the project known as Bloomington Industrial Facility

(APN)_____,
As described in the WQMP dated MONTH DAY, 2015.

OWNER:

Signature: _____

Name: _____

Title: _____

Date: _____

NOTARIES ON FOLLOWING PAGE

A notary acknowledgement is required for recordation.

ACCEPTED BY:

_____

GERRY NEWCOMBE, Director of Public Works

Date: _____

Attachment: Notary Acknowledgement

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of _____ }

On _____ before me, _____,
(here insert name and title of the officer)

personally appeared _____

_____

_____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

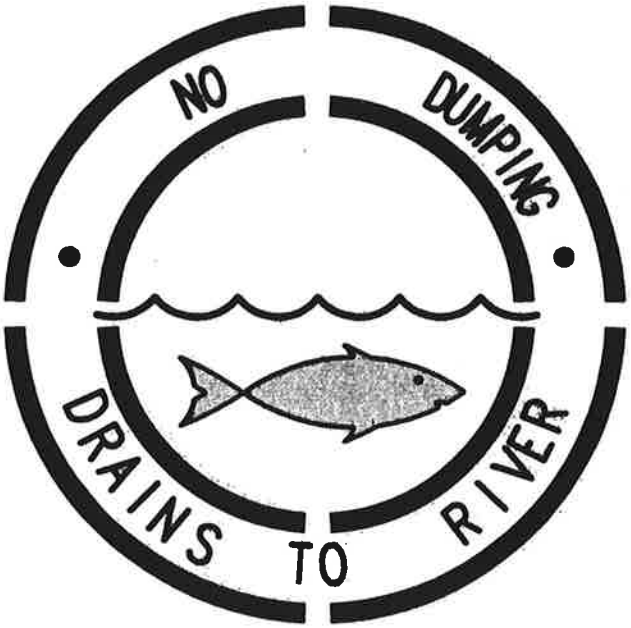
Signature _____

(Seal)

EXHIBIT A
(Legal Description)

EXHIBIT B
(Map/illustration)

Attachment E
Educational Materials



SAMPLE STENCIL TO BE USED NEAR
GRATE AND CURB OPENING INLETS
SYMBOL TO BE 24" IN DIAMETER

Thienes Engineering
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

SAMPLE CATCH BASIN STENCIL
PER BMP SD-13

Infiltration Basin TC-11

Design Considerations

- Soil for Infiltration
- Slope
- Aesthetics

Targeted Constituents

☑	Sediment	■
☑	Nutrients	■
☑	Trash	■
☑	Metals	■
☑	Bacteria	■
☑	Oil and Grease	■
☑	Organics	■

Legend *(Removal Effectiveness)*

● Low ■ High

▲ Medium

Description

An infiltration basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration basins use the natural filtering ability of the soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems. Infiltration basins can be challenging to apply on many sites, however, because of soils requirements. In addition, some studies have shown relatively high failure rates compared with other management practices.

California Experience

Infiltration basins have a long history of use in California, especially in the Central Valley. Basins located in Fresno were among those initially evaluated in the National Urban Runoff Program and were found to be effective at reducing the volume of runoff, while posing little long-term threat to groundwater quality (EPA, 1983; Schroeder, 1995). Proper siting of these devices is crucial as underscored by the experience of Caltrans in siting two basins in Southern California. The basin with marginal separation from groundwater and soil permeability failed immediately and could never be rehabilitated.

Advantages

- Provides 100% reduction in the load discharged to surface waters.
- The principal benefit of infiltration basins is the approximation of pre-development hydrology during which a

significant portion of the average annual rainfall runoff is infiltrated and evaporated rather than flushed directly to creeks.

- If the water quality volume is adequately sized, infiltration basins can be useful for providing control of channel forming (erosion) and high frequency (generally less than the 2-year) flood events.

Limitations

- May not be appropriate for industrial sites or locations where spills may occur.
- Infiltration basins require a minimum soil infiltration rate of 0.5 inches/hour, not appropriate at sites with Hydrologic Soil Types C and D.
- If infiltration rates exceed 2.4 inches/hour, then the runoff should be fully treated prior to infiltration to protect groundwater quality.
- Not suitable on fill sites or steep slopes.
- Risk of groundwater contamination in very coarse soils.
- Upstream drainage area must be completely stabilized before construction.
- Difficult to restore functioning of infiltration basins once clogged.

Design and Sizing Guidelines

- Water quality volume determined by local requirements or sized so that 85% of the annual runoff volume is captured.
- Basin sized so that the entire water quality volume is infiltrated within 48 hours.
- Vegetation establishment on the basin floor may help reduce the clogging rate.

Construction/Inspection Considerations

- Before construction begins, stabilize the entire area draining to the facility. If impossible, place a diversion berm around the perimeter of the infiltration site to prevent sediment entrance during construction or remove the top 2 inches of soil after the site is stabililized. Stabilize the entire contributing drainage area, including the side slopes, before allowing any runoff to enter once construction is complete.
- Place excavated material such that it can not be washed back into the basin if a storm occurs during construction of the facility.
- Build the basin without driving heavy equipment over the infiltration surface. Any equipment driven on the surface should have extra-wide (“low pressure”) tires. Prior to any construction, rope off the infiltration area to stop entrance by unwanted equipment.
- After final grading, till the infiltration surface deeply.
- Use appropriate erosion control seed mix for the specific project and location.

Performance

As water migrates through porous soil and rock, pollutant attenuation mechanisms include precipitation, sorption, physical filtration, and bacterial degradation. If functioning properly, this approach is presumed to have high removal efficiencies for particulate pollutants and moderate removal of soluble pollutants. Actual pollutant removal in the subsurface would be expected to vary depending upon site-specific soil types. This technology eliminates discharge to surface waters except for the very largest storms; consequently, complete removal of all stormwater constituents can be assumed.

There remain some concerns about the potential for groundwater contamination despite the findings of the NURP and Nightingale (1975; 1987a,b,c; 1989). For instance, a report by Pitt et al. (1994) highlighted the potential for groundwater contamination from intentional and unintentional stormwater infiltration. That report recommends that infiltration facilities not be sited in areas where high concentrations are present or where there is a potential for spills of toxic material. Conversely, Schroeder (1995) reported that there was no evidence of groundwater impacts from an infiltration basin serving a large industrial catchment in Fresno, CA.

Siting Criteria

The key element in siting infiltration basins is identifying sites with appropriate soil and hydrogeologic properties, which is critical for long term performance. In one study conducted in Prince George's County, Maryland (Galli, 1992), all of the infiltration basins investigated clogged within 2 years. It is believed that these failures were for the most part due to allowing infiltration at sites with rates of less than 0.5 in/hr, basing siting on soil type rather than field infiltration tests, and poor construction practices that resulted in soil compaction of the basin invert.

A study of 23 infiltration basins in the Pacific Northwest showed better long-term performance in an area with highly permeable soils (Hilding, 1996). In this study, few of the infiltration basins had failed after 10 years. Consequently, the following guidelines for identifying appropriate soil and subsurface conditions should be rigorously adhered to.

- Determine soil type (consider RCS soil type ‘A, B or C’ only) from mapping and consult USDA soil survey tables to review other parameters such as the amount of silt and clay, presence of a restrictive layer or seasonal high water table, and estimated permeability. The soil should not have more than 30% clay or more than 40% of clay and silt combined. Eliminate sites that are clearly unsuitable for infiltration.

- Groundwater separation should be at least 3 m from the basin invert to the measured ground water elevation. There is concern at the state and regional levels of the impact on groundwater quality from infiltrated runoff, especially when the separation between groundwater and the surface is small.

- Location away from buildings, slopes and highway pavement (greater than 6 m) and wells and bridge structures (greater than 30 m). Sites constructed of fill, having a base flow or with a slope greater than 15% should not be considered.

- Ensure that adequate head is available to operate flow splitter structures (to allow the basin to be offline) without ponding in the splitter structure or creating backwater upstream of the splitter.

- Base flow should not be present in the tributary watershed.

Secondary Screening Based on Site Geotechnical Investigation

- At least three in-hole conductivity tests shall be performed using USBR 7300-89 or Bouwer-Rice procedures (the latter if groundwater is encountered within the boring), two tests at different locations within the proposed basin and the third down gradient by no more than approximately 10 m. The tests shall measure permeability in the side slopes and the bed within a depth of 3 m of the invert.

- The minimum acceptable hydraulic conductivity as measured in any of the three required test holes is 13 mm/hr. If any test hole shows less than the minimum value, the site should be disqualified from further consideration.

- Exclude from consideration sites constructed in fill or partially in fill unless no silts or clays are present in the soil boring. Fill tends to be compacted, with clays in a dispersed rather than flocculated state, greatly reducing permeability.

- The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move in the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

Additional Design Guidelines

(1) Basin Sizing - The required water quality volume is determined by local regulations or sufficient to capture 85% of the annual runoff.

(2) Provide pretreatment if sediment loading is a maintenance concern for the basin.

(3) Include energy dissipation in the inlet design for the basins. Avoid designs that include a permanent pool to reduce opportunity for standing water and associated vector problems.

(4) Basin invert area should be determined by the equation:

$$A = \frac{WQV}{kt}$$

where A = Basin invert area (m^2)

WQV = water quality volume (m^3)

k = 0.5 times the lowest field-measured hydraulic conductivity (m/hr)

t = drawdown time (48 hr)

(5) The use of vertical piping, either for distribution or infiltration enhancement shall not be allowed to avoid device classification as a Class V injection well per 40 CFR146.5(e)(4).

Maintenance

Regular maintenance is critical to the successful operation of infiltration basins. Recommended operation and maintenance guidelines include:

- Inspections and maintenance to ensure that water infiltrates into the subsurface completely (recommended infiltration rate of 72 hours or less) and that vegetation is carefully managed to prevent creating mosquito and other vector habitats.
- Observe drain time for the design storm after completion or modification of the facility to confirm that the desired drain time has been obtained.
- Schedule semiannual inspections for beginning and end of the wet season to identify potential problems such as erosion of the basin side slopes and invert, standing water, trash and debris, and sediment accumulation.
- Remove accumulated trash and debris in the basin at the start and end of the wet season.
- Inspect for standing water at the end of the wet season.
- Trim vegetation at the beginning and end of the wet season to prevent establishment of woody vegetation and for aesthetic and vector reasons.
- Remove accumulated sediment and regrade when the accumulated sediment volume exceeds 10% of the basin.
- If erosion is occurring within the basin, revegetate immediately and stabilize with an erosion control mulch or mat until vegetation cover is established.
- To avoid reversing soil development, scarification or other disturbance should only be performed when there are actual signs of clogging, rather than on a routine basis. Always remove deposited sediments before scarification, and use a hand-guided rotary tiller, if possible, or a disc harrow pulled by a very light tractor.

Cost

Infiltration basins are relatively cost-effective practices because little infrastructure is needed when constructing them. One study estimated the total construction cost at about $2 per ft (adjusted for inflation) of storage for a 0.25-acre basin (SWRPC, 1991). As with other BMPs, these published cost estimates may deviate greatly from what might be incurred at a specific site. For instance, Caltrans spent about $18/ft^3 for the two infiltration basins constructed in southern California, each of which had a water quality volume of about 0.34 ac.-ft. Much of the higher cost can be attributed to changes in the storm drain system necessary to route the runoff to the basin locations.

Infiltration basins typically consume about 2 to 3% of the site draining to them, which is relatively small. Additional space may be required for buffer, landscaping, access road, and fencing. Maintenance costs are estimated at 5 to 10% of construction costs.

One cost concern associated with infiltration practices is the maintenance burden and longevity. If improperly maintained, infiltration basins have a high failure rate. Thus, it may be necessary to replace the basin with a different technology after a relatively short period of time.

References and Sources of Additional Information

Caltrans, 2002, BMP Retrofit Pilot Program Proposed Final Report, Rpt. CTSW-RT-01-050, California Dept. of Transportation, Sacramento, CA.

Galli, J. 1992. *Analysis of Urban BMP Performance and Longevity in Prince George's County, Maryland*. Metropolitan Washington Council of Governments, Washington, DC.

Hilding, K. 1996. Longevity of infiltration basins assessed in Puget Sound. *Watershed Protection Techniques* 1(3):124–125.

Maryland Department of the Environment (MDE). 2000. *Maryland Stormwater Design Manual*. http://www.mde.state.md.us/environment/wma/stormwatermanual. Accessed May 22, 2002.

Metzger, M. E., D. F. Messer, C. L. Beitia, C. M. Myers, and V. L. Kramer. 2002. The Dark Side Of Stormwater Runoff Management: Disease Vectors Associated With Structural BMPs. Stormwater 3(2): 24-39.

Nightingale, H.I., 1975, "Lead, Zinc, and Copper in Soils of Urban Storm-Runoff Retention Basins," American Water Works Assoc. Journal. Vol. 67, p. 443-446.

Nightingale, H.I., 1987a, "Water Quality beneath Urban Runoff Water Management Basins," Water Resources Bulletin, Vol. 23, p. 197-205.

Nightingale, H.I., 1987b, "Accumulation of As, Ni, Cu, and Pb in Retention and Recharge Basin Soils from Urban Runoff," Water Resources Bulletin, Vol. 23, p. 663-672.

Nightingale, H.I., 1987c, "Organic Pollutants in Soils of Retention/Recharge Basins Receiving Urban Runoff Water," Soil Science Vol. 148, pp. 39-45.

Nightingale, H.I., Harrison, D., and Salo, J.E., 1985, "An Evaluation Technique for Ground-water Quality Beneath Urban Runoff Retention and Percolation Basins," Ground Water Monitoring Review, Vol. 5, No. 1, pp. 43-50.

Oberts, G. 1994. Performance of Stormwater Ponds and Wetlands in Winter. *Watershed Protection Techniques* 1(2): 64–68.

Pitt, R., et al. 1994, *Potential Groundwater Contamination from Intentional and Nonintentional Stormwater Infiltration*, EPA/600/R-94/051, Risk Reduction Engineering Laboratory, U.S. EPA, Cincinnati, OH.

Schueler, T. 1987. *Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs*. Metropolitan Washington Council of Governments, Washington, DC.

Schroeder, R.A., 1995, *Potential For Chemical Transport Beneath a Storm-Runoff Recharge (Retention) Basin for an Industrial Catchment in Fresno, CA*, USGS Water-Resource Investigations Report 93-4140.

Southeastern Wisconsin Regional Planning Commission (SWRPC). 1991. *Costs of Urban Nonpoint Source Water Pollution Control Measures*. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI.

U.S. EPA, 1983, *Results of the Nationwide Urban Runoff Program: Volume 1 – Final Report*, WH-554, Water Planning Division, Washington, DC.

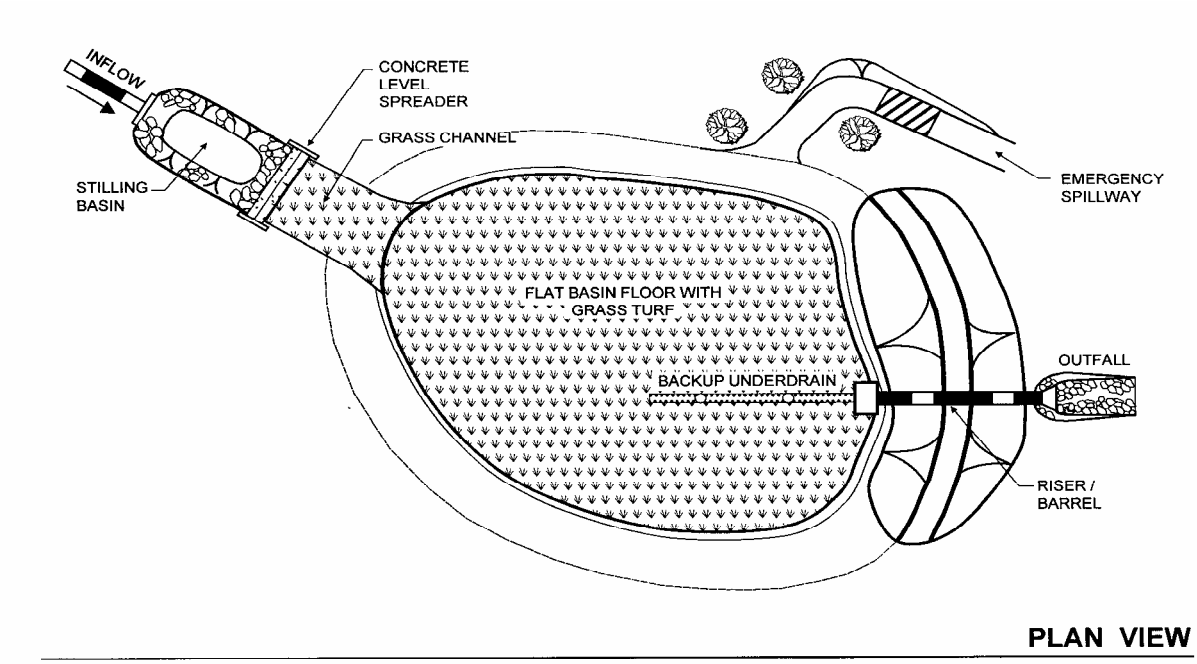
Watershed Management Institute (WMI). 1997. *Operation, Maintenance, and Management of Stormwater Management Systems*. Prepared for U.S. Environmental Protection Agency Office of Water, Washington, DC.

Information Resources

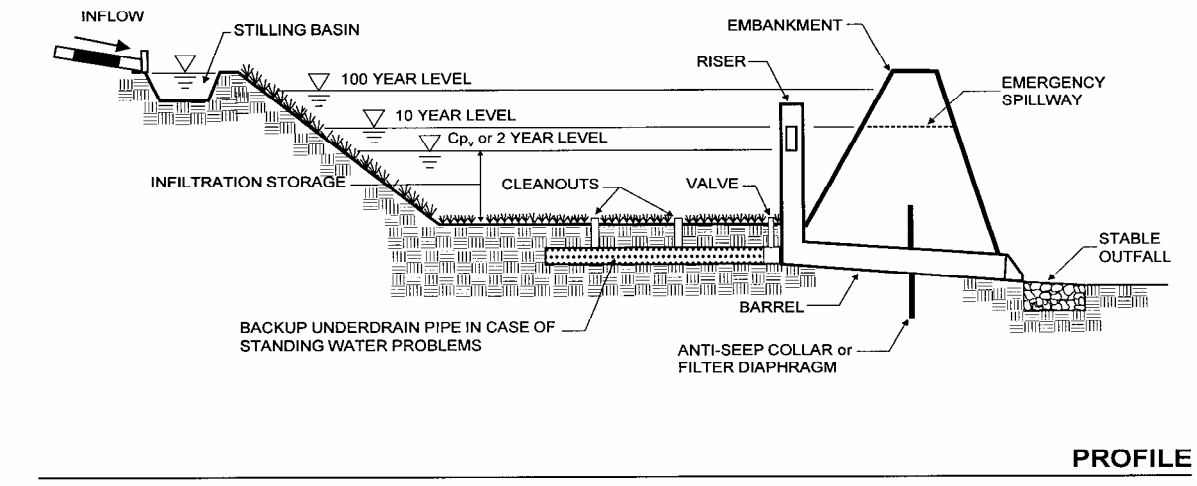
Center for Watershed Protection (CWP). 1997. *Stormwater BMP Design Supplement for Cold Climates*. Prepared for U.S. Environmental Protection Agency Office of Wetlands, Oceans and Watersheds. Washington, DC.

Ferguson, B.K., 1994. *Stormwater Infiltration*. CRC Press, Ann Arbor, MI.

USEPA. 1993. *Guidance to Specify Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA-840-B-92-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.



PLAN VIEW



PROFILE

Drain Inserts MP-52

Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

California Experience

The number of installations is unknown but likely exceeds a thousand. Some users have reported that these systems require considerable maintenance to prevent plugging and bypass.

Advantages

- Does not require additional space as inserts as the drain inlets are already a component of the standard drainage systems.
- Easy access for inspection and maintenance.
- As there is no standing water, there is little concern for mosquito breeding.
- A relatively inexpensive retrofit option.

Limitations

Performance is likely significantly less than treatment systems that are located at the end of the drainage system such as ponds and vaults. Usually not suitable for large areas or areas with trash or leaves than can plug the insert.

Design and Sizing Guidelines

Refer to manufacturer's guidelines. Drain inserts come any many configurations but can be placed into three general groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are

Design Considerations

- Use with other BMPs
- Fit and Seal Capacity within Inlet

Targeted Constituents

- ☑ Sediment
- ☑ Nutrients
- ☑ Trash
- ☑ Metals
- Bacteria
- ☑ Oil and Grease
- ☑ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

one box; that is, the setting area and filtration through media occurs in the same box. One manufacturer has a double-box. Stormwater enters the first box where setting occurs. The stormwater flows into the second box where the filter media is located. Some products consist of one or more trays or mesh grates. The trays can hold different types of media. Filtration media vary with the manufacturer: types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Construction/Inspection Considerations

Be certain that installation is done in a manner that makes certain that the stormwater enters the unit and does not leak around the perimeter. Leakage between the frame of the insert and the frame of the drain inlet can easily occur with vertical (drop) inlets.

Performance

Few products have performance data collected under field conditions.

Siting Criteria

It is recommended that inserts be used only for retrofit situations or as pretreatment where other treatment BMPs presented in this section area used.

Additional Design Guidelines

Follow guidelines provided by individual manufacturers.

Maintenance

Likely require frequent maintenance, on the order of several times per year.

Cost

- The initial cost of individual inserts ranges from less than $100 to about $2,000. The cost of using multiple units in curb inlet drains varies with the size of the inlet.
- The low cost of inserts may tend to favor the use of these systems over other, more effective treatment BMPs. However, the low cost of each unit may be offset by the number of units that are required, more frequent maintenance, and the shorter structural life (and therefore replacement).

References and Sources of Additional Information

Hrachovec, R., and G. Minton, 2001, Field testing of a sock-type catch basin insert, Planet CPR, Seattle, Washington

Interagency Catch Basin Insert Committee, Evaluation of Commercially-Available Catch Basin Inserts for the Treatment of Stormwater Runoff from Developed Sites, 1995

Larry Walker Associates, June 1998, NDMP Inlet/In-Line Control Measure Study Report

Manufacturers literature

Santa Monica (City), Santa Monica Bay Municipal Stormwater/Urban Runoff Project - Evaluation of Potential Catch basin Retrofits, Woodward Clyde, September 24, 1998

Woodward Clyde, June 11, 1996, Parking Lot Monitoring Report, Santa Clara Valley Nonpoint Source Pollution Control Program.

Grate Inlet Filter (GISB)

PROVEN STORMWATER TREATMENT TECHNOLOGY

BIO CLEAN ENVIRONMENTAL SERVICES, INC.

Overview

The Bio Clean Grate Inlet Filter (GISB) for catch basins has been keeping property owners in compliance since 1994. Preferred by public agencies and backed with a 5 year unlimited warranty, this easy to install filter has been chosen because of its durability and easy maintenance.

Constructed of UV coated marine grade fiberglass and high grade stainless steel, it is built to last longer than any other filter brand. The multi-stage filtration provides three different sieve size filtration screens to optimize filtration and water flow. The filter is equipped with a hydrocarbon media boom and deflector shield protected bypass to eliminate scouring.

The filter is designed for grated inlets of any size and depth. Each filter can be custom built to meet specific project needs. Screen size and media type can be modified to remove specific pollutants.

Advantages

- 5 Year Warranty
- Custom Sizes Available
- Fits in Shallow Catch Basins
- No Nets or Geofabrics
- 15+ User Life
- No Replacement Costs as Found with Fabric Filters
- Meets **LEED** Requirements

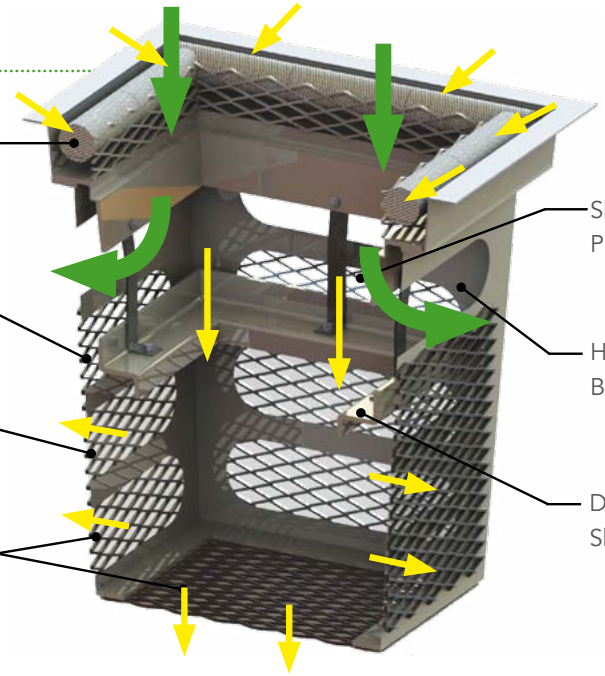
Performance

- 74%-86% Removal of TSS
- 54% Removal of Oils & Grease
- 57%-71% Removal of Phosphorus
- 56%-60% Removal of Nitrogen

Specifications

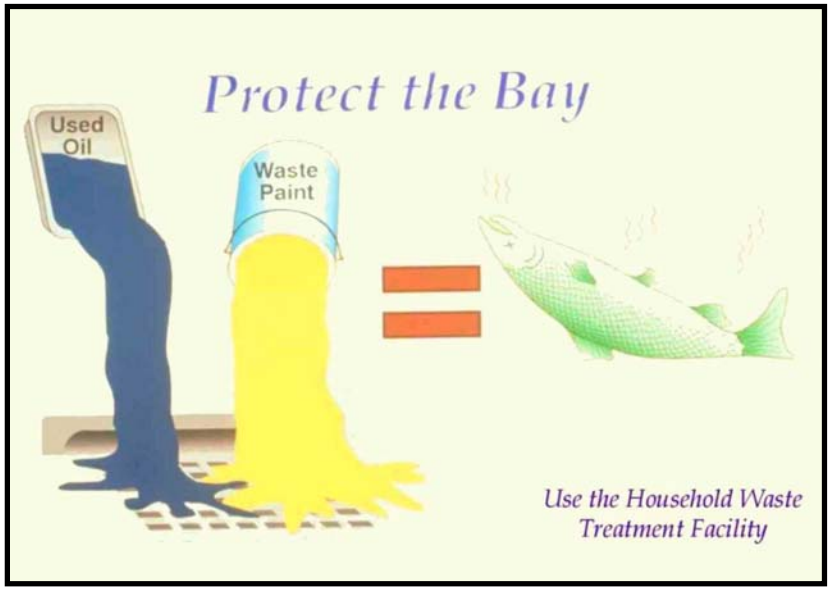
Model #	Treatment Flow (CFS)	Bypass Flow (CFS)
BC-GISB-12-12-12	0.5	0.5
BC-GISB-18-18-18	0.8	0.8
BC-GISB-24-24-24	3.7	4.4
BC-GISB-36-36-24	5.8	13.4
BC-GISB-48-48-18	6.6	13.3

Operation



www.BioCleanEnvironmental.com

Non-Stormwater Discharges SC-10



Art Credit: Margie Winter

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

CASQA
California Stormwater Quality Association

Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Spill Prevention, Control & Cleanup SC-11

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental or illegal spills. Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

Approach

Pollution Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- Develop a Spill Prevention Control and Countermeasure (SPCC) Plan. The plan should include:

- Description of the facility, owner and address, activities and chemicals present
- Facility map
- Notification and evacuation procedures
- Cleanup instructions
- Identification of responsible departments
- Identify key spill response personnel

- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Suggested Protocols (including equipment needs)

Spill Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- If consistent illegal dumping is observed at the facility:
  - Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - Landscaping and beautification efforts may also discourage illegal dumping.
  - Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- Store and contain liquid materials in such a manner that if the tank is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.

- Routine maintenance:
  - Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
  - Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
  - Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain*.

- Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- Label all containers according to their contents (e.g., solvent, gasoline).
- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).
- Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).
- Identify key spill response personnel.

Spill Control and Cleanup Activities

- Follow the Spill Prevention Control and Countermeasure Plan.
- Clean up leaks and spills immediately.
- Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste. Physical methods for the cleanup of dry chemicals include the use of brooms, shovels, sweepers, or plows.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to local agencies, such as the fire department; they can assist in cleanup.
- Establish a system for tracking incidents. The system should be designed to identify the following:

  - Types and quantities (in some cases) of wastes

  - Patterns in time of occurrence (time of day/night, month, or year)

- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

Training

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
  - The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
  - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from

tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.

- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.
- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:
  - Cover fueling area if possible.
  - Use a perimeter drain or slope pavement inward with drainage to a sump.
  - Pave fueling area with concrete rather than asphalt.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities. The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department)
- Develop procedures to prevent/mitigate spills to storm drain systems
- Identify responsible departments
- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures
- Address spills at municipal facilities, as well as public areas

- Provide training concerning spill prevention, response and cleanup to all appropriate personnel

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net/

Outdoor Loading/Unloading SC-30

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

CASQA California Stormwater Quality Association

Suggested Protocols

Loading and Unloading – General Guidelines

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Requirements

Costs

Costs should be low except when covering a large loading/unloading area.

Maintenance

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

Supplemental Information

Further Detail of the BMP

Special Circumstances for Indoor Loading/Unloading of Materials

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:

  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.

  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Outdoor Equipment Operations SC-32

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, solid waste treatment and disposal, are examples of process operations that can lead to contamination of stormwater runoff. Source controls for outdoor process equipment operations and maintenance include reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

Approach

Pollution Prevention

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Suggested Protocols

- Consider enclosing the activity in a building and connecting the floor drains to the sanitary sewer.
- Cover the work area with a permanent roof if possible.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention). If possible, connect process equipment area to public sewer or facility wastewater treatment system. Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Dry clean the work area regularly.

Training

- Train employees to perform the activity during dry periods only or substituting benign materials for more toxic ones.
- Train employee and contractors in proper techniques for spill containment and cleanup. Employees should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

CASQA California Stormwater Quality Association

- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.
- Inspect storage areas regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.

Other Considerations

- Providing cover may be expensive.
- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Requirements

Costs

Costs vary depending on the complexity of the operation and the amount of control necessary for stormwater pollution control.

Maintenance

- Conduct routine preventive maintenance, including checking process equipment for leaks.
- Clean the storm drain system regularly.

Supplemental Information

Further Detail of the BMP

Hydraulic/Treatment Modifications

If stormwater becomes polluted, it should be captured and treated. If you do not have your own process wastewater treatment system, consider discharging to the public sewer system. Use of the public sewer might be allowed under the following conditions:

- If the activity area is very small (less than a few hundred square feet), the local sewer authority may be willing to allow the area to remain uncovered with the drain connected to the public sewer.
- It may be possible under unusual circumstances to connect a much larger area to the public sewer, as long as the rate of stormwater discharges does not exceed the capacity of the wastewater treatment plant. The stormwater could be stored during the storm and then transferred to the public sewer when the normal flow is low, such as at night.

Industries that generate large volumes of process wastewater typically have their own treatment system and corresponding permit. These industries have the discretion to use their wastewater treatment system to treat stormwater within the constraints of their permit requirements for process treatment. It may also be possible for the industry to discharge the stormwater directly to an effluent outfall without treatment as long as the total loading of the discharged process

water and stormwater does not exceed the loading had a stormwater treatment device been used. This could be achieved by reducing the loading from the process wastewater treatment system. Check with your Regional Water Quality Control Board or local sewering agency, as this option would be subject to permit constraints and potentially regular monitoring.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net

Waste Handling & Disposal SC-34

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

Suggested Protocols

General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropyleneor hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Requirements

Costs

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

Supplemental Information

Further Detail of the BMP

Land Treatment System

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

Examples

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Safer Alternative Products SC-35

Description

Promote the use of less harmful products and products that contain little or no TMDL pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.
- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.
- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests by methods that pose a lower risk to employees, the public, and the environment.
- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies

Objectives

- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

CASQA California Stormwater Quality Association

- Procedures
  - Standard operating procedures (SOPs)
  - Purchasing guidelines and procedures
  - Bid packages (services and supplies)
- Materials
  - Preferred or approved product and supplier lists
  - Product and supplier evaluation criteria
  - Training sessions and manuals
  - Fact sheets for employees

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC20 – SC22) and SC41, Building and Grounds Maintenance.

Training

- Employees who handle potentially harmful materials in the use of safer alternatives.
- Purchasing departments should be encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.

Regulations

This BMP has no regulatory requirements. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements,
- Storm water runoff sampling requirements,
- Training and licensing requirements, and
- Record keeping and reporting requirements.

Equipment

- There are no major equipment requirements to this BMP.

Limitations

- Alternative products may not be available, suitable, or effective in every case.

Requirements

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.

- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources listed below.

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Rerefined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps. All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.
- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control (www.dtsc.ca.gov)

California Integrated Waste Management Board (www.ciwmb.ca.gov)

City of Santa Monica (www.santa-monica.org/environment)

City of Palo Alto (www.city.palo-alto.ca.us/cleanbay)

City and County of San Francisco, Department of the Environment (www.ci.sf.ca.us/sfenvironment)

Earth 911 (www.earth911.org/master.asp)

Environmental Finance Center Region IX (www.greenstart.org/efc9)

Flex Your Power (www.flexyourpower.ca.gov)

GreenBiz.com (www.greenbiz.com)

Green Business Program (www.abag.org/bayarea/enviro/gbus/gb.html)

Pacific Industrial and Business Association (www.piba.org)

Sacramento Clean Water Business Partners (www.sacstormwater.org)

USEPA BMP fact sheet – Alternative products (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_2.cfm)

USEPA Region IX Pollution Prevention Program (www.epa.gov/region09/p2)

Western Regional Pollution Prevention Network (www.westp2net.org)

Metals (mercury, copper)

National Electrical Manufacturers Association - Environment, Health and Safety (www.nema.org)

Sustainable Conservation (www.suscon.org)

- Auto Recycling Project
- Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center (www.birc.org)

California Department of Pesticide Regulation (www.cdpr.ca.gov)

University of California Statewide IPM Program (www.ipm.ucdavis.edu/default.html)

Dioxins

Bay Area Dioxins Project (http://dioxin.abag.ca.gov/)

Building & Grounds Maintenance SC-41

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

CASQA
California Stormwater Quality Association

- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building Repair and Construction SC-42

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Recycle

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

Approach

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.

- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.

- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more requirements for larger projects. The companion "Construction Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.

Requirements

Costs

These BMPs are generally low to modest in cost.

Maintenance

N/A

Supplemental Information

Further Detail of the BMP

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

CASQA
California Stormwater Quality Association

SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:
  - Purchase and installation of signs.
  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Drain Insert MP-52

General Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Inspection/Maintenance Considerations

Washout problems increase with rain intensity. Susceptibility of accumulated sediments to be re-suspended at low flow rates, can be corrected with an energy dissipater between gate and treatment areas.

Inspection Activities	Suggested Frequency
■ Inspect for sediment buildup and proper functioning.	At the beginning of the wet season and after significant storms
■ Verify that stormwater enters the unit and does not leak around the perimeter.	After construction.
Maintenance Activities	**Suggested Frequency**
■ Remove sediment as needed.	At the beginning of the wet season and as necessary

Maintenance Concerns, Objectives, and Goals

■ Sediment Removal

Targeted Constituents

✓ Sediment
✓ Nutrients
✓ Trash
✓ Metals
Bacteria
✓ Oil and Grease
✓ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.

CASQA California Stormwater Quality Association

Efficient Irrigation SD-12

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Maintenance Bays & Docks SD-31

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair are governed by Building and Fire Codes, and by current local agency ordinances, and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.

- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.

- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.

- Other features may be comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permit.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Attachment F
Infiltration Report (Pending)

Appendix I
Geology

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT

GEOTECHNICAL INVESTIGATION

Proposed Industrial Building Development
Northwest Corner Jurupa Avenue
and Cedar Avenue, Bloomington
County of San Bernardino, California

Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, California 92660

Project Number 18942-16
June 10, 2016

NorCal Engineering

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS
10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
(562)799-9469 FAX (562)799-9459

June 10, 2016 Project Number 18942-16

Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, California 92660

Attn: Jeremy Mape

RE: **GEOTECHNICAL INVESTIGATION** - Proposed Industrial Building Development - Located at the Northwest Corner of Jurupa Avenue and Cedar Avenue, Bloomington, in the County of San Bernardino, California

Dear Mr. Mape:
Pursuant to your request, this firm has performed this Geotechnical Investigation for the above referenced project. The purpose of this investigation is to evaluate the geotechnical conditions of subject property and to provide recommendations for the proposed development. This geotechnical engineering report presents the findings of our study along with conclusions and recommendations for development.

1.0 STRUCTURAL CONSIDERATIONS

1.1 Proposed Development

It is currently proposed to construct a large concrete tilt-up industrial building totaling 677,000 square feet (Conceptual Site Plan, Sheet A1, March 8, 2016), infiltration systems and pavement areas on the 34.54 acres of land. Grading for the development will include cut and fill procedures to construct the building pad and pavement areas. Final building plans shall be reviewed by this firm prior to submittal for city approval to determine the need for any additional study and revised recommendations pertinent to the proposed development, if necessary.

2.0 SITE DESCRIPTION

2.1 **Location:** The generally rectangular shaped property is located at the northwest corner of Jurupa and Cedar avenues, as shown on the vicinity map on Figure 1. Linden Avenue borders along the west and commercial developments to the north.

2.2 **Existing Improvements:** The site is occupied by various commercial operations and associated pavement and structures along with residences. A significant amount of stored equipment and vehicles are located on the northerly portion of the property. Other large areas of the site are open land. Surface vegetation was noted throughout the site along with trees. An unpaved road bisects the property in a north-south direction near the center of the site.

2.3 **Drainage:** The site topography descends very gently from north to south with overall elevation relief on the order of 22 feet . Surface drainage appears to be via sheetflow in a southerly direction.

3.0 SEISMICITY EVALUATION

The proposed development lies outside of any Alquist Priolo Special Studies Zone and the potential for damage due to direct fault rupture is considered unlikely.

The following seismic design parameters are provided and are in accordance with the 2013 California Building Code (CBC) as determined using the USGS Seismic Design tool (http://geohazards.usgs.gov/designmaps/us/application.php) for the referenced project.

Seismic Design Parameters

Site Location – Region 1	Latitude	34.0508°
	Longitude	-117.3987°
Seismic Use Group	II	
Site Class	D	
Risk Category	I/II/III	
Maximum Spectral Response Acceleration	S_S	1.502g
	S_1	0.630g
Adjusted Maximum Acceleration	S_{MS}	1.502g
	S_{M1}	0.945g
Design Spectral Response Acceleration Parameters	S_{DS}	1.002g
	S_{D1}	0.630g

The San Jacinto (San Bernardino) Fault zone is located approximately 7 kilometers from the site and is capable of producing a Magnitude 6.7 earthquake. Ground shaking originating from earthquakes along other active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults.

4.0 FIELD INVESTIGATION

4.1 Site Exploration

The investigation consisted of the placement of twenty-one (21) subsurface exploratory excavations by backhoe and hand auger drill to a maximum depth of 18.5 feet below current ground elevations. The explorations were placed at accessible locations throughout the site; areas inaccessible to the backhoe were explored with the hand auger equipment. Existing improvements and current operations somewhat limited the placement of the test explorations.

The explorations were visually classified and logged by a field engineer with locations of the subsurface excavations are shown on the attached Figure 2. Detailed descriptions of the subsurface conditions are listed on the logs in Appendix A. It should be noted that the transition from one soil type to another as shown on the excavation logs is approximate and may in fact be a gradual transition. The soils encountered are described as follows:

Fill Soils– Fill soils classifying as silty SAND with some gravel, rock minor debris, organics and rootlets were encountered in the explorations to depths ranging from 1 to 2 feet. These fill soils were noted to be loose to medium dense and dry to damp.

Due to the on-going operations at the property, there is the likelihood that some isolated areas of deeper fill soils will be encountered during site grading.

Native Soils – Native soils classifying as silty to slightly silty SAND with some gravel, rock and occasional cobble were encountered beneath the upper fill soils. These soils were noted to be medium dense to dense and dry to damp. Some minor caving occurred in the excavations at depth. Boring depths with the hand auger were limited due to the rock content with depth.

4.2 Groundwater

Groundwater was not encountered in any of our test excavations. Historic high groundwater in the vicinity has been recorded greater than 170 feet below grade at a monitoring well approximately 650 feet southwest of the site, based upon information from the California Department of Water Resources database http://www.water.ca.gov/waterdatalibrary/, well station number 340470N1174020W001.

5.0 LIQUEFACTION EVALUATION

Based upon review of the San Bernardino County – Land Use Services, Geologic Hazard Maps website, Map FH29C, (http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps/GeologicHazardMaps.aspx), the site is not located in an area subject to liquefaction during a seismic event. In addition, due to the deep groundwater in the vicinity, liquefaction potential is very low.

6.0 LABORATORY TESTS

Relatively undisturbed samples of the subsurface soils were obtained to perform laboratory testing and analysis for direct shear, consolidation tests, and to determine in-place moisture/densities. These relatively undisturbed ring samples were obtained by driving a thin-walled steel sampler lined with one-inch long brass rings with an inside diameter of 2.42 inches into the undisturbed soils.

Bulk bag samples were obtained in the upper soils for expansion index tests, corrosion tests, resistance value and maximum density tests. Wall loadings on the order of 3,000 lbs./lin.ft. and maximum compression loads on the order of 30 kips were utilized for testing and design purposes. All test results are included in Appendix B, unless otherwise noted.

6.1 **Field moisture content** (ASTM:D 2216-05) and the dry density of the ring samples were determined in the laboratory. This data is listed on the logs of explorations.

6.2 **Maximum density tests** (ASTM: D-1557-07) were performed on typical samples of the upper soils. Results of these tests are shown on Table I.

6.3 **Expansion index tests** (ASTM: D-4829-07) were performed on remolded samples of the upper soils to determine the expansive characteristics and to provide any necessary recommendations for reinforcement of the slabs-on-grade and the foundations. Results of these tests are provided on Table II and are discussed later in this report.

6.4 **Direct shear tests** (ASTM: D-3080-04) were performed on undisturbed and remolded samples of the subsurface soils. These tests were performed to determine parameters for the calculation of the allowable soil bearing capacity. The test is performed under saturated conditions at loads of 1,000 lbs./sq.ft., 2,000 lbs./sq.ft., and 3,000 lbs./sq.ft. with results shown on Plates A - B.

6.5 **Consolidation tests** (ASTM: D-2435-04) were performed on remolded samples to determine the differential and total settlement which may be anticipated based upon the proposed loads. Water was added to the samples at a surcharge of one KSF and the settlement curves are plotted on Plates C - E.

6.6 **Soluble sulfate, pH, Resistivity and Chloride tests** to determine potential corrosive effects of soils on concrete and metal structures were performed in the laboratory. Test results are given in Tables III – VI and are discussed later in this report.

6.7 **Resistance 'R' Value tests** (CA 301) were conducted on a representative soil sample to determine preliminary pavement section design for the proposed pavement areas. Test results are provided in Table VII and recommended pavement sections are provided later within the text of this report.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon our evaluations, the proposed development is acceptable from a geotechnical engineering standpoint. By following the recommendations and guidelines set forth in our report, the structures and grading will be safe from excessive settlements under the anticipated design loadings and conditions. The proposed grading and development shall meet all requirements of the City Building Ordinance and will not impose any adverse effect on existing adjacent land or structures.

The following recommendations are based upon soil conditions encountered in our field investigation; these near-surface soil conditions could vary across the site. Variations in the soil conditions may not become evident until the commencement of grading operations for the proposed development and revised recommendations from the soils engineer may be necessary based upon the conditions encountered.

7.1 Site Grading Recommendations

It is recommended that site inspections be performed by a representative of this firm during all grading and construction of the development to verify the findings and recommendations documented in this report. Any unusual conditions which may be encountered in the course of the project development may require the need for additional study and revised recommendations.

Any vegetation and organic/manure laden soils shall be removed and hauled from proposed grading areas prior to and during the grading operations if encountered. Existing vegetation shall not be mixed or disced into the soils. Any removed soils may be reutilized as compacted fill once any deleterious material or oversized materials (in excess of eight inches) is removed. Grading operations shall be performed in accordance with the attached *Specifications for Placement of Compacted Fill*.

7.1.1 **Removal and Recompaction Recommendations**

The upper existing fill soils (1 to 2 feet) shall be removed to competent native materials, the exposed surface scarified to a depth of 8 inches, brought to within 2% of optimum moisture content and compacted to a minimum of 90% of the laboratory standard (ASTM: D-1557-07) prior to placement of any additional compacted fill soils and pavement. *The upper 12 inches of soils beneath building pad and concrete paving shall be compacted to a minimum of 95%.* Grading shall extend a minimum of 5 horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater. Care should be taken to provide or maintain adequate lateral support for all adjacent improvements and structures at all times during the grading operations and construction phase. Adequate drainage away from the structures, pavement and slopes should be provided at all times.

It is likely that isolated areas of undiscovered fill not described in this report or materials disturbed during demolition operations will be encountered on site; if found, these areas should be treated as discussed earlier. A diligent search shall also be conducted during grading operations in an effort to uncover any underground structures, irrigation or utility lines. If encountered, these structures and lines shall be either removed or properly abandoned prior to the proposed construction. Abandonment procedures will be provided once underground structures are encountered.

If placement of slabs-on-grade and pavement is not performed immediately upon completion of grading operations, additional testing and grading of the areas may be necessary prior to continuation of construction operations. Likewise, if adverse weather conditions occur which may damage the subgrade soils, additional assessment by the soils engineer as to the suitability of the supporting soils may be needed.

7.1.2 **Fill Blanket Recommendations**

Due to the potential for differential settlement of structures supported on both compacted fill and medium dense native soils, it is recommended that all foundations be underlain by a uniform compacted fill blanket at least 3 feet in thickness. The fill blanket shall extend a minimum of 5 horizontal feet outside the edges of foundations or equidistant to the depth of fill placed, whichever is greater.

Building floor slabs should be underlain by a minimum of 2 feet of compacted fill soils.

7.1.3 **Shrinkage and Subsidence**

Results of our in-place density tests reveal that the soil shrinkage will be on the order of 10 to 12% due to excavation and recompaction, based upon the assumption that the fill is compacted to 92% of the maximum dry density per ASTM standards. Subsidence should be 0.10 feet due to earthwork operations. The volume change does not include any allowance for vegetation or organic stripping, removal of subsurface improvements or topographic approximations.

Although these values are only approximate, they represent our best estimate of shrinkage values which will likely occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field testing using the actual equipment and grading techniques should be conducted.

7.2 Temporary Excavations and Shoring Design

Temporary unsurcharged excavations less than 3 feet in height may be excavated at vertical inclinations. Excavations over 3 feet in height in the existing site materials may be trimmed at a 1 to 1 (horizontal to vertical) gradient for the entire height of the cut. In areas where soils with little or no binder are encountered, where adverse geological conditions are exposed, or where excavations are adjacent to existing structures, shoring, slot-cutting, or flatter excavations may be required.

The temporary cut slope gradients given above do not preclude local raveling and sloughing. All excavations shall be made in accordance with the requirements of the soils engineer, CAL-OSHA and other public agencies having jurisdiction.

Temporary shoring design may utilize an active earth pressure of 25 pcf without any surcharge due to adjacent traffic, equipment or structures. The passive fluid pressures of 250 pcf may be doubled to 500 pcf for temporary design.

7.3 Foundation Design

All foundations may be designed utilizing the following allowable soil bearing capacities for an embedded depth of 18 inches into approved compacted fill materials with the corresponding widths. Footings shall not traverse from compacted fill to native soils due to the potential for differential settlement of structures.

Allowable Soil Bearing Capacity (psf)

Width (ft)	Continuous Foundation	Isolated Foundation
1.5	2000	2500
2.0	2100	2600
4.0	2400	2900
6.0	2800	3300

Property line screen wall foundations where proper overexcavation and recompaction is not possible due to property line restrictions may be designed using a reduced allowable soil bearing capacity of 1,500 psf for foundations a minimum of 18 inches in depth *and* at least 8 inches into the underlying medium dense native soils. A one-third increase may be used when considering short term loading from wind and seismic forces.

Steel reinforcement may be necessary due to soil expansion or proposed loadings and shall be further evaluated by the project engineers and/or architect. A representative of this firm shall observe foundation excavations prior placement of steel reinforcement and concrete.

7.4 Settlement Analysis

Resultant pressure curves for the consolidation tests are shown on Plates C-E. Computations utilizing these curves and the recommended allowable soil bearing capacities reveal that the foundations will experience normal settlements on the order of ¾ inch and differential settlements of less than ¼ inch.

7.5 Lateral Resistance

The following values may be utilized in resisting lateral loads imposed on the structure. Requirements of the California Building Code should be adhered to when the coefficient of friction and passive pressures are combined.

Coefficient of Friction - 0.40
Equivalent Passive Fluid Pressure = 250 lbs./cu.ft.
Maximum Passive Pressure = 2,500 lbs./cu.ft.

The passive pressure recommendations are valid only for approved compacted fill soils or competent native ground.

7.6 Retaining Wall Design Parameters

Active earth pressures against retaining walls will be equal to the pressures developed by the following fluid densities. These values are for **granular backfill material** placed behind the walls at various ground slopes above the walls.

Surface Slope of Retained Materials (Horizontal to Vertical)	Equivalent Fluid Density (lb./cu.ft.)
Level	30
5 to 1	35
4 to 1	38
3 to 1	40
2 to 1	45

Any applicable short-term construction surcharges and seismic forces should be added to the above lateral pressure values. All walls shall be waterproofed as needed and protected from hydrostatic pressure by a reliable permanent subdrain system.

During a local Magnitude 6.7 earthquake along the San Jacinto fault zone, additional lateral pressures will occur along the back of retaining walls. The seismic-induced lateral soil pressure may be computed using a triangular pressure distribution with the maximum value at the top of the wall. The maximum lateral pressure of (20 pcf) H where H is the height of the retained soils above the wall footing should be used in final design of retaining walls.

Sliding resistance values and passive fluid pressure values given in our previous report may be increased by 1/3 during short-term wind and seismic loading conditions.

7.7 Floor Slab Design

Concrete floor slabs-on-grade shall be a minimum of 4 and 6 inches in thickness in office and warehouse areas, respectively, and may be placed upon fill soils compacted to a minimum of *95%* relative compaction. Additional reinforcement requirements and an increase in thickness of the slabs-on-grade may be necessary based upon soils expansion potential and proposed loading conditions in the structures and should be evaluated further by the project engineers and/or architect.

A vapor retarder should be utilized in areas which would be sensitive to the infiltration of moisture. This retarder shall meet requirements of ASTM E 96, *Water Vapor Transmission of Materials* and ASTM E 1745, *Standard Specification for Water Vapor Retarders used in Contact with Soil or Granular Fill Under Concrete Slabs*. The vapor retarder shall be installed in accordance with procedures stated in ASTM E 1643, *Standard practice for Installation of Water Vapor Retarders used in Contact with Earth or Granular Fill Under Concrete Slabs*.

The moisture retarder may be placed directly upon compacted subgrade, although 1 to 2 inches of sand beneath the membrane is desirable. The subgrade upon which the retarder is placed shall be smooth and free of rocks, gravel or other protrusions which may damage the retarder. Use of sand above the retarder is under the purview of the structural engineer; if sand is used over the retarder, it should be placed in a dry condition.

All concrete slab areas to receive floor coverings should be moisture tested to meet all manufacturer requirements prior to placement.

7.8 Expansive Soil

The upper soils at the site are very low (Expansion Index = 0-20) in expansion potential. Sites with expansive soils (Expansion Index >20) require special attention during project design and maintenance. The attached *Expansive Soil Guidelines* should be reviewed by the engineers, architects, owner, maintenance personnel and other interested parties and considered during the design of the project and future property maintenance.

7.9 Utility Trench and Excavation Backfill

Trenches from installation of utility lines and other excavations may be backfilled with on-site soils or approved imported soils compacted to a minimum of 90% relative compaction. All utility lines shall be properly bedded and shaded with clean sand having a sand equivalency rating of 30 or more. This material shall be thoroughly water jetted around the pipe structure prior to placement of compacted backfill soils.

7.10 **Corrosion Design Criteria**

Representative samples of the surficial soils revealed negligible sulfate concentrations and no special concrete design recommendations are deemed necessary at this time. It is recommended that additional sulfate tests be performed at the completion of rough grading to assure that the as graded conditions are consistent with the recommendations stated in this design. Sulfate test results may be found on the attached Table III.

Tests were also conducted on a random representative sample of soils to determine the potential corrosive effects on buried metallic structures. Tests for pH, resistivity and chloride are included on Tables IV – VI. Soil pH indicates a slightly alkaline condition. Resistivity is representative of mildly corrosive soils and metallic structures should be protected as necessary. Chloride content measured 168 ppm.

A corrosion engineer may be consulted to provide recommendations for protection of utility piping.

7.11 **Preliminary Pavement Design**

The table below provides a preliminary pavement design based upon a tested R-Value of 58 for the proposed pavement areas. Final pavement design should be based on R-Value testing of the subgrade soils near the conclusion of rough grading to assure that the as-graded conditions are consistent with those used in this preliminary design.

On-Site Flexible (Asphaltic) Pavement Section Design

Type of Traffic	Traffic Index	Inches Asphalt	Inches Base
Auto Parking/Circulation	5.0	3.0	3.0
Truck	7.0	4.0	4.0

Subgrade soils to receive base material shall be compacted to a minimum of 90% relative compaction; base material shall be compacted to at least 95%. Any concrete slab-on-grade in pavement areas shall be a minimum of 6 inches in thickness and may be placed on subgrade soils compacted to at least 95% relative compaction. An increase in slab thickness and placement of steel reinforcement due to loading conditions and soil expansion may be necessary and should be reviewed by the structural engineer.

The above recommendations are based upon estimated traffic loadings. Client should submit anticipated traffic loadings for the pavement areas to the soils engineer, when available, so that pavement sections may be reviewed to determine adequacy to support the proposed loadings.

8.0 CLOSURE

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. It is the responsibility of the owner to ensure that all information within this report is submitted to the Architect and appropriate Engineers for the project.

This firm should have the opportunity to review the final plans (72 hours for review required) to verify that all our recommendations are incorporated. This report and all conclusions are subject to the review of the controlling authorities for the project.

A preconstruction conference should be held between the developer, general contractor, grading contractor, city inspector, architect, and soil engineer to clarify any questions relating to the grading operations and subsequent construction. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This geotechnical investigation has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
KEITH D. TUCKER
No. 841
Exp. 12/31/16
GEOTECHNICAL
STATE OF CALIFORNIA

Keith D. Tucker
Project Engineer
R.G.E. 841

Mark A. Burkholder
Project Manager

SPECIFICATIONS FOR PLACEMENT OF COMPACTED FILL

Excavation
Any existing low density soils and/or saturated soils shall be removed to competent natural soil under the inspection of the Soils Engineering Firm. After the exposed surface has been cleansed of debris and/or vegetation, it shall be scarified until it is uniform in consistency, brought to the proper moisture content and compacted to a minimum of 90% relative compaction (in accordance with ASTM: D-1557-07).

In any area where a transition between fill and native soil or between bedrock and soil are encountered, additional excavation beneath foundations and slabs will be necessary in order to provide uniform support and avoid differential settlement of the structure. Verification of elevations during grading operations will be the responsibility of the owner or his designated representative.

Material For Fill
The on-site soils or approved import soils may be utilized for the compacted fill provided they are free of any deleterious materials and shall not contain any rocks, brick, asphaltic concrete, concrete or other hard materials greater than eight inches in maximum dimensions. Any import soil must be approved by the Soils Engineering firm a minimum of 72 hours prior to importation of site.

Placement of Compacted Fill Soils
The approved fill soils shall be placed in layers not excess of six inches in thickness. Each lift shall be uniform in thickness and thoroughly blended. The fill soils shall be brought to within 2% of the optimum moisture content, unless otherwise specified by the Soils Engineering firm. Each lift shall be compacted to a minimum of 90% relative compaction (in accordance with ASTM: D-1557-07) and approved prior to the placement of the next layer of soil. Compaction tests shall be obtained at the discretion of the Soils Engineering firm but to a minimum of one test for every 500 cubic yards placed and/or for every 2 feet of compacted fill placed.

The minimum relative compaction shall be obtained in accordance with accepted methods in the construction industry. The final grade of the structural areas shall be in a dense and smooth condition prior to placement of slabs-on-grade or pavement areas. No fill soils shall be placed, spread or compacted during unfavorable weather conditions. When the grading is interrupted by heavy rains, compaction operations shall not be resumed until approved by the Soils Engineering firm.

Grading Observations

The controlling governmental agencies should be notified prior to commencement of any grading operations. This firm recommends that the grading operations be conducted under the observation of a Soils Engineering firm as deemed necessary. A 24-hour notice must be provided to this firm prior to the time of our initial inspection.

Observation shall include the clearing and grubbing operations to assure that all unsuitable materials have been properly removed; approve the exposed subgrade in areas to receive fill and in areas where excavation has resulted in the desired finished grade and designate areas of overexcavation; and perform field compaction tests to determine relative compaction achieved during fill placement. In addition, all foundation excavations shall be observed by the Soils Engineering firm to confirm that appropriate bearing materials are present at the design grades and recommend any modifications to construct footings.

EXPANSIVE SOIL GUIDELINES

The following expansive soil guidelines are provided for your project. The intent of these guidelines is to inform you, the client, of the importance of proper design and maintenance of projects supported on expansive soils. ***You, as the owner or other interested party, should be warned that you have a duty to provide the information contained in the soil report including these guidelines to your design engineers, architects, landscapers and other design parties in order to enable them to provide a design that takes into consideration expansive soils.***

In addition, you should provide the soil report with these guidelines to any property manager, lessee, property purchaser or other interested party that will have or assume the responsibility of maintaining the development in the future.

Expansive soils are fine-grained silts and clays which are subject to swelling and contracting. The amount of this swelling and contracting is subject to the amount of fine-grained clay materials present in the soils and the amount of moisture either introduced or extracted from the soils. Expansive soils are divided into five categories ranging from "very low" to "very high". Expansion indices are assigned to each classification and are included in the laboratory testing section of this report. *If the expansion index of the soils on your site, as stated in this report, is 21 or higher, you have expansive soils.* The classifications of expansive soils are as follows:

Classification of Expansive Soil*

Expansion Index	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
Above 130	Very High

*From Table 18A-I-B of California Building Code (1988)

When expansive soils are compacted during site grading operations, care is taken to place the materials at or slightly above optimum moisture levels and perform proper compaction operations. Any subsequent excessive wetting and/or drying of expansive soils will cause the soil materials to expand and/or contract. These actions are likely to cause distress of foundations, structures, slabs-on-grade, sidewalks and pavement over the life of the structure. ***It is therefore imperative that even after construction of improvements, the moisture contents are maintained at relatively constant levels, allowing neither excessive wetting or drying of soils.***

Evidence of excessive wetting of expansive soils may be seen in concrete slabs, both interior and exterior. Slabs may lift at construction joints producing a trip hazard or may crack from the pressure of soil expansion. Wet clays in foundation areas may result in lifting of the structure causing difficulty in the opening and closing of doors and windows, as well as cracking in exterior and interior wall surfaces. In extreme wetting of soils to depth, settlement of the structure may eventually result. Excessive wetting of soils in landscape areas adjacent to concrete or asphaltic pavement areas may also result in expansion of soils beneath pavement and resultant distress to the pavement surface.

Excessive drying of expansive soils is initially evidenced by cracking in the surface of the soils due to contraction. Settlement of structures and on-grade slabs may also eventually result along with problems in the operation of doors and windows.

Projects located in areas of expansive clay soils will be subject to more movement and "hairline" cracking of walls and slabs than similar projects situated on non-expansive sandy soils. There are, however, measures that developers and property owners may take to reduce the amount of movement over the life the development. The following guidelines are provided to assist you in both design and maintenance of projects on expansive soils:

- Drainage away from structures and pavement is essential to prevent excessive wetting of expansive soils. Grades of at least 3% should be designed and maintained to allow flow of irrigation and rain water to approved drainage devices or to the street. Any "ponding" of water adjacent to buildings, slabs and pavement after rains is evidence of poor drainage; the installation of drainage devices or regrading of the area may be required to assure proper drainage. Installation of rain gutters is also recommended to control the introduction of moisture next to buildings. Gutters should discharge into a drainage device or onto pavement which drains to roadways.

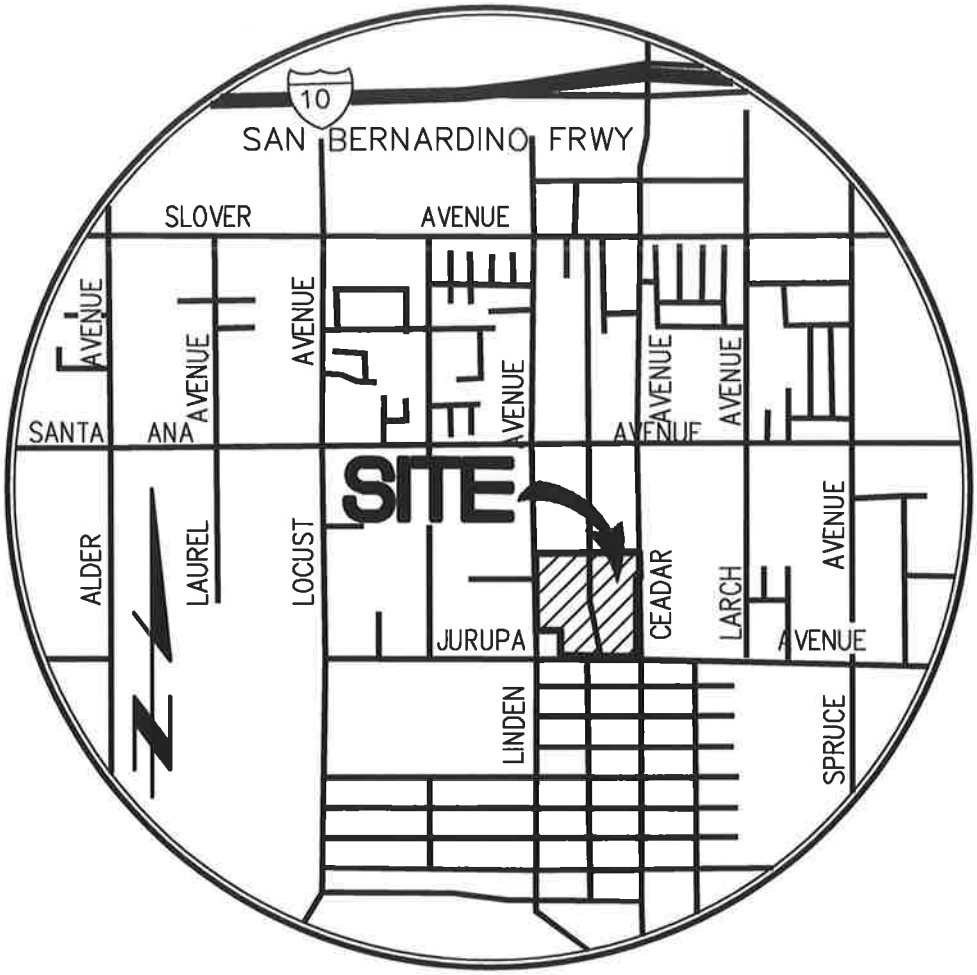
- Irrigation should be strictly controlled around building foundations, slabs and pavement and may need to be adjusted depending upon season. This control is essential to maintain a relatively uniform moisture content in the expansive soils and to prevent swelling and contracting. Over-watering adjacent to improvements may result in damage to those improvements. NorCal Engineering makes no specific recommendations regarding landscape irrigation schedules.

- Planting schemes for landscaping around structures and pavement should be analyzed carefully. Plants (including sod) requiring high amounts of water may result in excessive wetting of soils. Trees and large shrubs may actually extract moisture from the expansive soils, thus causing contraction of the fine-grained soils.

- Thickened edges on exterior slabs will assist in keeping excessive moisture from entering directly beneath the concrete. A six-inch thick or greater deepened edge on slabs may be considered. Underlying interior and exterior slabs with 6 to 12 inches or more of non-expansive soils and providing presaturation of the underlying clayey soils as recommended in the soil report will improve the overall performance of on-grade slabs.

- Increase the amount of steel reinforcing in concrete slabs, foundations and other structures to resist the forces of expansive soils. The precise amount of reinforcing should be determined by the appropriate design engineers and/or architects.

- Recommendations of the soil report should always be followed in the development of the project. Any recommendations regarding presaturation of the upper subgrade soils in slab areas should be performed in the field and verified by the Soil Engineer.



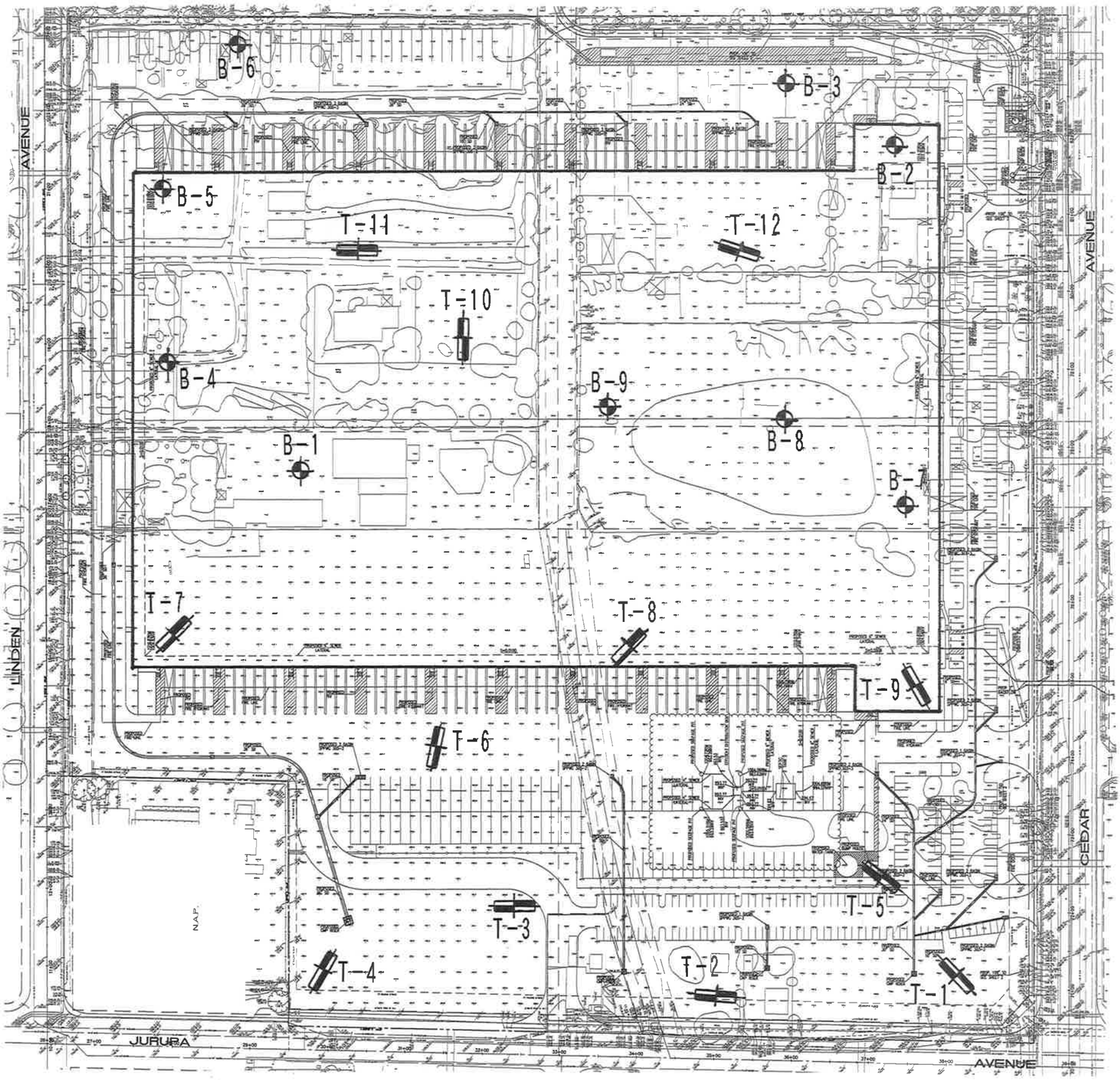
VICINITY MAP

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

VICINITY MAP

PROJECT 18942-16 | DATE 6/2016

FIGURE 1



0 150'

SCALE: 1"=150'

NorCal Engineering SOILS AND GEOTECHNICAL CONSULTANTS	LOCATION OF FIELD EXPLORATIONS
PROJECT 18942-16 DATE 6/2016	FIGURE 2

APPENDICES

(In order of appearance)

Appendix A - Logs of Test Explorations

- *Logs of Test Excavations T-1 to T-12
- *Logs of Test Borings B-1 to B-9

Appendix B - Laboratory Analysis

- *Table I - Maximum Dry Density Tests
- *Table II - Expansion Index Tests
- *Table III - Sulfate Tests
- *Table IV - pH Tests
- *Table V - Resistivity Tests
- *Table VI - Chloride Tests
- *Table VII - Resistance 'R' Value Tests

- *Plates A-B - Direct Shear Tests
- *Plates C-E - Consolidation Tests

APPENDIX A

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL, SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

KEY:

- ■ Indicates 2.5-inch Inside Diameter. Ring Sample.
- ☒ Indicates 2-inch OD Split Spoon Sample (SPT).
- ⧅ Indicates Shelby Tube Sample.
- ◫ Indicates No Recovery.
- ◧ Indicates SPT with 140# Hammer 30 in. Drop.
- ⊠ Indicates Bulk Sample.
- ◩ Indicates Small Bag Sample.
- ◨ Indicates Non-Standard
- ⧗ Indicates Core Run.

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Western Realco 18942-16	Log of Trench T-1

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp					
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-2

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, loose, dry					
		NATURAL SOILS					
		Silty SAND with occasional gravel, rock					
5		Brown, medium dense, dry to damp					
		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Trench completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

Western Realco 18942-16	Log of Trench T-3

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp					
		Trench completed at depth of 8'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-4

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel Brown, medium dense, damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp					
10		Trench completed at depth of 10'					
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-5

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
	GWT not encountered	NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Trench completed at depth of 5'					
10							
15							
20							
25							
30							
35							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-6

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, rootlets					
		Brown, loose, dry					
		NATURAL SOILS					
		Silty SAND with occasional gravel, rock					
5		Brown, medium dense to dense, dry to damp					
		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Trench completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-7

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, rootlets Brown, loose, dry	■		3.9	107.9	
		NATURAL SOILS Sandy SILT to Silty SAND with occasional gravel Brown, medium dense/stiff, damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp Decrease in rock, cobbles @ 16'	■		5.1	112.6	
			■		1.9	117.8	
10			■		1.6	119.1	
15			■		1.2	124.9	
			■		1.7	105.5	
		Trench completed at depth of 18.5'					
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-8

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics Brown, loose, dry					
	GWT not encountered	NATURAL SOILS Silty SAND with occasional gravel, some rock Brown, medium dense to dense, dry to damp					
5		Trench completed at depth of 5'					
10							
15							
20							
25							
30							
35							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-9

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, loose, dry	■		2.1	110.5	
		NATURAL SOILS					
		Silty SAND with occasional gravel, some rock					
		Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, rock					
		Light brown, medium dense to dense, dry to damp					
		Trench completed at depth of 6'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-10

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp			2.8	117.1	
10					1.9	122.0	
		Silty SAND to Sandy SILT with occasional gravel Brown, medium dense/stiff, dry					
15					2.8	107.4	
		Trench completed at depth of 18'			1.5		
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-11

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock					
		Brown, loose, dry					
		NATURAL SOILS					
		Silty SAND with occasional gravel, rock					
		Brown, medium dense to dense, dry					
5		Slightly silty SAND with gravel, rock	■		1.8	123.6	
		Light brown, medium dense to dense, dry					
		Trench completed at depth of 6'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Trench T-12

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock Brown, loose, dry	■		5.2	108.1	
		NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles Light brown, medium dense to dense, dry to damp	■		2.1	130.0	
10			■		2.2	113.5	
15			■		1.4	113.4	
		Trench completed at depth of 18'	▽		1.3		
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-1

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, organics, rootlets					
		Brown, loose, dry	■		2.9	106.1	
		NATURAL SOILS					
		Silty SAND with occasional gravel					
		Brown, medium dense, dry to damp					
5		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-2

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		2" Asphalt					
		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, medium dense, damp			5.6	109.4	
		NATURAL SOILS					
		Silty SAND with occasional gravel, rock					
5		Brown, medium dense to dense, dry to damp					
		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-3

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, asphalt pieces, organics, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel Brown, medium dense to dense, dry to damp					
5		Boring completed at depth of 3.5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-4

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, loose, dry					
		NATURAL SOILS					
		Silty SAND with occasional gravel, rock					
5		Brown, medium dense to dense, dry to damp					
		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Boring completed at depth of 6.5'	☒		1.4		
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-5

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
		NATURAL SOILS Silty SAND with occasional gravel Brown, medium dense, dry to damp					
5		Boring completed at depth of 3'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-6

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, rootlets					
		Brown, loose, dry					
		NATURAL SOILS					
		Silty SAND with occasional gravel	■		1.4	108.2	
		Brown, medium dense, dry					
5		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-7

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, loose, dry	■		4.0	111.8	
		NATURAL SOILS					
		Silty SAND with occasional gravel					
		Brown, medium dense to dense, dry to damp					
5		Slightly silty SAND with gravel, occasional cobbles	■		4.0	113.7	
		Light brown, medium dense to dense, damp					
		Boring completed at depth of 6'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-8

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples: Type	Samples: Blow Counts	Laboratory: Moisture	Laboratory: Dry Density	Laboratory: % Passing 200 Sieve
0		FILL SOILS Silty SAND with gravel, rock, organics, rootlets Brown, loose, dry					
		GWT not encountered					
		NATURAL SOILS Silty SAND with occasional gravel, rock Brown, medium dense to dense, dry to damp					
5		Boring completed at depth of 3.5'					
10							
15							
20							
25							
30							
35							

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

Western Realco 18942-16	Log of Boring B-9

Boring Location: Jurupa & Cedar, Bloomington	
Date of Drilling: 6/2/16	Groundwater Depth: None Encountered
Drilling Method: Hand Auger	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples Type	Samples Blow Counts	Laboratory Moisture	Laboratory Dry Density	Laboratory % Passing 200 Sieve
0		FILL SOILS					
		Silty SAND with gravel, rock, organics, rootlets					
		Brown, loose, dry					
		NATURAL SOILS	■		2.2	106.9	
		Silty SAND with occasional gravel					
5		Brown, medium dense to dense, dry to damp					
		Slightly silty SAND with gravel, rock, occasional cobbles					
		Light brown, medium dense to dense, dry to damp					
		Boring completed at depth of 5'					
10							
15							
20							
25							
30							
35							

GWT not encountered

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\18942-16.log Date: 6/9/2016

NorCal Engineering

APPENDIX B

TABLE I
MAXIMUM DENSITY TESTS
(ASTM: D-1557-07)

Sample	Classification	Optimum Moisture	Maximum Dry Density (lbs./cu.ft.)
T-8 @ 2-4'	silty SAND	9.5	133.0
T-10 @ 4-5	slightly silty SAND	10.0	127.0

TABLE II
EXPANSION INDEX TESTS
(ASTM: D-4829-07)

Sample	Classification	Expansion Index
T-8 @ 2-4'	silty SAND	00

TABLE III
SOLUBLE SULFATE TESTS
(CT 417)

Sample	Sulfate Concentration (%)
B-2 @ 1-2'	.0003

TABLE IV
pH TESTS

Sample	pH
B-2 @ 1-2'	7.4

TABLE V
RESISTIVITY TESTS
(CT 643)

Sample	Resistivity (ohm-cm)
B-2 @ 1-2'	6298

TABLE VI
CHLORIDE TESTS
(CT 422))

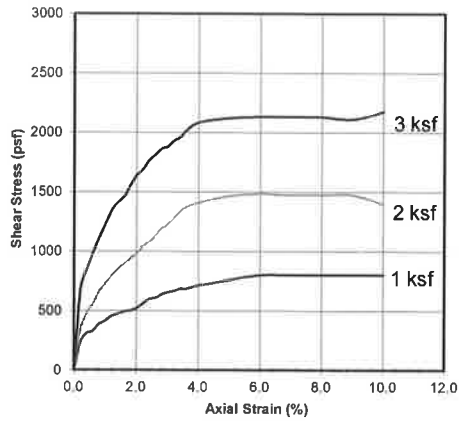
Sample	Concentration (ppm)
B-2 @ 1-2'	168

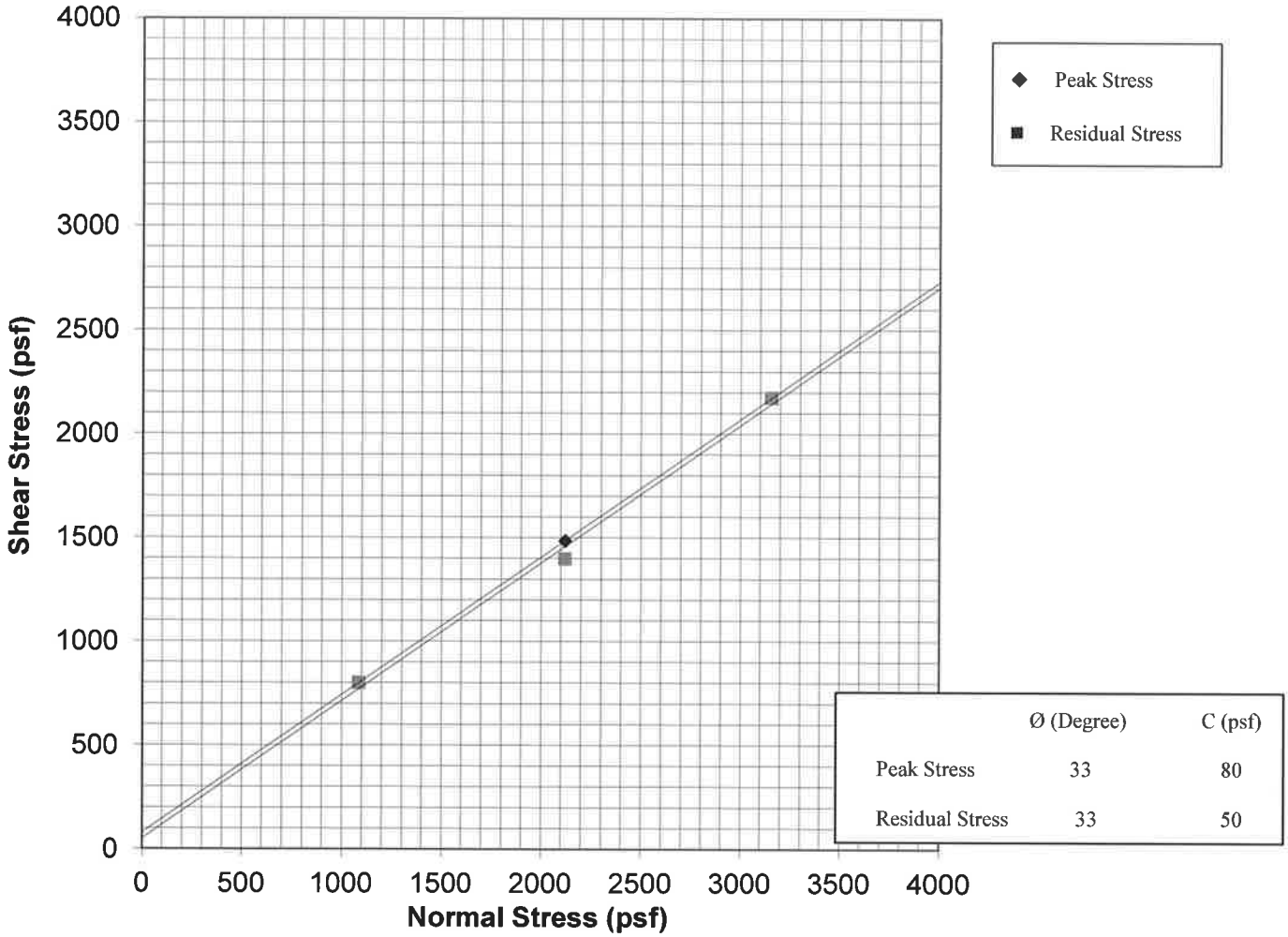
TABLE VII
RESISTANCE 'R' VALUE TESTS
(CA 301))

Sample	'R' Value
T-1 @ 1-2'	58

Sample No.	T7 @ 5'
Sample Type:	Undisturbed/Saturated
Soil Description:	Fine-Medium Grained Sand w/Some Silt

		1	2	3
Normal Stress	(psf)	1085	2120	3156
Peak Stress	(psf)	801	1485	2175
Displacement	(in)	0.150	0.150	0.250
Residual Stress	(psf)	801	1399	2175
Displacement	(in.)	0.250	0.250	0.250
In Situ Dry Density	(pcf)	112.6	112.6	112.6
In Situ Water Content	(%)	5.1	5.1	5.1
Saturated Water Content	(%)	17.6	17.6	17.6
Strain Rate	(in/min)	0.020	0.020	0.020





	Ø (Degree)	C (psf)
Peak Stress	33	80
Residual Stress	33	50

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Western Realco

PROJECT NUMBER: 18942-16 DATE: 6/10/2016

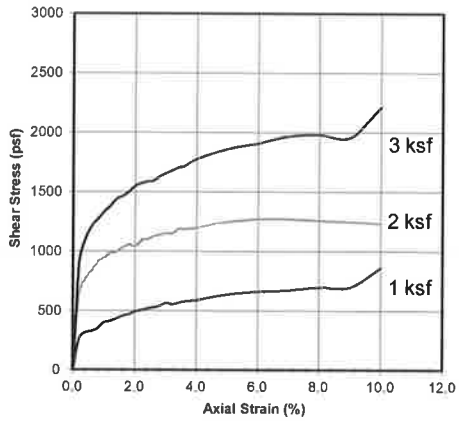
DIRECT SHEAR TEST

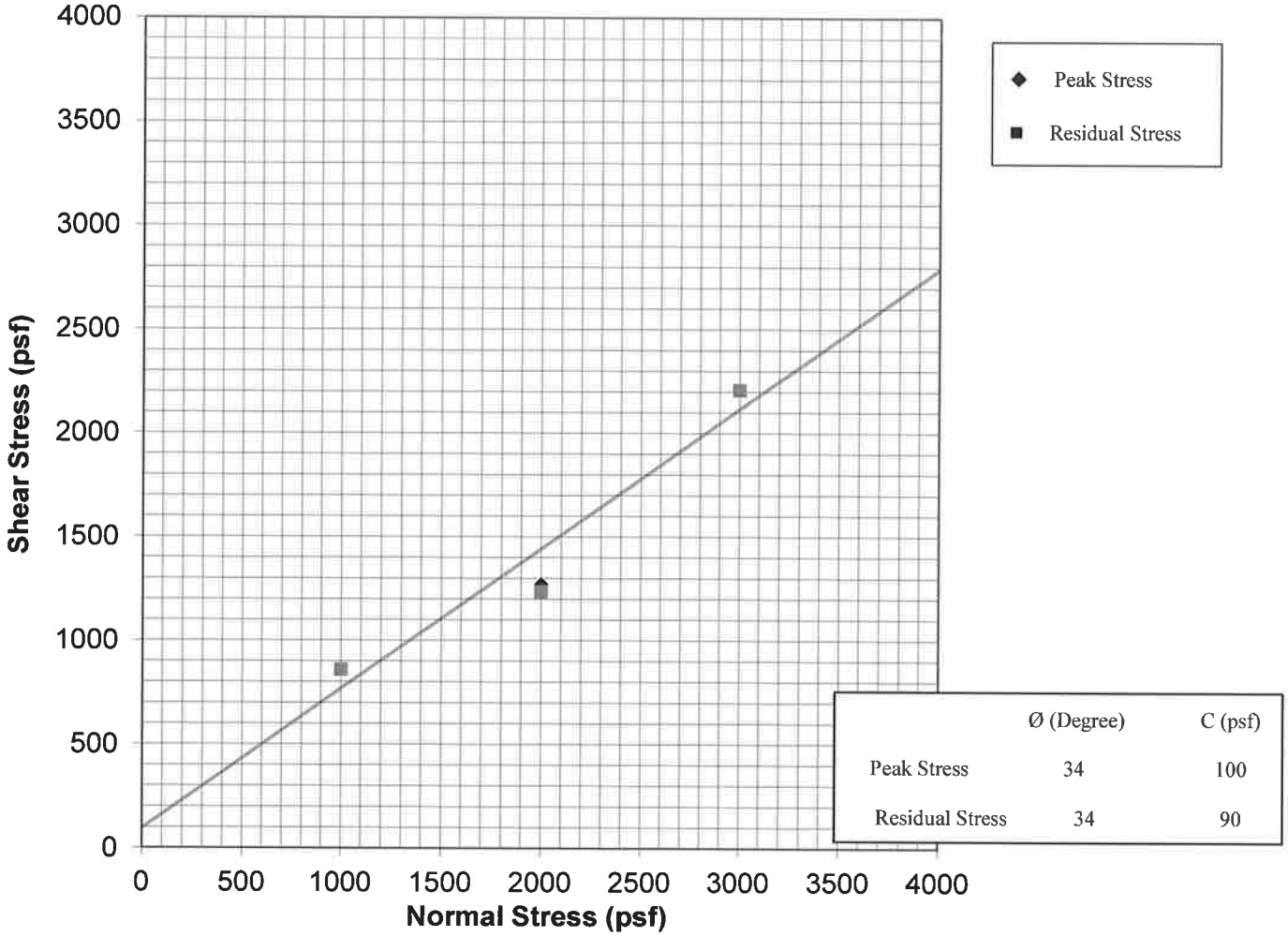
ASTM D3080

Plate A

Sample No.	T8 @ 2-4'
Sample Type:	Remolded/Saturated
Soil Description:	Fine to Medium Grained Sand w/Some Silt

		1	2	3
Normal Stress	(psf)	1000	2000	3000
Peak Stress	(psf)	860	1272	2210
Displacement	(in)	0.250	0.150	0.250
Residual Stress	(psf)	860	1236	2210
Displacement	(in.)	0.250	0.250	0.250
In Situ Dry Density	(pcf)	122.7	122.7	122.7
In Situ Water Content	(%)	9.6	9.6	9.6
Saturated Water Content	(%)	13.4	13.4	13.4
Strain Rate	(in/min)	0.020	0.020	0.020





	Ø (Degree)	C (psf)
Peak Stress	34	100
Residual Stress	34	90

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Western Realco

PROJECT NUMBER: 18942-16 DATE: 6/10/2016

DIRECT SHEAR TEST

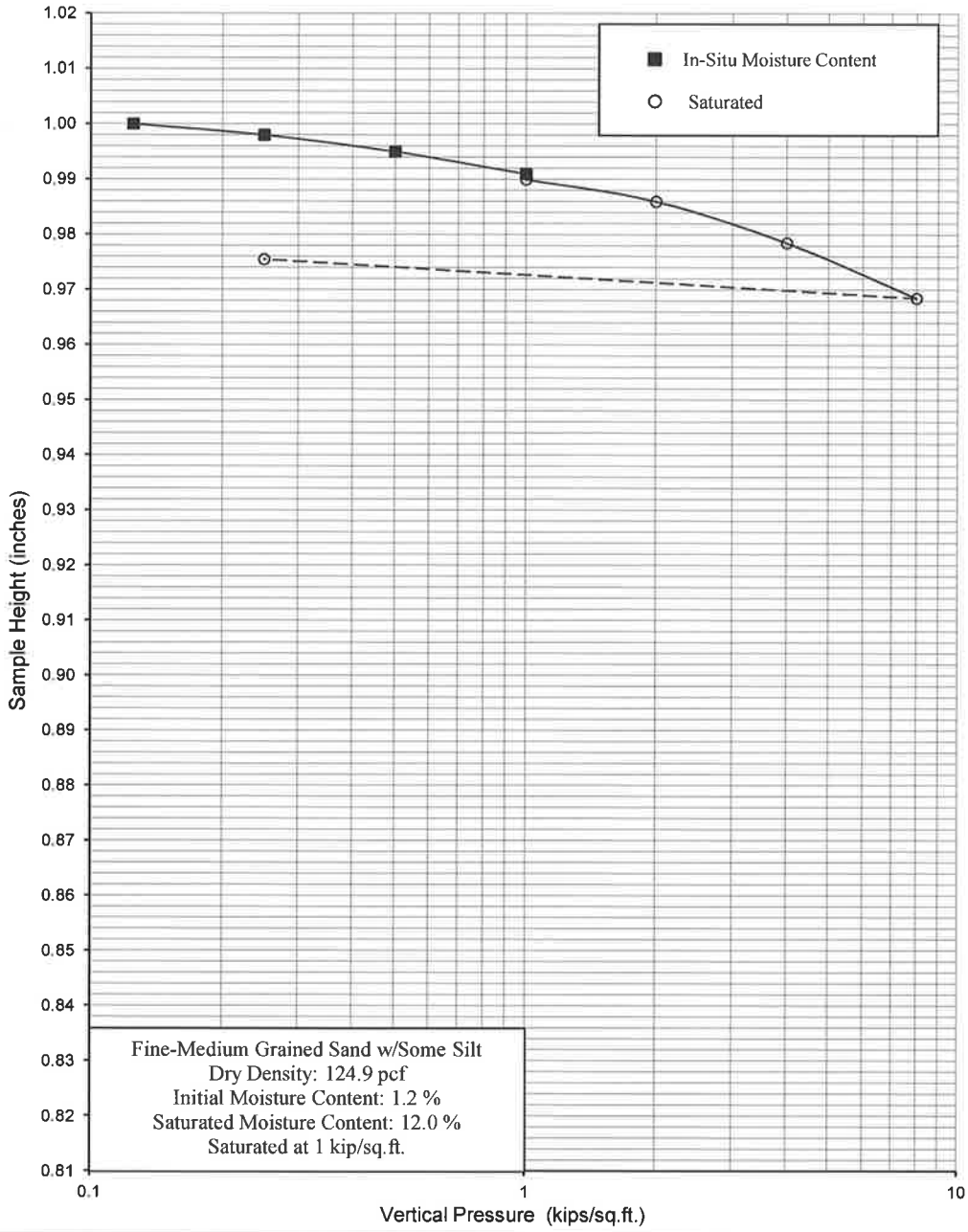
ASTM D3080

Plate B

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	
0.125	1.0000	0.0	
0.25	0.9980	0.2	
0.5	0.9950	0.5	
1	0.9910	0.9	
1	0.9900	1.0	
2	0.9860	1.4	
4	0.9785	2.2	
8	0.9685	3.2	Saturated
0.25	0.9755	2.5	

Sample No.	T7	Depth	15'	Date	6/10/2016

Date Tested: 6/8/2016
Sample: T7
Depth: 15'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Western Realco

PROJECT NUMBER: 18942-16 DATE: 6/10/2016

CONSOLIDATION TEST

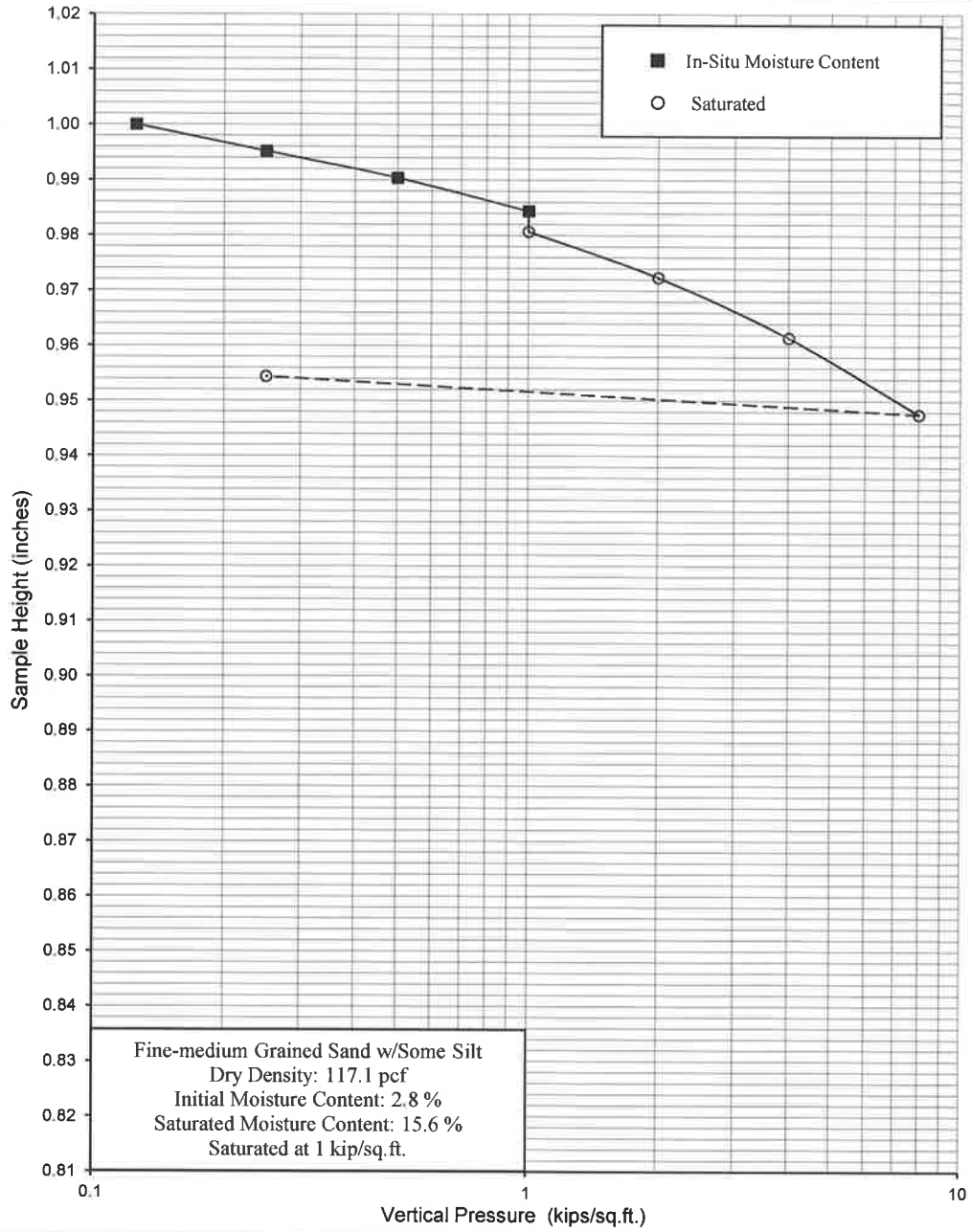
ASTM D2435

Plate C

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	
0.125	1.0000	0.0	
0.25	0.9952	0.5	
0.5	0.9904	1.0	
1	0.9844	1.6	
1	0.9807	1.9	
2	0.9724	2.8	
4	0.9615	3.9	
8	0.9476	5.2	
0.25	0.9544	4.6	Saturated

Sample No.	T10	Depth	5'	Date	6/10/2016

Date Tested: 6/7/2016
Sample: T10
Depth: 5'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Western Realco

PROJECT NUMBER: 18942-16 DATE: 6/10/2016

CONSOLIDATION TEST

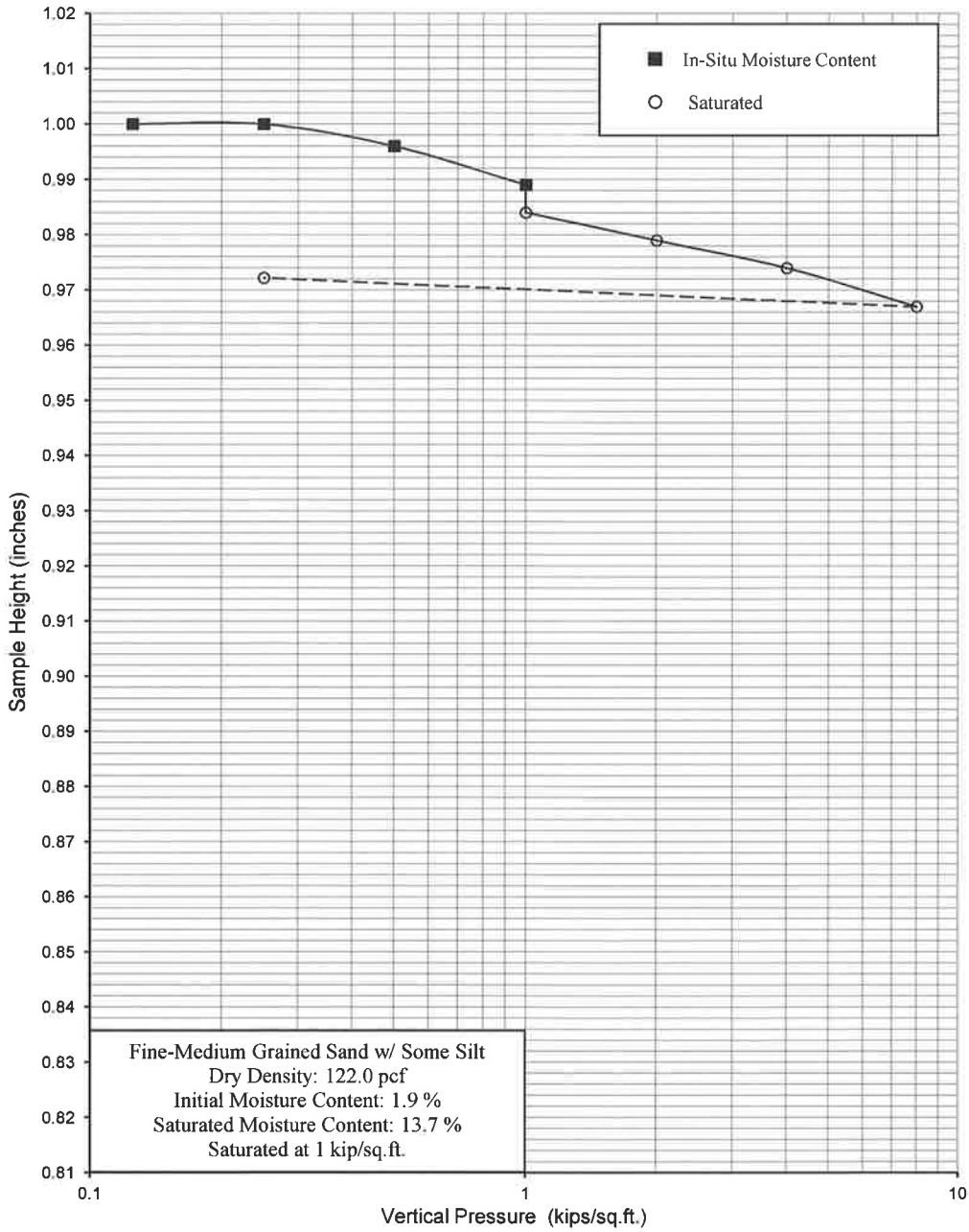
ASTM D2435

Plate D

Vertical Pressure (kips/sq.ft.)	Sample Height (inches)	Consolidation (percent)	
0.125	1.0000	0.0	
0.25	1.0000	0.0	
0.5	0.9960	0.4	
1	0.9890	1.1	
1	0.9840	1.6	
2	0.9790	2.1	
4	0.9740	2.6	
8	0.9670	3.3	Saturated
0.25	0.9722	2.8	

Sample No.	T10	Depth	10'	Date	6/10/2016

Date Tested: 6/7/2016
Sample: T10
Depth: 10'



NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS

Western Realco

PROJECT NUMBER: 18942-16 DATE: 6/10/2016

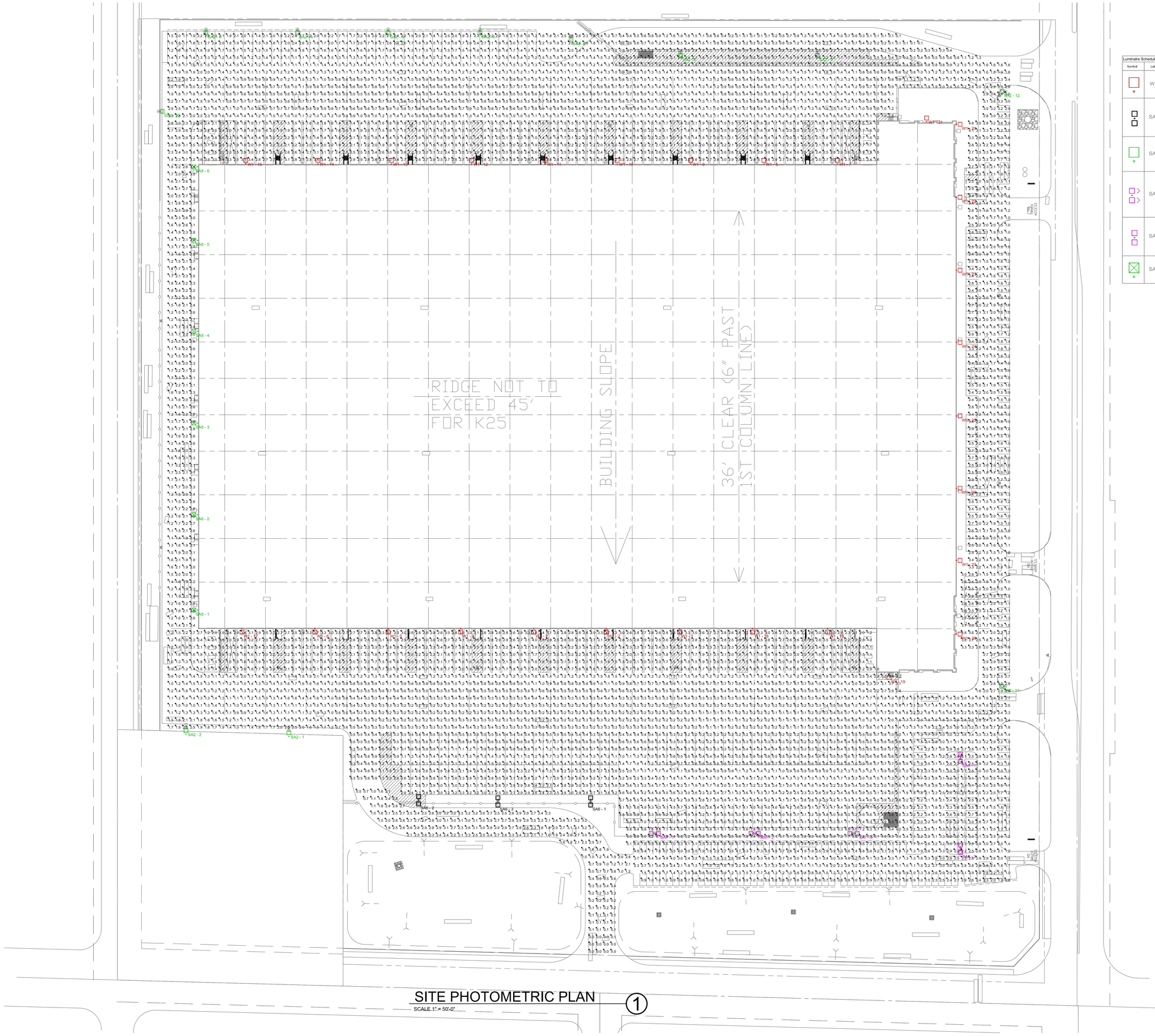
CONSOLIDATION TEST

ASTM D2435

Plate E

Appendix J
Lighting Plan

BLOOMINGTON INDUSTRIAL FACILITY
Draft
ENVIRONMENTAL IMPACT REPORT



SITE PHOTOMETRIC PLAN (1)

SCALE 1" = 50'-0"

Luminaire Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	W1	28		US ARCHITECTURAL SVL22-4V-400PSMH-FG WALL MT AT 30 FT AFG	SVL22-4V-400PSMH-FG	MH 400W Pulse Arc clear ED-37	1	SVL22-4-40P-FG.ies	44000	0.72	440
	SA6	3	U.S. ARCHITECTURAL LIGHTING	US ARCHITECTURAL SVL22-V-SQ-400PSMH-FG-AB9011 POLE MT AT 34 FT AFG 30 FT POLE 4 FT BASE	SVL22-V-SQ-400PSMH-FG	MH 400W Pulse Arc clear ED-37	1	SVL22-S-40P-FG.ies	44000	0.72	880
	SA2	12		US ARCHITECTURAL SVL22-4V-400PSMH-FG POLE MT AT 32.5 FT AFG 30 FT POLE 2.5 FT BASE	SVL22-4V-400PSMH-FG	MH 400W Pulse Arc clear ED-37	1	SVL22-4-40P-FG.ies	44000	0.72	440
	SA7	3		US ARCHITECTURAL SVL22-X-750PSMH-FG POLE MT AT 34 FT AFG 30 FT POLE 4 FT BASE OPTICS SPUN 90 DEGREES	ML-VR45-FG-mv-001	MH 750W pulse start clear BT-37	1	SVL22-4-75P-FG.ies	80000	0.72	1620
	SA8	2	U.S. ARCHITECTURAL LIGHTING	US ARCHITECTURAL SVL22-V-SQ-400PSMH-FG-AB9011 POLE MT AT 32.5 FT AFG 30 FT POLE 2.5 FT BASE	SVL22-V-SQ-400PSMH-FG	MH 400W Pulse Arc clear ED-37	1	SVL22-S-40P-FG.ies	44000	0.72	880
	SA8	6		US ARCHITECTURAL SVL22-4A3Y-400PSMH-FG WALL MT AT 30 FT AFG	SVL22-A3Y-400PSMH-FG	MH 400W Pulse Arc clear ED-37	1	SVL22-3-40P-FG.ies	44000	0.72	440

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
Calc Zone #2	+	1.8 fc	9.1 fc	0.1 fc	91.0:1	18.0:1	0.2:1
Calc Zone #2	+	1.8 fc	3.7 fc	0.0 fc	N/A	N/A	0.5:1

DESIGN/BUILD NOTES:

1. THESE DRAWINGS AND SPECIFICATIONS ARE PART OF A PRESENTATION FOR A PROPOSED CONTRACT AND ARE THE PROPERTY OF AND COPYRIGHT BY MAMMOTH ELECTRIC. THESE PLANS SHALL NOT BE USED, IN WHOLE OR IN PART, BY ANY ONE OTHER THAN MAMMOTH ELECTRIC. THESE PLANS REPRESENT A SCHEMATIC DESIGN/BUILD LAYOUT OF THE ELECTRICAL SYSTEM(S). THESE PLANS MAY NOT INDICATE ALL MATERIALS THAT WILL BE REQUIRED TO PROVIDE A COMPLETE AND OPERATING ELECTRICAL SYSTEM(S).

2. THESE PLANS WERE PREPARED UNDER THE EXEMPTION TO DIVISION 3 OF THE CALIFORNIA BUSINESS AND PROFESSIONS CODE BY SECTION 55372. AS THE LICENSED CONTRACTOR RESPONSIBLE FOR THE PREPARATION OF THESE DRAWINGS, ONLY MAMMOTH ELECTRIC MAY UTILIZE THEM.

REVISIONS

1
2
3
4
5
6
7
8

BASTIEN AND ASSOCIATES, INC.
ARCHITECTURE AND PLANNING
15661 RED HILL AVENUE, SUITE 150
TUSTIN, CALIFORNIA 92780
(714) 617-9600 FAX: (714) 617-9671

CONSULTANT:
MAMMOTH ELECTRIC, INC.
170 E. LIBERTY AVENUE
ANAHEIM, CALIFORNIA 92801
T 714.446.8880
F 714.446.8811
WWW.MAMMOTHELECTRIC.COM
MAMMOTH ELECTRIC
CA. LIC. # C-10 700898

LICENSED ELECTRICAL CONTRACTOR
MAMMOTH ELECTRIC
C-10 #700898
STATE OF CALIFORNIA

WESTERN REALCO
CEDAR AVENUE
BLOOMINGTON, CALIFORNIA

SITE PHOTOMETRIC

JOB NO:
DATE: 08/10/16
DRAWN: E.R.
FILENAME:
PLOTSCALE:

E-1
SHEET

Appendix K
Resumes

Christine Jacobs-Donoghue

Sr. Environmental Project Manager

Years with Michael Baker: 1
Years with Other Firms: 18

Degrees

B.S., 1996, Geology, California State University

A.S., 1994, Physical Science, Chaffey College, Rancho Cucamonga

Coursework, Environmental Science-Land Use/GIS and Computer Cartography, University of California at Riverside, University Ext

Coursework, Natural Resources, University of Arizona

Coursework, Urban Planning/Environmental Planning, University of California at Riverside, University Ext

Certificate, 2006, Paralegal, University of California at Riverside, University Ext

General Qualifications

Ms. Donoghue has several years of professional experience in environmental impact analysis/permitting, natural resources, project management and public involvement. She has authored and managed the preparation of environmental documents to satisfy CEQA, NEPA, Clean Water Act, and other federal, state, and local requirements in California and Arizona. She typically serves as lead author/editor for the applicable CEQA/NEPA document, and as an environmental task leader and/or project manager for development projects. Her project experience is diverse involving private and public development projects in the fields of: transportation (over 8 years), land use, parks/recreation, residential and commercial development, industrial/solid waste, water supply/infrastructure, port of entry facilities, schools, defense, energy and other municipal projects. She has facilitated agency and public scoping meetings, conducted project presentations, and addressed comments in formal public hearings. She has also facilitated agency coordination meetings (e.g. Section 4(f)).

Experience

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Program Manager. Environmental Project Manager overseeing the preparation of the Environmental Impact Report for the City's water recycling project. Responsible for leading comment resolution, quality control of all sections, and key author/editor of key content. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Highland Park EIR. *Jurupa Valley, City of.* Principal-In-Charge. Provided oversight and team input as needed, and provide meeting support during public hearings.

Warehouse Development Environmental Impact Report, San Bernardino County, California. *Western Realco.* Project Manager. Responsible for preparation of a focused EIR air quality, land use, noise, and transportation to satisfy CEQA requirements. Responsible for coordinating and quality controlling peer review of applicant technical studies, and preparation of greenhouse gas and health risk assessment. Coordinating with the County on all aspects of the CEQA process, including noticing and facilitation of a scoping meeting. Michael Baker provided environmental services for the development of a warehouse project in the Bloomington Community. Michael Baker's services included the preparation of a focused environmental impact report evaluating air quality, cultural resources, greenhouse gasses, land use, hazardous materials, and transportation to satisfy California

Environmental Quality Act requirements. Michael Baker also peer reviewed applicant-provided technical studies and performed greenhouse gas and health risk assessments. Key environmental concerns included the presence of historic age structures to be demolished, land use changes, air quality impacts on residents and schools, and neighborhood traffic impacts.

Non-Michael Baker Project Experience

Las Terrazas EA and CEQA Checklist. *AMCAL Mulit-Housing Inc. and San Bernardino Economic Development Agency.* Project involves the development of 112 multi-family homes for low- and very-low income households in unincorporated San Bernardino County near Colton. Project Manager/primary editor for the preparation of a combined Environmental Assessment and CEQA Checklist to satisfy Housing and Urban Development (HUD) NEPA and County CEQA requirements.

Redlands Heritage Park Master Plan IS-MND. *City of Redlands.* The project involves the improvement of the City's existing Heritage Park and on-site Grove Middle School, which focusses on agricultural related curriculum, consistent with a Master Plan. Future improvements include expansion of the historic Barton School House, various landscape improvements, parking lots, and an amphitheater. Project manager/primary editor for the preparation of an IS/MND, air quality and noise analysis, and peer review of existing biological and cultural reports.

Wilcox Avenue Hotel IS-MND. *Wilcox Hotel LLC and City of Los Angeles.* Project involves the redevelop of existing commercial property (warehouse) into a 12--story hotel with a restaurant and a rooftop bar. An IS-MND was prepared to be consistent with City of Los Angeles Local CEQA Guidelines. Project specific air quality and greenhouse gas analysis were prepared, contrasting the change in use from warehouse to hotel. Shade and shadow analysis evaluates the increase in height on outdoor public space (parks, yards, etc.).

Moreno Valley Pavement Preservation Phase 2 Categorical Exclusion/Exemption. *City of Moreno Valley, Caltrans.* Project involved the replacement of pavement along two main segments of Moreno Valley's circulation system. The project included federal funding and thus, was administered as a Caltrans Local Assistance project. A Phase I Environmental Site Assessment was prepared to satisfy Caltrans requirements, prepared the CEQA Exemption, and the NEPA Categorical Exclusion for the project. The project was approved in 2014.

Berryessa VillaSport Fitness Center. *SyWest Development, VillaSport and City of San Jose.* Project involved the redevelopment of a vacant movie theater site into a fitness center. An IS-MND was prepared, along with supporting technical analysis, including air quality/health risk/greenhouse gas and biological resources. Noise analysis included assessment of exterior noise from outdoor play areas associated with on-site daycare center, as well as the pool area and water slide, on adjacent residential uses. Privacy of adjacent residents was also a consideration. The project was approved in 2014.

City of Redlands Sports Park Master Plan EIR/EA. *City of Redlands.* Project involves the development of a 115-acre sports park near the Santa Ana River and Redlands Municipal Airport. Primary author of award winning EIR/EA recognized by the Inland Empire Association of Environmental Professional for Outstanding Environmental Analysis. Assisted City in environmental oversight related to development of the sports park master plan. Significant issues related to the endangered San Bernardino kangaroo rat and airport hazards.

Hollywood Central Park EIR/EA. *Friends of Hollywood Central Park (FHCP), City of Los Angeles Recreation and Parks, Caltrans and FHWA.* FHCP is planning a 44-acre urban park to be built over a one-mile stretch of the Hollywood Freeway in Los Angeles. The project would provide needed recreation and community facilities and reconnect neighborhoods currently divided by the Hollywood Freeway. The proposed land use plan includes

traditional recreations areas (lawns, plazas, sports fields, dog parks), as well an amphitheater, restaurants, community center, library, police substation, and retail uses. A Notice of Preparation of Environmental Impact Report and Initial Study was prepared for the project, illustrating the environmental issues expected to be addressed in the EIR for the project. An initial scoping meeting demonstrated strong community interest in the project.

Lighthouse Live/Work Residential Project IS-MND. *City of Costa Mesa.* This project involved the redevelopment of an existing industrial site into moderate density residential and live/work units. An initial study/mitigated negative declaration was prepared for the project, CEQA notices, and response to comments. Key issues included shade/shadow, construction and long-term impacts on adjacent residential uses; compatibility with nearby coastal zone areas; and remediation of existing hazardous materials conditions. The project was approved in 2014.

Grand Park Specific Plan EIR. *City of Ontario.* This project involves the development of residential, school and park land uses on 320 acres of existing agricultural use through a specific plan. A comprehensive EIR was prepared for the project and included evaluation of alternatives of varied densities and an agricultural preservation alternative, which retained approximately one-quarter of the site in agricultural use. Key issues of concern included land use compatibility, air quality, and agricultural impact. The EIR strongly relied on past planning documents/plan previously approved for agricultural preserved land. The project was approved in early 2014.

Pacific Rail Metal Shredding Operation EIR. *City of Colton, Pacific Rail Industries.* Project involves the installation/operation of a metal shredder at an existing scrap metal salvage in the City of Colton. Managed all aspects of contentious project including primary author of EIR, managed technical report preparation, issue resolution, and extensive response to comment efforts, and addressed environmental concerns during seven public meetings.

South San Francisco Bay Shoreline Study Draft EIS/EIR/Feasibility Report. *U.S. Army Corps of Engineers.* First phase of Corps study with the primary objective of determining flood control needs in conjunction with the restoration of tidal marsh land from existing salt ponds, and a secondary objective of providing recreation and public access. Contributing author/editor and assisting with report coordination.

Tentative Tract 16361 (Covington Project) EIR. *City of Redlands.* Project involves the subdivision of 180 acres for development of 88 single family homes, recreation and open space uses in hillside area of the City of Redlands. Managing all aspects of the EIR effort, including a peer review of applicant technical studies. Significant issues in this fairly comprehensive EIR effort include traffic and geotechnical.

Sierra Industrial Project EIR. *City of Fontana.* Project involves the development of a new warehouse in north Fontana. Project involves the development of a new warehouse in north Fontana. A Notice of Preparation/Initial Study was prepared, and effects found not to be significant were screened out of the EIR. Rather the EIR focused on 11 topical areas of potential impact including aesthetics, air quality land use, noise and traffic/access. Based on public comments on the Draft EIR on the subject of traffic and access, the City requested project modifications which were addressed in an Errata to the EIR that was packaged with the response to comments. The City was supported during all facets of the CEQA process, preparing notices, environmental findings, and developing response to comments in conjunction with both Planning, and the City Attorney's office. The project was approved in 2014.

Lime Kiln Lime Kiln Road Bridge Replacement Preliminary Environmental Study (PES). *Mark Thomas and Company, Tuolumne County and Caltrans.* Project involves the demolition of an existing one lane-bridge, realignment of road, and construction of a new two-lane bridge. Environmental concerns include a historic age

bridge, the presence of wetlands, maintaining access during construction, and construction noise during demolition and pile driving. PM, lead editor for the PES to satisfy Caltrans requirements.

El Camino Real Housing Project. *City of Mountain View.* Project involves the development of a 4-story residential building at the site of an existing car wash. Project manager coordinating the preparation of noise, air, traffic, water/wastewater studies and a mitigated negative declaration. The project was approved in 2014.

San Gregornio Crossing. *Shopoff Group and County of Riverside.* Project involves the development of a warehouse project near Calimesa/Cherry Valley. Project manager coordinating the development of a comprehensive EIR, and related air quality and greenhouse gas analysis for this controversial project. The EIR includes a robust alternatives analysis involving the evaluation of build and no-build No-Project alternatives, a residential alternative and a less intense agriculture alternative.

Negative Declaration for Health Care Facility Improvement Program at California Men's Colony, San Luis Obispo. *California Department of Corrections and Rehabilitation (CDCR).* Project involves new construction and modification to existing facilities to accommodate health care improvements. Primary author/editor responsible for preparation of IS/MND.

John Muir Parkway PES. *City of Brentwood and Caltrans.* This local assistance project involves the realignment of an existing roadway in the City of Brentwood. Project Manager/ primary editor on the update of the Preliminary Environmental Study to reflect the current project extent/design and environmental conditions; participated in an office field review with Caltrans leading to the Caltrans issued PES. Additional technical studies and a CE is being prepared for the project.

Negative Declaration for Health Care Facility Improvement Program at WSP, Wasco. *California Department of Corrections and Rehabilitation (CDCR).* Project involves new construction and modification to existing facilities to accommodate health care improvements. Primary author/editor responsible for preparation of IS/MND.

John Wayne Airport Jet Fuel Pipeline Environmental Assessment. *John Wayne Airport, County of Orange, City of Tustin, City of Irvine, Federal Aviation Administration.* Project involves construction of a jet fuel pipeline between an existing fuel line, and the airport, eliminating truck delivery of jet fuel to the airport. Primary author/editor responsible for preparation of the EA to satisfy NEPA requirements.

Montgomery 7 Residence IS-MND. *City of San Jose and Lowney Architecture.* Project involves development of 4 new residential buildings featuring. The location encourages use of multi-modal transit options, being locating near a number of stations, and featuring, bike storage, bike parklet, and limited parking. Also features a small amount of retail, roof top garden, solar panels. Primary author/editor responsible for preparation of the EA; coordination of technical studies.

Los Alamitos Raceway. *City of Cypress.* Project involves the extension of the facility racetrack and addition of thoroughbred racing. Project manager coordinate air, noise and biological analysis, and lead preparation of an IS-MND for the proposed project. The project was approved in 2014.

La Canada Drive, Ina to Calle Concordia, Tucson. Arizona. *Pima County DOT.* Lead environmental planner for this project that consists of widening the existing roadway and providing an all weather roadway. Co-author of the Section 404 Individual Permit application. Managed the preparation of biology, cultural and native plant protection documents. HDR team received Arizona American Council of Engineering Companies 2012 Grand Award of Engineering Excellence. The project was approved in 2012.

La Canada Drive, River Road to Ina Road. *Pima County Department of Transportation.* This FHWA funded project involves the widening of La Canada Drive through a residential area and crosses a number of washes under Army Corps jurisdiction. Issues include Section 404 compliance, noise associated with increased traffic, and native plant protection. Primary author of County environmental assessment, categorical exclusion to comply with FHWA requirements, and CWA Section 404 Preconstruction Notification application. Coordinated with the federal agencies involved, and managing the preparation of biology, cultural and native plant protection documents. The project was approved in 2012.

South Mountain Environmental Impact Assessment. *ADOT.* Project involves evaluation of a new freeway or parkway creating a southwest loop segment connecting I-10 in two locations. Issues include impacts to the Gila River Indian Community (Community), including traditional cultural properties. The project has a strong public interest. Contributing author/editor to draft EIS sections and technical reports.

ADOT Environmental On-Call Contract, Phoenix, Arizona. *ADOT.* Senior environmental planner for a variety of environmental investigations for highway construction and maintenance projects statewide on an on-call basis. The scope of work includes all phases of preparing and reviewing environmental documents including categorical exclusions, environmental assessments and field reviews. Documentation has been prepared to comply with ADOT, and NEPA/FHWA standards.

Maricopa-Casa Grande Highway Widening. *City of Maricopa.* Project involves the widening of one mile of roadway in east Maricopa. Project manager coordinating preparation of FHWA Categorical Exclusion and supporting technical documents—biological review, PISA, and cultural resources assessment.

California High Speed Rail Peer Review. *City of Chowchilla.* The California High Speed Rail Authority is proceeding with design and evaluation of a rail line through the Central Valley including routes through the City of Chowchilla. Conducting a peer review and analysis of project information in the interests of the City of Chowchilla.

Beyer Ranch Winery and Residential Development IS-MND. *Developer and Alameda County.* Project involves the subdivision of 240 acres into 20 acre lots, 6 lots featuring developed winery and 6 lots featuring a residential estate (a total of 6 homes). A large proportion of the property would be preserved in agriculture. Preparing an IS-MND for the proposed project.

Fultonia West EA. *HUD and City of Fresno.* Project involves the development of multifamily housing. A large proportion of the property would be preserved in agriculture/community gardens. Prepared an environmental assessment to satisfy HUD NEPA requirements. The project was approved in 2014.

Interstate 10, Ina Road to Ruthrauff Road Environmental Assessment. *Arizona Department of Transportation (ADOT).* Project involves reconstruction and freeway widening, and reconstruction of three traffic interchanges. Issues include presence of numerous cultural and hazardous material sites, potential impacts to businesses, and increased noise. Primary author/editor of Draft and Final EA, and Section 4(f) de minimis evaluation. Environmental lead/coordinator for technical reports: biological assessment for the lesser-long nosed bat, a cultural resources assessment, historical architecture evaluation, traffic noise study, and Phase I ESA. Conducted agency and public scoping; facilitated agency scoping meeting; presented results of Draft EA in a public hearing. The project was approved in 2012.

Valencia Road, Wade Road to Mark Road. *Pima County Department of Transportation.* This FHWA and RTA funded project involves road widening, median installation and drainage improvements. Environmental documentation being completed to satisfy County, FHWA and ADOT requirements, including a County

environmental assessment, a categorical exclusion, and a biological evaluation focusing on the Pima pineapple cactus. Providing environmental team oversight and quality control for all deliverables; contributing author of County environmental assessment; and coordinating with the federal and state agencies involved. The project was approved in 2012.

Interstate 10, Ina Road to Ruthrauff Road Geotech. *ADOT.* Project involves phased environmental clearances for geotechnical investigation activities. Issues include presence of numerous cultural and hazardous material sites. Project manager coordinating preparation of cultural report, biological review, hazardous materials assessment and cultural monitoring plan. Preparing environmental clearance memorandums for three phases of work.

Lone Mountain EA.*Entellus Development, City of Peoria and the Bureau of Land Management (BLM).* Entellus planned a roadway through BLM patent lands managed by the City of Peoria under the Recreation and Public Purposes Act. Primary author of EA evaluating the effects of the road project on the recreation lands consistent with BLM requirements.

Crosscut Canal Transportation Enhancement Project. *City of Scottsdale.* This project completes a segment of the trail along the 11-mile Papago Trail system linking the cities of Temple, Scottsdale and Phoenix and largely follows the Crosscut canal. The project incorporated the trail, shade, benches and lighting. Completed categorical exclusion providing NEPA compliance.

Kolb Road Extension, Arizona. *City of Tucson.* Project involves the extension of Kolb Road across Udall Park, a closed landfill, and the Pantano River. Contributing author to EA; preparing CWA Section 404 PCN.

La Cholla Boulevard, River Road to Ruthrauf Road. *Pima County Department of Transportation.* Project involves the widening of La Cholla Boulevard, including the widening of the bridge over the Rillito River. Issues include noise affects to residences, hazardous materials conditions associated with past landfills and service stations, access to recreation areas, and Section 404 compliance (NWP with a pre-construction notification). Primary author of County environmental assessment. Manage the preparation of biology and noise studies and advising client on the implementation of environmental mitigation. The project was approved in 2011.

I-19 and Continental Road Transportation Enhancement Project. *ADOT and Pima County.* This project provided sidewalks and continuous bike lanes for a portion of Continental Road in the community of Green Valley. Completed categorical exclusion providing NEPA compliance to improve pedestrian and bicycle facilities.

Martinez Bridge Scour Protection. *ADOT.* Project involves the installation of improvements to protect a bridge in Yavapai County from erosion and scour. Issues include affects to Army Corps regulated waters, avoidance of cultural resources, and presence of bats and swallows. Preparing a categorical exclusion and coordinating the preparation of a biological review and cultural consultation.

S.R. 82 Bridge Scour Protection. *ADOT.* Project involves the installation of improvements to protect a bridge in Cochise County from erosion and scour. Issues include affects to cultural resources, Army Corps regulated waters, and sensitive species. Conducted and documented agency and public scoping work and conducted initial research for CE.

Twin Peaks/I-10 Traffic Interchange. *Town of Marana, ADOT.* Project involves the construction of a new traffic interchange and east-west roadway of Twin Peaks Road, including a bridge over the Santa Cruz River. Issues include impacts to known cultural resources and Army Corps regulated waters. Assisted in the update of the environmental assessment addendum for the project. The project was approved in 2011.

I-19 San Xavier Road to Ajo Way EA. *ADOT.* Project involves improvements to Interstate 19 including freeway widening and new interchanges in southern Tucson, and includes direct impacts to residential areas. Issues include cultural resources, Section 4(f) of the Transportation Act of 1966 (as amended), socioeconomic and Title IV. Prepared a preliminary draft of an environmental assessment, coordinating the preparation of air quality, biology, cultural, hazards and noise reports, and conducted agency scoping for project. Facilitating meetings with local agencies to address Section 4(f) concerns.

San Luis Port of Entry II. *Arizona Department of Transportation (ADOT).* Project involves the construction of ADOT facilities for a new commercial port of entry in San Luis, Yuma County. Prepared a categorical exclusion, prepared a geotechnical clearance, conducted public and agency scoping, and coordinated preparation of a biological mitigation plan. The primary environmental issue is the protection of the flat-tailed horned lizard during project construction activities.

Canoa Ranch /I-19 Traffic Interchange CE. *Pima County Department of Transportation.* Project involves the improvement of the Canoa Ranch traffic interchange, a federal change of access to provide a connection/access to recent residential development, and the use of a roundabout. Primary author of a categorical exclusion, prepared a pre-initial site assessment (haz mat), coordinated agency scoping, and participated in a public meeting for the project.

Douglas Port of Entry CE. *ADOT.* This project involves efficiency improvement to the Douglas Port Entry in southeastern Arizona. Preparing a categorical exclusion and geotechnical clearance, conducting public and agency scoping for the project.

Maricopa-Casa Grande Highway Environmental Overview. *City of Maricopa and PBS&J.* This study focuses on identifying improvement and potential alignments for a segment of the Maricopa-Casa Grand Highway. Coordinated preparation and primary author of environmental overview and assisted with public meeting including preparation of meeting materials.

South Fourth Avenue CE. *City of Tucson.* Project involves streetscape improvements to a residential area, and is funded through transportation enhancement funds administered by ADOT. Coordination with the City and assisting with the preparation of response letters to public and agency comments.

Valencia Road Intelligent Transportation System Improvements. *City of Tucson.* Project involves the installation of transportation management equipment along a segment of Valencia Road. Initiated a categorical exclusion, conducted public and agency scoping, coordinated preparation of a pre-initial site assessment, and biological evaluation.

U.S. 60/Grand Ave: 99th to 83rd Ave Environmental. *ADOT.* Project involves the widening of US 60 between 99th Avenue and 83rd Avenue in the City of Peoria. Preparing a categorical exclusion and a geotechnical clearance, coordinating the preparation of technical investigations (noise, air, biological, cultural, jurisdictional delineation, pre-initial site assessment), and conducting public and agency scoping.

DARPA Grand Challenge EA. *Defense Advanced Research Projects Agency, Bureau of Land Management.* Defense project involving the field test of robotic vehicle technology on BLM lands. Primary author of the EA on behalf of the DARPA in cooperation with the BLM. Primary issues related to the federally threatened desert tortoise and safety. Also, assisted with environmental oversight and implementation of environmental measures.

Tucson Mountain Park Recreation and Public Purposes Act EA. *Pima County Natural Resources, Parks and Recreation, and the Bureau of Land Management.* The County is applying for the lease of BLM lands under the Recreation and Public Purposes Act. Coordinated preparation of an environmental assessment and supporting technical studies in support of the County's application.

Iron Horse Hills Residential Project Environmental Impact Report. *City of Colton.* Project involves a hillside residential development surrounded by existing residential land uses. The project was designed in conjunction with neighborhood input. Primary author of EIR addressing air quality, hazards and biological resources; and provided public workshop and hearing support including a project field trip.

Milliken Avenue Extension Project EIR. *Chaffey Joint Union High School District.* Project involves the expansion of two master planned roadways, as mitigation by the District for development of a high school. Drafted Final EIR including responses to comments, environmental findings and statement of overriding considerations. Significant issues were related to development on sensitive habitats and potential presence of sensitive and endangered species.

Pepper Street Specific Plan. *City of Rialto.* Plan proposes residential, commercial and open space uses, and the extension of Pepper Street in north Rialto. Coordinated the development of the specific plan and technical studies for constraints analysis and in support of anticipated EIR.

EIR for Home Depot Retail Center. *Town of Yucca Valley.* Project proposes a retail center in the Town of Yucca Valley. Project manager coordinating preparation of comprehensive EIR, cultural investigations and biological investigations including a survey and salvage plan for Joshua tree. Issues requiring resolution include air quality.

MND for Chaffey High School #9. *Chaffey Joint Union High School District.* Project involves the development of a high school in north Fontana. Managed all aspects of the CEQA compliance including document and technical report preparation, issue resolution, response to comments, public noticing and public hearing.

EIR for Fontana Annexation No. 163 and TTM 17020. *City of Fontana, Centex & Forecast Homes.* Project involves the annexation of 310 acres within the City's Sphere of Influence and a 302 unit subdivision at the northern boundary of Fontana. Primary responsibility for preparation of a comprehensive EIR evaluating 16 subject issues in a two-tiered document: the Annexation at program level; the tentative tract at project level.

MND for Bloomington High School Improvements. *Colton Unified School District.* Project proposes the improvement and replacement of existing facilities. Project manager, coordinating all aspects of the CEQA compliance including document preparation, response to comments, public noticing and public hearing.

SeaWest Wind Turbine Investigations and EIS. *AES-SeaWest.* Project involves a wind turbine field on Daggett Ridge near Barstow on BLM land. Coordinating preliminary environmental investigation (biological, cultural, and visual) leading to the preparation of an EIS.

Sepulveda Basin Sport Park EA/MND. *City of Los Angeles Parks and Recreation.* The project involves the development of recreation facilities in the Sepulveda Basin for the City, with the U.S. Army Corps of Engineers as the lead agency under NEPA. The primary issue is impacts riparian wildlife species from lighted ball fields. Coordinated initial studies before the project was put on hold.

Fontana General Plan Update. *City of Fontana.* Assisted with coordination of comprehensive general update. Authored Initial Study for the NOP. Assisted the program managers with the General Plan and EIR effort. Responsible for tracking the status of all work on the project.

West Wilshire Senior Center Initial Study. *City of Los Angeles Parks and Recreation.* Project involves the development of a Senior Center for the City at an existing Department facility. Prepared the Initial Study for this project.

East Avenue Residential Project. *Chaffey Joint Union High School District.* Assisting District in developing a residential land use plan on excess District property with consideration of environmental constraints. Managed due diligence work for sensitive species (focused surveys), geotechnical and noise constraints.

Public Outreach Projects

San Bernardino County Stormwater Program. *County of San Bernardino and 13 Cities.* Project implements the education and outreach component of the regional MS4 permit. Implemented and managed all aspects of the outreach program including advertising (radio, cable public service announcements, newspaper, bus, stadium), booths at community events, elementary and high school programs, point of sale displays (hardware, automotive), development of all print media (coloring book, technical fact sheets, brochures), and contests. Represented the Program on the statewide education committee.

Grijalva Park Improvements Public Involvement. *City of Tucson, Tucson Unified School District.* Project involves the improvement of a small park in the Midvale Park area of Tucson. Responsible for coordination of public involvement to obtain public input on the improvements to be implemented.

S.R. 195; I-8 to US 95 Public Involvement. *ADOT.* This project involves the preparation of an engineering study and environmental evaluation of potential alignments to extend approved SR-195 north to US 95 in Yuma. Responsible for the development and implementation of a public involvement plan including the coordination and facilitation of pubic and agency meetings, development of meeting materials, project newsletters, and website content.

Cordes Junction Traffic Interchange Public Outreach, Environmental. *ADOT.* This project involves the improvement of a high volume traffic interchange with the use of roundabouts. Responsible for the implementation of the public involvement plan and environmental compliance including an anticipated environmental assessment reevaluation. Drafted content and coordinated the preparation of meeting notices, materials, coordinated with project team, prepared summary reports and coordinated with agencies. Facilitating meetings with the County and Bureau of Land Management to address Section 4(f) issues.

S.R. 195 Construction Public Relations. *ADOT.* This project involves the construction of a segment of new State Route 195n in Yuma. Responsible for the development of a project action plan, web site content, and coordination with ADOT representatives regarding public relations support needs.

Paralegal Experience

Coachella Canal Lining Project. *Coachella Valley Water District.* The project EIR/EIS analyzed alternatives for lining and realignment of existing canals that deliver water from the Colorado for water conservation. Drafted environmental findings and ROD, and provided general oversight regarding CEQA compliance (noticing).

Supplemental Water Supply Management Program-EIR/EIS. Joint Project with Bureau of Reclamation, East Bay Municipal Utility District. The EIR/EIS analyzed three different options under a proposed amended water contract with the Bureau. Oversaw all aspects of administrative record preparation and assisted with general CEQA defense.

Green River Ranch Specific Plan. *City of Corona.* The Plan proposed residential and commercial land uses at the western gateway to the City. The residential component of the project brought out major public opposition due the existing congested conditions on I-91. Provided oversight to consultants and city staff to ensure CEQA compliance. Drafted environmental findings and responses to comments and notices.

Los Alamos Hills High School EIR. *City of Murrietta.* The project involved the development of a new high school under three different alternatives, including expansion of an existing school facility to accommodate a high school. Drafted separate environmental findings for both the High School District, and the City, a responsible agency.

Corona Recycled Water Master Plan. *City of Corona.* The Master Plan EIR analyzed the impacts related to implementation of this Master Plan. Impacts were primarily related to infrastructure improvements. Drafted environmental findings and provided general oversight regarding CEQA compliance (noticing).

Eagle Ridge at Lake Arrowhead Development Project. *Roy Forest Products.* This project proposed residential development on a forest property surrounded by existing residential land use. Drafted environmental findings prepared the administrative record for this controversial project.

Previous Work History

FirstCarbon Solutions, San Bernardino, California

Senior Project Manager (April 2013 – November 2015)

Responsibilities:

- Project manager responsible for the preparation of environmental compliance documents to satisfy, NEPA, CEQA, and other federal, state or local requirements. Serve as principal author/editor of primary environmental document. Coordinate with agency and client counterparts. Responsible for client management, supervision of environmental support staff, coordination of technical studies, schedule, budget and problem solving.
- Oversee and train junior and intermediate staff in the preparation of environmental documentation.
- Support client development and pursuit efforts including drafting of proposals and participation in interviews and presentations.

HDR Engineering Inc., Resources Section, Tucson, Arizona

Senior Environmental Planner (January 2008 – April 2013)

Responsibilities:

- Lead environmental task manager and/or project manager for the preparation of environmental compliance documents to satisfy, NEPA, CEQA, CWA 404/401, and other federal, state or local requirements with an emphasis on transportation projects. Serve as principal author/editor of primary environmental document. Coordinate with agency and client counterparts. Contribute to client management, coordination of technical studies, schedule, budget and problem solving.
- Support business development pursuit efforts including drafting of proposal and participation in interviews and presentations.

- Supervise and train environmental staff in the preparation of environmental documents.
- Represent HDR at various events and association activities.
- Logan Simpson Design Inc., Environmental Planning, Tucson, Arizona
- Senior Environmental Planner (Planner III); Public Involvement Specialist (April 2006 – January 2008)
- Responsibilities:
- Manage work related to the preparation of environmental documentation in support of NEPA and other environmental compliance processes including primary author/editor of environmental documents, client management, and coordination of technical studies, schedule, budget oversight and problem solving.
- Manage and implement public involvement projects including facilitation of public meetings, coordination of notices, meeting materials, and tracking of comments and responses.
- Assist in the management of environmental and public involvement on-call contracts with ADOT and the City of Tucson including the preparation of scope and fees, regular status reports and client management.
- Support proposal efforts including drafting of budget and scope of work, interviews and presentations.
- Supervise and train environmental staff in the preparation of environmental documents.

Michael Brandman Associates, Environmental Services, San Bernardino, California

Project Manager (May 2002 – April 2006)

Responsibilities:

- Manage all work related to the preparation of environmental documentation in support of CEQA / NEPA compliance including noticing, scheduling of work, reproduction and budget management.
- Primary author/editor of CEQA/NEPA document.
- Oversee preparation of technical reports.
- Represent MBA at various events and association activities (AEP, APA, BIA, etc.)
- Lead proposal efforts including drafting of budget and scope of work, interviews and presentations.
- Supervise and train environmental staff in the preparation of environmental documents and notices.

Best Best & Krieger LLP, Natural Resources and Public Law Department, Riverside, California

Paralegal (June 1999 – May 2002)

Responsibilities:

- Draft environmental findings, statements of overriding consideration and responses to comments.

- Coordinate the annual review and production of Local CEQA Guidelines for clients.
- Manage complex water adjudication litigation involving nearly 800 parties.
- Regularly review CEQA case law and statutes for changes in CEQA.
- Prepare administrative record for projects challenged by a lawsuit.
- Prepare and file environmental notices for clients.

Community Activities

National Alliance on Mental Illness, Teacher, Family to Family Program

Luekemia and Lyphoma Society, Team in Training - training support

Honors and Awards

HDR Pathfinders Peer Awards in Leadership, Community Service, and Team

Inland Empire Association of Environmental Professionals for Outstanding Environmental Analysis, City of Redlands Sports Park Master Plan EIR/EA

Rod Parcel Memorial Scholarship for Excellence in Geological Sciences, 1995

Presentations

California Environmental Quality Act Update-What Planners Need to Know, Presenter, California Chapter of the American Planning Association, 2006 Annual Conference in Yosemite, California

Air Quality – What Everyone Should Know, Moderator, California Chapter of the American Planning Association, 2006 Annual Conference in Yosemite, California

Paralegal Related Careers, Presenter, California Association of Paralegal Associations, 2004 Annual Conference, Riverside, California

Computer Skills

Adobe Acrobat Pro9
Adobe Dreamweaver
ArcCatalog
ArcGIS
Google Chrome
Google Earth Professional
Lotus Notes
Microsoft Access
Microsoft Excel
Microsoft Front Page
Microsoft Office Suite
Microsoft Outlook

Microsoft Power Point
Microsoft Project
Microsoft Publisher
Microsoft Word
Roxio Creator
WordPerfect

Kari M. Cano

Project Manager

Years with Michael Baker: 11
Years with Other Firms: 0

Degrees

M.A., 2005, Political Science, California State University at Fullerton

B.A., 2002, Political Science, California State University at Fullerton

General Qualifications

As an Environmental Planner at Michael Baker, Ms. Cano prepares environmental and planning studies for public and private sector clients, under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Ms. Cano comes to the field of planning/environmental planning from a diverse background in urban development and political science. Utilizing her background and understanding of state and local policies, Ms. Cano provides CEQA compliance review and environmental documentation, in addition to research, analysis, and writing. Ms. Cano has worked on projects in the Counties of Los Angeles, Ventura, San Diego, and San Bernardino.

Experience

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Environmental Planner. Responsible for environmental documentation. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Concentrated Photovoltaic Solar Sites, Various Locations - SW US, California. *Swinerton Builders.* Environmental Planner. Responsible for environmental documentation. Michael Baker supported utility-scale energy developers with environmental permitting and engineering services. Due to the timing constraints of the developer, Michael Baker successfully completed desktop environmental studies and site due-diligence within a 30-day deadline. Michael Baker continued to support the developer through the environmental process, on-site design engineering, generation tie-line alignment studies, and interconnect applications for all of the project sites. Michael Baker provided technical analysis using a sophisticated stormwater modeling program (FLO2D) to determine the impacts of the solar sites on flood patterns and stormwater quality. Analyses were conducted for pre-project, with project conditions for storm events ranging in length from two to 100 years.

Don Wallace Multiuse Trail, Calabasas, California. *LA County Parks & Recreation.* Environmental Planner. Responsible for environmental documentation. Michael Baker is providing environmental and engineering services for a 1,800-foot multiuse trail along Las Virgenes Creek. Michael Baker's services include geotechnical investigation, structural analysis, hazardous materials investigation, hydrology and hydraulic analysis, preparation of a survey and property easement report, preparation of construction documents, permitting, and agency coordination.

ID/IQ Planning and Civil Engineering for Civil Works Projects, W912PL-10-R-0033, USACE, Los Angeles District, California. *U.S. Army Corps of Engineers, Los Angeles District.* Environmental Planner. Responsible for environmental documentation.

Monterey Downs and Horse Park and Central Coast Veterans Cemetery Specific Plan EIR, Seaside, California. *City of Seaside.* Environmental Planner. Responsible for environmental documentation. Michael Baker served as the Project Facilitator for the Monterey County Housing and Redevelopment Office by providing strategic, technical, planning, and environmental support services for coordination and processing of applications and approvals associated with the proposed Monterey Downs and Horse Park and Central California Veteran's Cemetery project. Following completion of the Phase I Due Diligence and ENA negotiations, Michael Baker prepared an Environmental Impact Report (EIR). Michael Baker developed a draft project description, a Notice of Preparation (NOP), and an Administrative Draft EIR (ADEIR) for review. The EIR analyzed aesthetics and visual resources; air quality; construction-related and long-term emissions; biological resources, including forestry resources; cultural resources; geology and soils; greenhouse gases; hazards and hazardous materials; hydrology and water quality; land use and planning; construction-related and operational noise; population and housing; public service and recreation; utilities and service systems; and transportation and circulation. Following client and public review of the ADEIR, Michael Baker produced a Final EIR that included responses to comments received from agencies and members of the public.

Rancho San Gorgonio SP Contract No. RSFA1030.*Rancho San Gorgonio, LLC.* Environmental Planner. Responsible for environmental documentation.

Fagan Canyon Planning Services, Santa Paula, California. *City of Santa Paula.* Planner. Ms. Cano was a contributing planner for the preparation of the Final EIR and the Addendum to the EIR for the Fagan Canyon Specific Plan. The Specific Plan promotes traditional neighborhood design through the development of six individual neighborhoods, with housing choices ranging from single-family residences to town homes, to live-work units, to apartments. In addition, the plan also proposes two school sites, a town center, and several neighborhood and pocket parks. Environmental issues include water quality and drainage, traffic, geotechnical constraints, grading, habitat restoration and preservation, and endangered species. Michael Baker provided overall program management for the proposed development of up to 2,500 single family and multi-family units, up to 25,000 square feet of neighborhood commercial, schools, parks, and open space within a box canyon just north of the City of Santa Paula.

Downtown Sierra Madre Specific Plan and Program EIR, Sierra Madre, California. *Sierra Madre, City of.* Planner. Authored the project description for the document. Critical environmental issues evaluated in the EIR include traffic, noise, land use, and air quality. Michael Baker was selected by the City of Sierra Madre to develop a plan that increases housing opportunities through mixed-use areas in the commercial district and creates a live-work environment that complements the existing village atmosphere and public transit. The plan included architectural design guidelines, commercial development standards, an implementation program, and program environmental impact report. This project places a high priority on community involvement to ensure that the ultimate vision of the Downtown Specific Plan reflects the ideals, visions, and values of the community. During its first year, the project was recognized by the state through the 2005 CCAPA Leadership and Service Award and then through the 2006 OCAPA Award for Educational Series for an eight-week educational series.

Seawater Desalination Project at Encina EIR, Carlsbad, California. *San Diego County Water Authority.* Planner. Contributing planner and author of the filter backwash solids disposal section of the draft EIR. Michael Baker prepared an environmental impact report (EIR) for a 50-million-gallon-per-day (MGD) seawater desalination facility to be sited adjacent to the Encina Power Station in Carlsbad, adjacent to the Pacific Ocean and highly sensitive Agua Hedionda Lagoon. The project included seawater intake pretreatment facilities, a seawater desalination plant using reverse osmosis (RO) technology, post-treatment facilities, product water storage, electrical substation, chemical storage, on- and off-site booster pumps, approximately 10 miles of 48- to 64-inch-

diameter product water transmission pipelines, and modifications to the existing Tri-Agency Pipeline and Second Aqueduct. Michael Baker performed extensive modeling and analysis of ocean water quality; marine, coastal, and terrestrial biology; aesthetics; geology; utilities; land use; and hazardous materials.

The Village at Loch Lomond Marina, San Rafael, California. *San Rafael, City of.* Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for The Village at Loch Lomond Marina. The project consists of the private redevelopment of the Loch Lomond Marina. Project features include removal of several existing commercial uses; construction of 84 residential units and 21,785 square feet of neighborhood commercial and office space; development of six acres of improved recreational uses; retention of the existing 517-slip marina, neighborhood commercial, marine-related, and open space uses; and, conservation and enhancement of existing tidal and seasonal wetlands. Critical environmental issues included aesthetics, biological resources, hazards and hazardous materials, water quality, and traffic.

The Village at Redlands EIR, Redlands, California. *Redlands, City of.* Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report (EIR) for redevelopment of the Redlands Mall to provide approximately 226 dwelling units and approximately 191,650 square feet of retail land uses. The proposed activities include the demolition of the existing Redlands Mall, which includes a drug store and a bank, and partial demolition of a department store. Critical environmental issues include aesthetics, traffic, noise, and land use. The proposed Village Town Center project includes an extension of State Street westerly through the project site prior to transitioning northerly to align with 3rd Street. Michael Baker performed a traffic impact analysis to support the EIR and coordinated with regional staff to obtain and post-process East Valley Traffic Model runs for the long-range traffic analysis. The study identified project traffic impacts and mitigation measures to reduce traffic impacts to a level considered less than significant in accordance with California Environmental Quality Act (CEQA) requirements.

Interstate Route I-880 Safety Improvements Project, Multiple, California. *AECOM (formerly Watershed Concepts).* Environmental Planner. Responsible for environmental documentation.

Fagan Canyon Specific Plan EIR, Santa Paula, California. *Santa Paula Planning Department, City of.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for the Fagan Canyon Specific Plan. The proposed plan included 2,500 residential dwelling units within a 2,176-acre canyon north of the City of Santa Paula. The Specific Plan promoted traditional neighborhood design through the development of six individual neighborhoods, with housing choices ranging from single-family residences to town homes, to live-work units, to apartments. The plan also proposed two school sites, a town center, and several neighborhood and pocket parks. Environmental issues included water quality and drainage, traffic, geotechnical constraints, grading issues, habitat restoration and preservation, and endangered species.

Interstate 10/Jefferson Street Interchange Improvements, Indio, California. *Riverside Co. Transportation Dept.* Environmental Planner. Responsible for environmental documentation. Michael Baker performed environmental and engineering services for the preparation of the project report (PR), modified access report (MAR), and plans, specifications, and estimate for I-10/Jefferson Street interchange improvements. This project will balance several complex geometric constraints to eliminate the discontinuity of the arterial street through movements within the interchange. The interchange is included in the I-10 Corridor Plan, prepared by the Coachella Valley Association of Governments (CVAG), which requires specific architectural and landscape treatments to the improved or new interchanges located within the plan. The modifications included replacement and relocation of the Jefferson Street/I-10 overcrossing, additional loop on-ramps, and realignment of Varner Road and Jefferson

Street. Michael Baker was responsible for alternatives analysis and design, environmental investigations, roadway design, traffic studies, drainage studies, and structure advance-planning studies. Working closely with Caltrans and the City of Indio, Michael Baker provided a wide range of environmental consulting services. Michael Baker prepared the following studies in support of a joint initial study-environmental assessment (IS/EA): Visual impact analysis (VIA); noise impact report, per TNAP; initial site assessment; natural environment study; report-biological assessment, HPSR/ASR/AER; air quality report and CO hotspot analysis; Section 7 consultation; and Section 106 compliance. In addition, Michael Baker developed the final plans, specifications, and estimates. Preparation of construction plans included roadway layouts and profiles, bridge plans, retaining walls, grading, drainage, signing and striping, traffic signal, lighting, and staged construction.

Deep Creek EIR, Apple Valley, California. Assistant Project Manager. Assisted in the preparation of the Deep Creek EIR. Michael Baker was hired by the County of San Bernardino to prepare a court-ordered environmental impact report (EIR) for the Deep Creek project, which would allow the development of 202 residential lots on approximately 249 acres in the unincorporated area of the county. The EIR was required after the Deep Creek Agricultural Association challenged the County of San Bernardino for not adequately studying the project's impacts. The Court of Appeal of the State of California, Fourth Appellate District determined that the EIR must assess impacts to biological resources and traffic.

Stonehouse Homes, Sierra Madre, California. *Sierra Madre, City of.* Project Manager. Responsible for environmental documentation.

Hacienda at Fairview Valley EIR, San Bernardino County, California. *County of San Bernardino.* Assistant Project Manager. Assisted in the EIR preparation. Michael Baker prepared an environmental impact report for the Hacienda at Fairview Valley project, located in unincorporated San Bernardino County, near Apple Valley. The 1,557-acre site is located between the Granite and Fairview mountain ranges and is surrounded by vacant land and several larger-lot single-family residences. In addition, portions of the project site abut BLM land. The project includes the development of 3,114 residential units, 15 acres of neighborhood commercial uses and a public safety complex, and 336 acres of open space. The majority of the residential units would be deed-restricted active-adult units. Major environmental issues include aesthetics, biological resources, seismicity, traffic, public services, public utilities, and emergency access.

Butterfield Specific Plan and EIR, Banning, California. *Pardee Homes.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for the Butterfield Specific Plan, a 1,543-acre development that includes golf course, school sites, open space, commercial uses, and up to 5,387 residential units. Critical environmental issues included aesthetics, transportation and circulation, global warming, hydrology and water quality, and biological resources.

West Valley Logistics Center Specific Plan EIR, Fontana, California. *Fontana, City of.* Project Manager. Responsible for project management. Michael Baker prepared an environmental impact report (EIR) for the West Valley Logistics Center Specific Plan, which involves approximately 145 net acres of industrial use and approximately 153 acres of open space in the southeastern portion of the City of Fontana, within the County of San Bernardino. Industrial buildings are anticipated to range in size from approximately 100,000 square feet to more than 1,000,000 square feet. Infrastructure improvements are also proposed, including street, water, sewer, and storm drainage upgrades. Major environmental issues addressed in the EIR include air quality, noise, traffic and circulation, aesthetics, light and glare, hazards and hazardous materials, biological resources, geological resources, soils and seismicity, hydrology and water quality, population and housing, and public services and utilities.

Riverside North Aquifer and Storage Recovery Project, Riverside and San Bernardino C, California. *City of Riverside.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report and provided topographic mapping and conceptual engineering support for the Riverside Groundwater Aquifer Storage and Recovery Project, to provide groundwater recharge facilities along the Santa Ana River. The project proposes the construction of an inflatable dam across the Santa Ana River, water lines, and groundwater recharge basins for capturing and recharging stormwater and imported water on the City of Riverside's Flume Well Tract.

San Bernardino International Airport TIGER Grant, Highland, California. *Tom Dodson & Associates.* Environmental Planner. Responsible for environmental documentation.

Soil Safe Colton Property, California. *Soil Safe of California, Inc.* Planner. Responsible for environmental documentation. Michael Baker performed engineering and grading design services and an EIR and accompanying technical studies for the reclamation of approximately 29 acres of land currently located within the 100-year floodplain of the Santa Ana River. To raise the elevation of the project site and provide 100-year flood protection to the property and surrounding areas, the project would import approximately 500,000 cubic yards of fill material and place it as soil cement on site until the desired grade is achieved. Issues included flood protection, hydrology and water quality, jurisdictional permitting and processing, and engineering design to accommodate future development.

USS Iowa Project - Phase 1, Los Angeles, California. *Pacific Battleship Center.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for the U.S.S. Iowa Project for the Pacific Battleship Center, a non-profit organization, in the Port of Los Angeles. The historic battleship was towed from San Francisco Bay, where it has remained in storage by the U.S. Navy, to the Port of Los Angeles. The battleship will be permanently moored at Berth 87 and open to the public as a tourist and educational attraction. Temporary structures will be placed at the berth for offices and restroom facilities. The second phase of the project includes construction of a permanent landside Visitors Center.

Development Agreement Program / Ellis Specific Plan EIR, Tracy, California. *City of Tracy.* Environmental Planner. Responsible for environmental documentation. Michael Baker was responsible for the preparation of a program and project level EIR for the Development Agreement Program (DAP) and 320+-acre Ellis Specific Plan, a transit-oriented, mixed-use project within the City of Tracy's Sphere of Influence. The Ellis Specific Plan provides the general vision, layout and design of a proposed mix of residential, commercial, office/professional and recreational/open space uses (including a 12-acre Swim Center within a 20-acre Community Park) with the focal point of community activities centered around the village center.

RBF-74498 11/28/12.*Eastern Municipal Water Dist.* Environmental Planner. Responsible for environmental documentation.

Las Montanas Multi-Use Project Master Plan and EIR, Indio, California. *M-TO Management, LLC.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided entitlement services for a 92-acre multi-use project in Indio, California. The project included high density residential, commercial, retail, and office space uses. Michael Baker prepared a project master plan based on the approved Gateway Specific Plan, including such documents as a water supply assessment, negotiations with the Airport Land Use Committee, water and sewer master plans, drainage studies, and grading analysis.

Saratoga Safety Element Update. *Saratoga, City of.* Environmental Planner. Responsible for environmental documentation.

Upper Narrows Pipeline Replacement, Victorville, California. *Tom Dodson & Associates.* Environmental Planner. Responsible for environmental documentation. Michael Baker assisted in developing the project description and purpose and need and identifying the necessary environmental technical studies for a project to replace pipelines underneath the Mojave River that were damaged during the winter storm event of 2010.

RBF-Tracy-PO S009692. *City of Tracy.* Environmental Planner. Responsible for environmental documentation.

Hillwood Redlands Dot. Com Site. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation.

THIRD AVE STORM WATER. *Tom Dodson & Associates.* Project Manager. Responsible for environmental documentation.

ATP-Wasco Sfty Element Update. *Wasco, City of.* Project Manager. Responsible for environmental documentation.

Wasco Safety Element Update. *Wasco, City of.* Environmental Planner. Responsible for environmental documentation.

Wine Country Environmental Impact Report, Riverside County, California. *Riverside County - TLMA.* Environmental Planner. Responsible for the preparation of various Environmental Impact Report sections. Michael Baker was retained by the County of Riverside to prepare a Program-level Environmental Impact Report (EIR) for The Wine Country Community Plan located in the Southern California Temecula Valley. The Project area covers approximately 18,990-acres of land and this region encompasses one of the most important agricultural lands in Riverside County. Winery, Equestrian, and Residential Districts have been established for the Plan Area. The Project also included a General Plan Amendment and Zoning Ordinance Amendment. The Project involved extensive public and stakeholder outreach efforts as surveys were conducted and outreach forums included the Ad Hoc Advisory Committee Meetings, Town Hall Meetings, Planning Commission workshops and Planning Commission and Board of Supervisors public hearings. The EIR was made available for public review and comment for 60 days and the Final EIR is expected to be presented to the Board of Supervisors in the winter of 2013 for certification.

Redlands Traffic Assumptions Memo. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation.

Podva Residential Development Environmental Impact Report. *Town of Danville.* Environmental Planner. Responsible for environmental documentation.

City of Delano Health and Sustainability Elements Project. *Raimi & Associates Inc.* Environmental Planner. Responsible for environmental documentation.

Hacienda EIR. *County of San Bernardino.* Project Manager. Responsible for overall project management, including budget, schedule, and client interaction. Also responsible for oversight and final review of client documents; and for writing a large portion of the Environmental Impact Report.

Highland Park IS/MND, Highland, California. *Jurupa Valley, City of.* Project Manager. Responsible for overall project management, including budget, schedule, and client interaction. Also responsible for oversight and final review of client documents.

Local Hazard Mitigation Plan Update, Duarte, California. *City of Duarte.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the city's local hazard mitigation plan (LHMP) update. Michael Baker's project team facilitated the hazard mitigation planning process, including preparation of the updated document, coordination of hazard mitigation plan team (HMPT) meetings, assistance with plan outreach and public hearings, and processing and coordination with Cal OES and FEMA Region IX as part of the approval process.

Temecula Creek Inn Specific Plan Environmental Impact Report, Temecula, California. *City of Temecula.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided professional services to prepare an environmental impact report for the Temecula Creek Inn Specific Plan. The plan proposes to expand Temecula Creek Inn into a master-planned 18-hole golf course resort community. The development is on 305 acres, and the Specific Plan proposes five planning areas. The Specific Plan will require a Specific Plan for the Temecula Creek Inn, a General Plan Amendment for the Land Use and Circulation Elements, a Vesting Tentative Tract Map, and a Development Plan. This project is challenged with water, sewer, traffic, and cultural resource issues.

Deep Creek Homes Property, Hesperia, California. *County of San Bernardino.* Project Manager. Responsible for environmental documentation. Michael Baker prepared the Delineation of Jurisdictional Waters to determine the jurisdictional authority of the U.S. Army Corps of Engineers (USACE), the Lahontan Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) within the boundaries of the Deep Creek Homes Property, located east of Hesperia, in unincorporated San Bernardino County.

Tracy Hills Specific Plan Environmental Impact Report, Tracy, California. *Kimley-Horn and Associates, Inc.* Project Manager. Responsible for environmental documentation. The SEIR was required by settlement agreements entered into by the City of Tracy and the Sierra Club on the previously certified EIR for the adopted Specific Plan. Critical issues, beyond compliance with the respective settlement agreements, are coordination with the Tracy Municipal Airport/San Joaquin County Airport Land Use Commission (ALUC) with respect to the airport approach zone, compliance with California Senate Bill (SB) 610 and SB 221, securing an adequate and reliable water supply for build-out of the Specific Plan, ensuring adequate wastewater treatment capacity and storm water management, and addressing regional transportation impacts, improvements, and fees.

Additional Michael Baker Project Experience

Prado Dam Enhanced Water Conservation Feasibility Study and EIS/EIR and Deviation Study with EA/MND, California. *Orange County Water District (OCWD).* Environmental Task Manager. Michael Baker was responsible for the development of a Corps of Engineers feasibility study and EIS/EIR to increase water conservation within the Prado Dam basin. The complex project included sediment management activities, the second largest riparian forest in Southern California, flood forecasting and triggers, dam safety and flood risk management, and upstream and downstream physical and operational impacts. 2010

Prado Dam Sediment Management Demonstration Project, California. *Orange County Water District (OCWD).* Contributing Planner. Michael Baker created and analyzed alternatives to remove sediment from behind Prado Dam and transport it to the downstream portion of the Santa Ana River. The project included the selection of a plan, development of success criteria, a monitoring plan, NEPA/CEQA documents, and regulatory permitting. The complex project encompassed endangered species and critical habitat, cultural resources, sediment transport, water quality, beach replenishment, and flood risk management both upstream and downstream of the dam. 2010

Brine Line Repair / Replacement EIR / EA Santa Ana Regional Interceptor (SARI), California. *Santa Ana Watershed Project Authority (SAWPA).* Contributing Planner. Michael Baker assisted SAWPA in defining and recommending project alternatives and preparing NEPA and CEQA environmental documents to repair the two SARI lines located within Prado Dam basin. Developed alternatives, environmental documents, and regulatory permits in selection and implementation of a preferred plan to remedy the increased potential for environmental degradation of the pipeline. The documents were prepared on an accelerated schedule to obtain ARRA funding. 2009

Eagle Canyon Dam and Debris Basin EIS/EIR, California. *Riverside County Flood Control and Water Conservation District.* Contributing Environmental Planner. Responsible for the preparation of environmental documentation in compliance with NEPA and CEQA for the construction, operation, and maintenance of a dam, debris basin, and underground storm drain located in the cities of Cathedral and Palm Springs, and in the Agua Caliente Band of Cahuilla Indians land. The Eagle Canyon Dam was proposed to prevent further damage to development downstream. Areas below the dam had been severely damaged in the recent past. 2009

North Basin Recharge Facility EIR, Colton, California. *City of Riverside, Public Utilities Department.* Contributing Planner. Michael Baker prepared an EIR as well as conceptual engineering support for proposed regional recharge basins required for capturing and recharging stormwater and imported water on and near Riverside's Flume Well Tract property located in the City of Colton. The project, originally conceived by SAWPA nearly 20 years ago, is an important regional water supply project to capture excess surface water flows along the Santa Ana River. The project included instream recharge utilizing an inflatable dam and off-stream recharge by excavating groundwater recharge basins on the back side of the Corps levees. Recreation use, sediment transport, hydrology, hydraulics, and endangered species were key components of the recharge project. 2009

Butterfield Specific Plan, Banning, California. Contributing Planner. Michael Baker prepared an Environmental Impact Report for the Butterfield Specific Plan, which is a 1,543-acre development including, golf course, school sites, open space, commercial uses, and up to 5,387 residential units. Critical environmental issues include aesthetics, transportation and circulation, global warming, hydrology and water quality, and biological resources. 2007

Adelina by William Lyon Homes EIR, Fontana, California. Assistant Project Manager. This Environmental Impact Report analyzed the potential environmental impacts of the implementation of a 109-unit condominium complex in North Fontana. The project proposes the construction of 109 for sale condominiums, a recreation center, pool, tot lots, and barbecue areas. Critical environmental issues evaluated in the EIR include aesthetics, noise, air quality, and traffic. 2006

Lytle Creek Apartments EIR, Fontana, California. Assistant Project Manager. Michael Baker prepared an Environmental Impact Report for Lytle Creek Apartments. The highly contentious apartment complex was being proposed at the highest allowable density for multi-family housing in North Fontana. The project consisted of a 238-unit for rent apartment complex, a recreation center, pool, tot lots, and barbecue areas. Critical environmental issues evaluated in the EIR include hydrology, air quality, noise, and traffic. 2006

Grapevine at Sierra EIR, Fontana, California. Assistant Project Manager. Michael Baker prepared an Environmental Impact Report for the Grapevine at Sierra project. The EIR analyzed the potential environmental impacts of the implementation of a 201-unit for sale condominium project located in North Fontana. Critical environmental issues evaluated in the EIR include air quality, hydrology, noise, and traffic. 2006

Adelanto Specific Plan Opportunities and Constraints Analysis, Adelanto, California. Contributing Planner. Michael Baker prepared an Opportunities and Constraints Analysis for a mixed-use development within the Adelanto Specific Plan area. The project consisted of mixed-use development, including residential, commercial, and industrial uses. Critical issues included land use, noise, and infrastructure. 2006

Seawater Desalination Project at Encina - Program EIR, Carlsbad, California. *San Diego County Water Authority.* Contributing Planner. Provided services to the SDCWA as contributing planner and author of the filter backwash solids disposal section of the Draft EIR for the Regional Seawater Desalination Project, a proposed 50 mgd seawater desalination plant adjacent to the Encina Power Station within the City of Carlsbad. The project is a drought-proof regional water supply within San Diego County. The project involved extensive modeling and analysis of ocean water quality. Additional analysis was performed for marine/coastal/terrestrial biology, aesthetics, geology, utilities, land use, and hazardous materials, among others. The EIR also addressed potential impacts due to up to 15 miles of water conveyance pipelines traversing the Cities of Carlsbad, San Marcos, and Vista. 2006

Fagan Canyon Project - On-Call Assistance, Santa Paula, California. Contributing Planner. Ms. Cano was a contributing planner for the preparation of the Final EIR and the Addendum to the EIR for the Fagan Canyon Specific Plan. The proposed plan included 2,500 residential dwelling units within a 2,176-acre canyon north of the City of Santa Paula. The Specific Plan promoted Traditional Neighborhood Design through the development of six individual neighborhoods with housing choices ranging from single-family residences, town homes, live-work units, and apartments. In addition, the plan also proposed two school sites, a town center, and several neighborhood and pocket parks. Environmental issues included water quality and drainage, traffic, geotechnical constraints, grading issues, habitat restoration and preservation, and endangered species. 2006

Lariat Specific Plan, Banning, California. Contributing Planner. Ms. Cano assisted in the preparation of the Lariat Specific Plan for the City of Banning which included multi-family and single family residential development integrated with open space and recreation areas. 2006

Continuing Education/Training

Introduction to Traffic Noise Modeling, Michael Baker, 2006

Professional Affiliations

American Planning Association (APA), Inland Empire, 195917

Thomas J. McGill, Ph.D.

Vice President/California Natural Resources

Years with Michael Baker: 6
Years with Other Firms: 30

Degrees

Ph.D., 1978, Genetics, University of California at Santa Barbara

M.A., 1978, Ecology, University of California at Santa Barbara

B.A., 1971, Biology, Harvard University

General Qualifications

Dr. McGill has experience in preparing all types of biological reports, including resource management plans, habitat conservation plans (HCP), multi-species habitat conservation plans (MSHCP), sensitive species surveys, and biological assessments under Section 7 of the federal endangered species act. He provides the unique combination of being an environmental consultant as well as an attorney having passed the California State Bar in 1990. Dr. McGill has directed numerous habitat conservation planning, land use planning, and environmental efforts throughout the Inland Empire, including the cities of Chino, Ontario, Rancho Cucamonga, Fontana, Rialto, San Bernardino, Highland, Redlands, Riverside, San Jacinto, and Hemet. Dr. McGill is also one of the authors of the multiple award-winning first ever Tribal Multi-Species Habitat Conservation Plan prepared for the Agua Caliente Band of Cahuilla Indians which established the benchmark for all future similar documents for Sovereign Nations. Prior to his entry into the private industry, Dr. McGill worked for the U.S. Department of the Navy as head of environmental management in the Mojave Desert at China Lake.

Experience

Avenue 50 and 52 Crossing/Eastside Dike Levee Evaluation, Coachella Valley, California. *PSAV, LLC.* Task Manager. Responsible for biological studies. Michael Baker prepared regional hydrology, hydraulic, and sedimentation analyses for the 51-square-mile watershed tributary to the Eastside Dike Levee along the Coachella Canal. The project evaluated the condition of the existing levee and identified options for two roadway crossing encroachments across the levee system. Regional hydrology was prepared for this arid region using the HEC-1 program. Flood routing and maximum water surface profiles along the dike were prepared using FLO-2D. The analysis evaluated the dispersion of flows along the dike from the 10 major drainage systems which are tributary to the system.

Bio Report for TT Map 18583. *Highland Fifth-Orange Partners, LLC.* Project Manager. Responsible for project management.

Biological Resources Rpt. *Lewis Operating Corporation.* Project Manager. Responsible for project management.

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Task Manager. Responsible for biological studies. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Date Palm Drive Bridge over Whitewater River, Cathedral City, California. *City of Cathedral City.* Task Manager. Responsible for biological studies. Michael Baker provided environmental documentation and final engineering for a 760-foot-long bridge project that consisted of widening from four lanes to six lanes of traffic;

seismic retrofit; and roadway improvements, including pedestrian and bike lane enhancements. The original 1981 bridge consisted of nine spans, precast P/S I-girder supported on pier walls, and pile foundations. The symmetrical widening matched the existing superstructure type on a 45 degree skew. Scour protection countermeasures were used for protecting existing piles while new pile foundations were placed at sufficient depth to resist high scour conditions. Other features included retrofitting with the existing bridge with girder cable restrainers, hinge retrofit, and deck repairs. The HBR project complied with Caltrans latest 2010 Amendments, including SDC and LRFD criteria, and Local Assistance Procedures Guide in District 8.

Don Wallace Multiuse Trail, Calabasas, California. *LA County Parks & Recreation.* Task Manager. Responsible for biological studies. Michael Baker is providing environmental and engineering services for a 1,800-foot multiuse trail along Las Virgenes Creek. Michael Baker's services include geotechnical investigation, structural analysis, hazardous materials investigation, hydrology and hydraulic analysis, preparation of a survey and property easement report, preparation of construction documents, permitting, and agency coordination.

Energy Audit, MCAS Camp Pendleton, Oceanside, California. *NAVFAC Southwest.* Task Manager. Responsible for biological studies.

Interstate 10/Jefferson Street Interchange Improvements. *County of Riverside.* Task Manager. Responsible for biological studies.

La Entrada Drainage and Hydrology Studies, Coachella, California. *PSAV, LLC.* Task Manager. Responsible for biological studies. The project site includes seven regional conveyances and coalescing alluvial fans tributary to the Eastside Dike along the Coachella Canal. Michael Baker completed regional hydrology studies for the 50.6 square mile watershed, and 1- and 2-dimensional flood routing analyses to support the technical studies and identified the recommended improvements and project mitigation measures for the project site development. Michael Baker identified a whole fan flood hazard management program and developed the alignment and conceptual design for seven regional channels through the site.

La Entrada Specific Plan, Coachella, California. *PSAV, LLC.* Task Manager. Responsible for biological studies. Michael Baker prepared the Delineation of Jurisdictional Waters for the 2,200-acre La Entrada Specific Plan Project, located in the City of Coachella, California. The La Entrada Specific Plan consists of a master planned residential community will include three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan.

La Entrada Specific Plan - Regulatory, Coachella, California. *PSAV, LLC.* Task Manager. Responsible for biological studies. Michael Baker prepared the delineation of jurisdictional waters for the 2,200-acre La Entrada Specific Plan Project. The development consists of a master planned residential community that includes three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan. Michael Baker performed an extensive literature review and conducted multiple field surveys to document baseline conditions and map the extent of jurisdictional features within the boundaries of the project site that could pose a constraint to development. Once jurisdictional features were mapped, Michael Baker quantified project impacts and provided the client with a permitting and mitigation strategy.

Laguna Canyon Creek Erosion Protection and Habitat Restoration Project, Laguna Beach, California. *City of Laguna Beach.* Task Manager. Responsible for biological studies. Michael Baker is providing planning, design, and permitting for the construction of a long-term erosion protection and habitat restoration within Laguna Canyon Creek that traverses a City owned parcel along Laguna Canyon Road. The site houses the City Animal Shelter and the Pacific Marine Mammal Center. The erosion of the creek banks are threatening the animal shelter facility and

undermining the parking lot. The erosion protection project will protect the facilities, improve the flow characteristics of the creek, enhance and restore habitat, and reduce flooding potential without negatively affecting upstream or downstream properties.

North Basin Recharge Project EIR, Riverside, California. *City of Riverside.* Task Manager. Responsible for biological studies. Michael Baker is preparing the EIR for the Riverside Public Utilities Santa Ana River inflatable dam construction and diversion project. The project includes analysis of off-stream recharge basins and an in-stream inflatable dam that would capture 75 acre feet of water and divert 200 cfs of storm flows from the river to the recharge basins. In addition to Army Core of Engineers (ACOE) jurisdiction over the Santa Ana River embankment modifications, the project requires extensive coordination/compliance with regulatory agencies due to downstream and surrounding sensitive habitat.

Orange County On-Call Regulatory Services, Orange County, California. *County of Orange.* Task Manager. Responsible for biological studies. Under multi-year agreements since 2003, Michael Baker has been providing environmental, regulatory, and ecosystem restoration services for a variety of projects. Generally the projects have included channel, roadway, and regional park improvements. Michael Baker's work efforts have included detailed jurisdictional delineations, resource agency coordination and negotiation, creative problem solving with project design, California Environmental Quality Act (CEQA) compliance, biological and cultural assessments, application submittals to state and federal resource agencies, and permit acquisition.

Environmental Compliance Monitoring for the Silver State North Solar Project, Primm, Nevada. *First Solar, Inc.* Project Manager. Responsible for project management. The Silver State North Solar Project is a 400-acre solar project on BLM lands in Primm, Nevada. The Nevada BLM hired Michael Baker to manage all environmental compliance issues for the project on their behalf.

Valley Crest and Yucca Reservoirs, Apple Valley, California. *Golden State Water Company.* Task Manager. Responsible for biological studies. Michael Baker conducted a habitat assessment for the Valley Crest and Yucca Reservoirs Project, located in the Town of Apple Valley, San Bernardino County, California. In order to meet increases in demand and improve service to surrounding residents, Golden State Water Company (GSWC) is proposing to construct two 500,000 gallon above ground reservoir tanks and associated underground pipelines in order to connect both reservoirs to existing infrastructure.

Vista Del Mar Elementary School Construction Vernal Pool Restoration Project, Otay Mesa, California. *San Ysidro School District.* Task Manager. Responsible for biological studies. Michael Baker is leading a multidiscipline team in the implementation of mitigation measures and conditions identified in a certified Environmental Impact Report and state and federal regulatory agency permits and authorizations for construction of a new elementary school and roadway extension in the Otay Mesa area of the City of San Diego.

Pre-Construction Nesting Bird Clearance Surveys, California. *R.Y. Engineering Works, Inc.* Project Manager. Responsible for project management.

Weber Property Residential Development Environmental Impact Report, Danville, California. *Town of Danville.* Environmental Manager. Responsible for biological studies. Michael Baker prepared an Environmental Impact Report (EIR) for the proposed Weber Property Residential Development. The project proposed the construction of 22 single-family homes and a roadway connection to provide a new means of access to an adjacent middle school and alleviate traffic congestion at a nearby intersection. The EIR addressed potential project impacts on federally protected wetlands, riparian habitat, removal of trees not protected by the town's Tree Preservation Ordinance, and aesthetics. In addition, the scope addressed recent amendments to the Bay Area Air Quality

Management District (BAAQMD) CEQA Air Quality Guidelines, and the topics of global climate change, risk and health hazards, and forest resources.

Blessed Teresa of Calcutta Parish Biological and Regulatory Services, Murrieta, California. *Blessed Teresa of Calcutta Church.* Environmental Manager. Responsible for biological analysis. Michael Baker prepared a delineation of jurisdictional waters and biological analysis for a proposed church development within the French Valley area of Winchester, in an unincorporated portion of Riverside County, California. The proposed project would consist of the construction of an institutional use on approximately 15.73-acres on currently vacant land. Specifically, the project proposes construction of a church, multiuse hall, administration building, classrooms, landscaping, an open plaza, and associated parking spaces.

Soil Safe Colton Property, California. *Soil Safe of California, Inc.* Environmental Manager. Responsible for biological studies. Michael Baker performed engineering and grading design services and an EIR and accompanying technical studies for the reclamation of approximately 29 acres of land currently located within the 100-year floodplain of the Santa Ana River. To raise the elevation of the project site and provide 100-year flood protection to the property and surrounding areas, the project would import approximately 500,000 cubic yards of fill material and place it as soil cement on site until the desired grade is achieved. Issues included flood protection, hydrology and water quality, jurisdictional permitting and processing, and engineering design to accommodate future development.

Wine Country Community Plan Program Environmental Impact Report, Riverside County, California. *Riverside Co. Transportation Commission.* Environmental Manager. Responsible for biological studies. Michael Baker prepared a programmatic EIR for the Riverside County Planning Department. Because the Temecula Valley Wine Country region was experiencing an unprecedented level of development interest, with more than 30 new projects in process with the County of Riverside, it was necessary for the county to initiate a comprehensive review of the region's vision, policies, and development standards. The proposed project objectives included goals to guide development in the Temecula Valley Wine Country region to preserve and enhance the region's viticulture potential and rural and equestrian lifestyle and to allow for appropriate levels of commercial development. The resulting Temecula Valley Wine Country Community Plan provides a blueprint for growth to ensure that future development activities will enhance the quality of life for current and future residents.

Cajon Creek Logistics Park, San Bernardino, California. *Hillwood Investment.* Project Manager. Responsible for project management. Michael Baker prepared a Delineation of Jurisdictional Waters and Biological Habitat Assessment to document baseline conditions on the Cajon Creek Logistics Park Project site. The project included development of a 1,256,820-square-foot high-cube logistic facility and a 327,610-square-foot logistic facility situated on approximately 88.87-acres. Michael Baker conducted multiple site visits and a thorough literature review to document baseline conditions and determine the jurisdictional authority. The site was also evaluated for its potential to provide suitable habitat for sensitive biological resources, including San Bernardino Kangaroo Rat, Coastal California Gnatcatcher, Burrowing Owl, Santa Ana River Wooly Star, and Slender-horned Spineflower.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Task Manager. Responsible for biological studies.

Development Agreement Program / Ellis Specific Plan EIR, Tracy, California. *City of Tracy.* Task Manager. Responsible for biological studies. Michael Baker was responsible for the preparation of a program and project level EIR for the Development Agreement Program (DAP) and 320+-acre Ellis Specific Plan, a transit-oriented, mixed-use project within the City of Tracy's Sphere of Influence. The Ellis Specific Plan provides the general vision, layout and design of a proposed mix of residential, commercial, office/professional and

recreational/open space uses (including a 12-acre Swim Center within a 20-acre Community Park) with the focal point of community activities centered around the village center.

Foothill Parkway Westerly Extension, Corona, California. *City of Corona.* Task Manager. Responsible for biological studies. Michael Baker prepared 12 initial concept plans and developed a comprehensive basis of design report based upon design and environmental studies for the westerly extension of Foothill Parkway as a four-lane roadway from approximately 250 feet west of Trudy Way to Green River Road, a distance of approximately two miles. Michael Baker began a public outreach program, designed a comprehensive website, prepared illustrative communications materials, and organized a large-scale, interactive open house focused on details for the roadway extension. Michael Baker also provided engineering services for the preparation of roadway plans, bridge and retaining wall plans, right-of-way engineering, storm drain plans, roadway grading plans, traffic signal plans, landscape and irrigation plans, water line plans, and construction cost estimates.

ATP_Mountain Temple HA/BTR. *The Altum Group.* Project Manager. Responsible for project management.

Biological Consulting Ser. *Robinson's Ready Mix Concrete, Inc.* Project Manager. Responsible for project management.

General Permit Renewal 2012. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

Rancho California Water District, Pond Five, Murrieta, California. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

San Jacinto Reservoir Pum. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

Tierrasanta Biological Monitoring, Tierrasanta, California. *Tierrasanta LLC.* Project Manager. Responsible for project management.

Hemet General Wetlands Permit, Hemet, California. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management. The project involved updating the regional regulatory permits.

WRCRWA MSHCP Bio/Sec 7. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

ATP_San Jacinto Monitoring. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

ATP_San Jacinto Nesting Bird. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

RBF_DUNBAR_ATP 041913. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

RBF_DUNBAR_ATP3 041913. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

Garden Air-Wash. *Wells Fargo Bank NA.* Task Manager. Responsible for biological studies.

Biological Monitoring for. *Hillwood Investment.* Project Manager. Responsible for project management.

Camarillo Pipeline Extens. *Spectrum II.* Project Manager. Responsible for project management.

Copperfield Surveys. *Legacy Homes.* Task Manager. Responsible for biological studies.

Cucamonga Basin Crosswalls Maintenance, Upland, California. *Desert Consulting Group, Inc.* Project Manager. Responsible for project management. Michael Baker conducted a habitat assessment for the Cucamonga Basin Crosswalls Maintenance Project. The San Antonio Water Company (SAWCo) crosswall conservation facility consists of a series of rock filled gabion walls designed to collect sediment and debris from flows in Cucamonga Creek. SAWCo is proposing to remove excessive material that has accumulated behind the crosswalls.

DSF Surveys for Proposed. *Gresham Savage Nolan & Tilden.* Project Manager. Responsible for project management.

HA Anza Reservoir No. 2.*K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

Biological, Cultural, and Paleontological Monitoring for the Replacement of an 18-Inch Waterline, Marina Del Rey, California. *County of Los Angeles.* Project Manager. Responsible for project management. Michael Baker provided biological, cultural, and paleontological monitoring for the replacement of an 18-inch water line along Admiralty Way in the City of Marina del Rey, California. Monitoring efforts included creating an iPad mapping and data collection application to enable instantaneous and accurate in-field assessment of ongoing nesting bird activities and ensure that construction activities did not disrupt nesting birds. Construction noise was also monitored to ensure it did not disrupt nesting behavior. The project site has the potential for sensitive archaeological and paleontological resources. Excavations were monitored daily by a certified archaeologist, certified paleontologist, and a Native American monitor appointed by the local Indian tribes to ensure that any sensitive resources found would be properly recorded and removed.

P-880 Helicopter Maintenance Hangar Site Utilities Evaluation and Field Investigation, Naval Air Station North Island, Coronado, California. *NAVFAC Southwest.* Task Manager. Responsible for biological studies. Michael Baker prepared a site utility study to identify the project requirements for site utilities, including water, fire water, sewer, natural gas, steam, storm water, power, and communications (e.g., telephone, cable, and internet). Michael Baker also provided an additional geotechnical and hazardous materials study. The project conformed to anti-terrorism/force protection standards and sustainable development criteria for design, development, and construction.

RBF-7-14-11.*K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

River Road Streambed Alte. *K.S. Dunbar & Associates, Inc.* Project Manager. Responsible for project management.

SBKR Habitat Assessment. *Walton Development, LLC.* Project Manager. Responsible for project management.

Section 103 Compliance fo. *County of Kern.* Project Manager. Responsible for project management.

UCI Bio & Cultural Assessment. *University Of California.* Project Manager. Responsible for project management.

Upper SAR Final Conservat. *Robinson's Ready Mix Concrete, Inc.* Project Manager. Responsible for project management.

Sol Orchard Blvd. "B" PV Solar. *Sol Orchard San Diego 5 LLC.* Task Manager. Responsible for biological studies.

SDG&E Mission Facilities Master Plan, Mission Valley, California. *Richard Yen & Associates.* Task Manager. Responsible for biological studies. Michael Baker provided a long-range Facilities Master Plan for the Mission Control Center site in Mission Valley in San Diego. The Master Plan involved an extensive documentation and analysis of existing and planned development: physical and environmental constraints; and General Plan, Community Plan, Zoning, Development Code and other State and local regulatory, permit and approval history. The Master Plan then coordinated the existing conditions and constraints analysis with all other disciplines (architecture, structural, landscape, civil, planning, company department needs analysis and programming) to prepare a variety of short and long-range development scenarios, opportunities and strategic recommendations for implementation. The Facilities Master Plan was presented to SDG&E Executives to inform capital and facilities management and operational decisions

West Valley Phase_1.*Hillwood Investment.* Project Manager. Responsible for project management.

Bio Monitoring_Building 4.*HW Southgate Bldg 4, LLC.* Project Manager. Responsible for project management.

Nesting Bird_Hemet. *City of Hemet.* Project Manager. Responsible for project management.

RBF-DBESP Blessed Teresa. *Blessed Teresa of Calcutta Church.* Project Manager. Responsible for project management.

Santiago Canyon Bridges Maintenance, Orange County, California. *County of Orange.* Task Manager. Responsible for biological studies. Michael Baker prepared the Delineation of Jurisdictional Waters and Biological Habitat Assessment for the Santiago Canyon Bridges Maintenance Project, located in the unincorporated areas of Orange County, California. The project consists of the rehabilitation and maintenance of ten bridges that cross over Santiago Creek, Silverado Creek, and Trabuco Creek. The purpose of the project is to ensure public safety and extend the longevity of each bridge through the rehabilitation of existing pier walls, spalls, and guard railings. Project activities will also include repairing concrete voids and cracks along existing bridge infrastructure and the placement of rip rap to prevent additional scour and erosion that has occurred at many of the bridge locations.

Cajon Creek Logistics Park. *Hillwood Investment.* Project Manager. Responsible for project management.

Foothill Retarding Basin Maintenance, Orange County, California. *County of Orange.* Task Manager. Responsible for biological studies. Michael Baker is providing natural resource and regulatory services to the County of Orange (OC Public Works) for nine of the "Foothill Basins" located along State Route 241 and within the foothills of the Santa Ana Mountain range, Orange County. The Foothill Basins provide water quality, flood control and public safety by reducing peak stormwater flow and trapping debris and sediment that would otherwise clog downstream channels and / or be deposited into Newport Bay. In order to ensure flood protection capacity and basin function, routine maintenance including the removal of debris, vegetation, and sediment is required.

Dublin Crossing Specific Plan and Environmental Impact Report, Dublin, California. *City of Dublin.* Task Manager. Responsible for biological studies. Michael Baker is currently preparing the Specific Plan and EIR for the proposed Dublin Crossing mixed-use development. The development includes up to 1,995 residential units, 200,000 square feet of commercial uses, a 30-acre community park, five acres of neighborhood parks, and a 12-acre elementary school site.

RBF-PSUSD Rancho Mirage HS #4.*Reno Contracting.* Task Manager. Responsible for biological studies.

City of Colton Delhi Sands Flower-loving Fly HCP, Colton, California. *City of Colton.* Project Manager. Worked directly with biologists from USFWS to structure a viable conservation strategy that would preserve these known populations while allowing the City to develop its last large remaining block of land along the I-10 Freeway. Michael Baker prepared an HCP for the City of Colton to address impacts to Delhi Sands Flower-loving Fly (DSF) for the West Valley Specific Plan Area which has the largest known DSF populations north of the I-10 Freeway.

Rossmoor Storm Channel Improvements, Los Alamitos, California. *County of Orange.* Task Manager. Responsible for biological studies. Michael Baker prepared and processed a standard individual permit through the U.S. Army Corps of Engineers for the Rossmoor Storm Channel Improvement Project. The project involves the removal of existing riprap, restoration of earthen slopes, and the construction of a reinforced concrete trapezoidal channel to greatly reduce or eliminate channel maintenance issues.

RBF-Homecoming Phs 5 BUOW Survey. *Lewis Operating Corporation.* Project Manager. Responsible for project management.

ATP_Brewer Assemblage HA.*Lewis Operating Corporation.* Project Manager. Responsible for project management.

ATP_Focused Surveys Pac Indust. *Pacific Industrial.* Project Manager. Responsible for project management.

The Promontory at California State University Monterey Bay, Marina, California. *AMCAL Multi-Housing, Inc.* Task Manager. Responsible for biological studies. Michael Baker assisted in the preparation of a specific plan and environmental review in compliance with the California Environmental Quality Act (CEQA) for The Promontory student housing development project at California State University Monterey Bay (CSUMB). The project includes three four-story buildings to be built on approximately eight acres on the former Fort Ord Army Base. Michael Baker developed the specific plan to define a set of development policies, land use regulations, design standards, and a public funding/financing program. Additionally, Michael Baker prepared an initial study/mitigated negative declaration (IS/MND) to identify and describe potential environmental impacts associated with the project. The document also recommended and incorporated mitigation measures where necessary to reduce the level of significance of identified impacts to below a level considered significant.

S.R. 91 Westbound Widening - Final PS&E, Orange County, California. *Orange County Transportation Authority (OCTA).* Task Manager. Responsible for biological studies. Michael Baker provided plans, specifications, and estimates (PS&E) for the S.R. 91 widening project. The project consisted of 3.8 miles of freeway widening to convert the westbound auxiliary lanes into through mixed flow lanes between Brookhurst Street and Euclid Street, Euclid Street and Harbor Boulevard, and Raymond Avenue and State College Boulevard. The project also added two-lane exit ramps and associated auxiliary lanes at three interchange locations at the westbound exit ramps to Raymond Avenue, Lemon Street, and Brookhurst Street.

Redlands 6120-Biological. *Redlands 6120, LLC.* Project Manager. Responsible for project management.

Caspers Regional Park Water Line Replacement, San Juan Capistrano, California. *County of Orange.* Task Manager. Responsible for biological studies. Michael Baker prepared the Biological Constraints Analysis and a Preliminary Delineation of Jurisdictional Waters for the Caspers Regional Park Water Line Replacement Project in unincorporated south Orange County. The proposed project will consist of installing new water lines, drinking faucets, gate valves, and hose bibs within park campgrounds and recreational areas. In addition, Michael Baker will conduct nesting bird clearance surveys prior to starting construction activities within Caspers Regional Park and provide construction monitoring through all phases of the project.

Mill Creek Wetlands. *Lewis Operating Corporation.* Task Manager. Responsible for biological studies.

Mill Creek Wetlands Permitting, Ontario, California. *Lewis Operating Corporation.* Task Manager. Responsible for biological studies. Michael Baker provided environmental permitting services for the development of the Mill Creek Wetlands. Michael Baker's services included easement acquisition, preparation of environmental documentation and permit applications, regulatory agency coordination, and stakeholder coordination.

RBF-SDSU Imperial Valley Owl Survey. *Confidential Client.* Task Manager. Responsible for biological studies.

E. Palm Canyon Widening. *City of Cathedral City.* Task Manager. Responsible for biological studies.

West Valley Logistics Center, Fontana, California. *Hillwood Investment.* Project Manager. Responsible for project management. Michael Baker was retained by Hillwood Investment Properties to perform a jurisdictional delineation of the West Valley Logistics Center project located in the City of Fontana, County of San Bernardino, California. The applicant proposed to develop seven light industrial buildings on the project site. The project site included nine parcels and one lettered lot of which eight are existing legal parcels. The seven light industrial buildings would total 214.89-acres on the 298-acre project site. Michael Baker conducted a field investigation and determined that the on-site waters and wetlands were isolated. Michael Baker then prepared a jurisdictional delineation and processed a jurisdictional determination through the U.S. Army Corps of Engineers Los Angeles District to confirm the isolated finding. An isolated waters finding would eliminate Corps jurisdiction over the project site. Michael Baker also prepared and processed State applications with the Regional Water Quality Control Board and California Department of Fish & Wildlife for impacts to isolated waters of the state. A Habitat Mitigation and Monitoring Plan was also prepared which addressed permanent impacts to the isolated surface waters located on-site. In addition, Michael Baker prepared a Habitat Assessment which inventoried various species both present and potentially occurring within the proposed limits. According to previous biological monitoring it was discovered that the California gnatcatcher (Polioptila californica) inhabited the hills surrounding the project site.

Adaptive Management Plan. *Inland Empire Utilities Agency.* Project Manager. Responsible for project management.

San Mateo Road Culvert Crossing, Camp Pendleton, California. *EPC Corporation.* Task Manager. Responsible for biological studies. Michael Baker biologists conducted preconstruction nesting bird surveys for storm drain improvements at the San Mateo Road culvert crossing within MCB Pendleton, and provided biological monitoring during construction activities to ensure no impacts to sensitive biological resources.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Project Manager. Responsible for project management. Michael Baker has been supporting San Bernardino Valley Water Conservation District with the development and implementation strategy for the Upper Santa Ana Wash Plan and Habitat Conservation Plan (HCP), including Plunge Creek, for four years. Initial efforts involved assessing the quality and quantity of flood plain habitat associated with the Santa Ana River in the foothills of the San Bernardino Mountains. The overall project site is approximately 4,400 acres with conservation occurring in approximately 1,900 acres. Michael Baker is transitioning into preparing the environmental impact statement (EIS) for the project and is continuing to support the ongoing preparation of the HCP. It is estimated that two more years will be needed to complete the project.

Deep Creek Homes Property, Hesperia, California. *County of San Bernardino.* Task Manager. Responsible for biological studies. Michael Baker prepared the Delineation of Jurisdictional Waters to determine the jurisdictional

authority of the U.S. Army Corps of Engineers (USACE), the Lahontan Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) within the boundaries of the Deep Creek Homes Property, located east of Hesperia, in unincorporated San Bernardino County.

I-10/Jefferson Street Int. *County of Riverside.* Task Manager. Responsible for biological studies.

Additional Michael Baker Project Experience

DARPA Grand Challenge, San Bernardino County, California. Project Manager. In support of a race of autonomous vehicles across BLM lands between Barstow and Las Vegas, prepared an Environmental Assessment (EA) under NEPA and a Biological Assessment under the Federal Endangered Species Act. Both documents were approved - the EA was issued a FONSI and the USFWS issued the BLM and DOD a Biological Opinion approving the race. The race was held without any instances and required coordination between both BLM California Desert District and BLM Nevada.

Environmental Compliance Monitoring for the Silver State North Solar Project, Primm, Nevada. Project Manager. The Silver State North Solar Project is a 400-acre solar project on BLM lands in Primm, Nevada. The BLM Las Vegas hired Michael Baker to manage all environmental compliance issues for the project on their behalf. Michael Baker conducts a weekly visit to project site to verify that all mitigation measures from the EA, all environmental permit conditions, as well as 51 stipulations associated with BLM's right-of-way permit are being successfully implemented.

MSHCP Consistency Analyses for the Western Riverside County and Coachella Valley Association of Governments. Conducted several dozen MSHCP consistency analysis reports for projects throughout Western Riverside County and the Coachella Valley. Several of these analyses have included the preparation of habitat evaluation and acquisition negotiation strategies (HANS) reviews and determination of biological equivalent or superior preservation (DBESP) analyses.

EIS for Levy Construction, Marine Corps Base Camp Pendleton, San Diego County, California. Managed the preparation of an EIS for the construction of a levy in wetland habitat for the U.S. Marine Corps. Key environmental issues include endangered species, wetlands, flood plains, and culture resources (including historic properties) air quality, noise, public services/access, utilities, hazardous waste, and traffic circulation.

RMP for California Red-Legged Frog and San Francisco Garter Snake, Half Moon Bay, California. Prepared a habitat restoration and biological monitoring plan for these federally listed species for the Bay Area Rapid Transit (BART). As part of its obligations under Section 7 Consultation, BART agreed to purchase a 250-acre parcel near Ano Nuevo State Park at Half moon Bay that was known to support both species. Also documented the extent of the distribution for each species onsite. Using this data, prepared the request the required plans for approval by USFWS and California State Parks Department.

HMMP for Various Projects. Inland Empire, California. Prepared HMMP in compliance with CEQA mitigation requirements for the following projects/ areas with non-listed special-status species: "The Preserve" development project in the City of Chino; Glen Helen Specific Plan area in San Bernardino County; and the P&V Development area in the Mojave Desert near Barstow. The Chino HMMP provided detailed methodology for implementing mitigation measures for Prado Basin: burrowing owl, least Bell's vireo, southwestern willow flycatcher, Santa Ana sucker, waters of the U.S., raptor foraging habitat, migratory bird and waterfowl habitat. The Chino HMMP was awarded four AEP and APA awards in 2003 and 2004 based on the uniqueness and creativity of the approach undertaken.

Non-Michael Baker Project Experience

On-Call Environmental/Biological Consulting, Los Angeles, California. Prior to joining Michael Baker, Dr. McGill was the program manager for an on-call contract for environmental/biological consulting services to the Los Angeles Recreation and Parks Department for 10 years. He provided biological and environmental clearances for over a dozen projects. 1999 - 2007

Hawes Radio Relay Station, San Bernardino County, California. Prior to joining Michael Baker, Project Manager. The Hawes Radio Relay Station was an abandoned Air Force facility on BLM lands withdrawn for military purposes. Dr. McGill prepared an EA under NEPA and conducted a Section 7 Consultation on behalf of the BLM and DOD with USFWS regarding the demolition of all structures on this property and its return to open public lands to be administered by the BLM. The EA was issued a FONSI and the USFWS issued the BLM a Biological Opinion approving both the demolition of structures and the return of the land to BLM management. 2007

Santa Ana River Trail Biological Assessment. Prior to joining Michael Baker, selected by the City of Corona and County of Riverside to prepare plans and the environmental documentation for the segment of the Santa Ana River trail through the Prado Basin from the City of Norco through the City of Corona and past Prado Dam. Dr. McGill oversaw all biological studies and focused surveys and was responsible for the preparation of a MSHCP Consistency Report.

Prado Basin Biological Studies and Section 7 Consultation. Prior to joining Michael Baker, Dr. McGill was teamed with the Parsons Transportation Group to provide biological consulting services for improvements to the S.R. 91 and S.R. 71 interchange along the edge of the Prado Basin. Biological issues include: the presence of critical habitat for the least Bell's vireo and southwestern willow flycatcher, impacts to the Santa Ana sucker, impacts to wetlands and waters of the U.S., wildlife movement corridors, and consistency with the Western Riverside County MSHCP.

The Preserve Development, Chino, California. Prior to joining Michael Baker, Dr. McGill authored the City of Chino Subarea 2 Resources Management Plan for "The Preserve" development project. The purpose of this work effort was to provide a detailed methodology for implementing the biological resources mitigation measures contained in the environmental impact report (EIR) for Chino Subarea 2, in the Prado Basin. Mitigation measures were prepared for offsetting impacts to burrowing owl habitat, raptor foraging habitat, migratory bird and waterfowl habitat, federally listed species - least Bell's vireo, southwestern willow flycatcher, and Santa Ana sucker, waters of the U.S., and water quality concerns from discharges of stormwater into the Santa Ana River.

City of Chino Annexation, General Plan Amendment and EIR. Prior to joining Michael Baker, managed the preparation of all three components of this planning effort to annex over 5,000-acres of agricultural land into the City of Chino. Hydrology, biological resources, water quality and flood control were key areas of analysis.

Agua Caliente Indian Tribal Habitat Conservation Plan. Prior to joining Michael Baker, Dr. McGill was the lead biologist for assessing conservation needs of threatened and endangered species on Tribal lands, developing a conservation strategy and preparing a habitat conservation plan. The Agua Caliente Reservation is 32,000 acres that occupies portions of the San Jacinto and Santa Rosa Mountains, as well as portion of the valley floor in the Palm Springs area. Conservation requirements for such species as the Peninsular Bighorn Sheep, Coachella Valley fringe-toed lizards, desert tortoise, least Bell's vireo, southwestern willow flycatcher, California red-legged frog and Mountain yellow-legged frog, and Casey's June beetle were balanced against recreation uses and land development requirements. His work resulted in the first ever Tribal HCP. This project won both the State Association of

Environmental Professionals (AEP) and State American Planning Association (APA) awards for excellence in Natural Resources Management in 2003.

The Upper Santa Ana River Wash Plan and Habitat Conservation Plan, Highland, California. *San Bernardino Water Conservation District.* Dr. McGill was hired by the San Bernardino Water Conservation District to work directly with USFWS to address the Service's concerns over potential impacts resulting in jeopardy to San Bernardino kangaroo rat and slender-horned spineflower from the approval of the Upper Santa Ana River Wash Plan. Following a year of intensive inventories, Dr. McGill and USFWS were able to structure a conservation strategy and habitat restoration plan that has satisfied USFWS and the Wash Plan and accompanying HCP have been formally endorsed by USFWS and the HCP is in its final planning stages.

Desert Conservation Program Multi-Species Habitat Conservation Plan (HCP), Nevada. Prior to joining Michael Baker, Dr. McGill led his team in providing Clark County with biological expertise and technical support to review and amend the Multi-species Habitat Conservation Plan (MSHCP) and Environmental Impact Statement (EIS) to obtain a revised Endangered Species Act (ESA) Section 10(a) Incidental Take Permit. In revising the MSHCP, Dr. McGill is assisting the County to provide a more realistic and manageable Desert Conservation Program (DCP), which will allow the County to accomplish the goals of the MSHCP more effectively.

Habitat Conservation Plan (HCP) for Nursery Products, Barstow, California. Prior to joining Michael Baker, Dr. McGill prepared an HCP for the loss of desert tortoise habitat. The client was applying for a permit from the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. 1531 et seq) to incidentally take the federally threatened desert tortoise. This incidental take is to occur as a result of the use of 87-acres for the Hawes Composting Facility and access roads.

North Fontana Habitat Conservation Plan, Fontana, California. Prior to joining Michael Baker, Dr. McGill prepared an environmental assessment and habitat conservation plan for a site under the jurisdiction of the U.S. Fish and Wildlife Service in the northerly section of the City of Fontana. The proposed development was designed to change a primarily agricultural area to a variety of urban uses, including planned residential and mixed-use. Because of the presence of several species of concern or their habitat on the site, an incidental take permit was required.

Walton Development San Bernardino Kangaroo Rat Habitat Conservation Plan, Redlands, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of a habitat conservation plan for the San Bernardino kangaroo rat on a 145.98-acre property located in the City of Redlands for Walton Development.

MSHCP Consistency Analyses for the Western Riverside County and Coachella Valley Association of Governments, Riverside County. Prior to joining Michael Baker, Dr. McGill has conducted several dozen MSHCP consistency analysis reports for projects throughout Western Riverside County and the Coachella Valley. Several of these analyses have included the preparation of habitat evaluation and acquisition negotiation strategies (HANS) reviews and determination of biological equivalent or superior preservation (DBESP) analyses.

Endangered Species Act Compliance, Southern California. Prior to joining Michael Baker, Dr. McGill authored several dozen Biological Assessments under Section 7 of the federal Endangered Species Act and over a half dozen HCPs in compliance with Section 10 of the federal Endangered Species Act. HCPs/MSHCPs included the Agua Caliente Tribal MSHCP, the North Fontana MSHCP, the Rialto MSHCP, and the Walmart Delhi Sands Flower-Loving Fly HCP in Rialto, the Jurupa Avenue Widening Delhi Sands Flower-loving Fly HCP in Fontana, the Ryland Homes

Delhi Sands Flower-loving Fly HCP in Fontana, and the Walton Homes San Bernardino Kangaroo Rat HCP in Redlands. His work with the Agua Caliente Band of Cahuilla Indians resulted in the first ever Tribal Habitat Conservation Plan. This project won both Association of Environmental Professionals (AEP) and American Planning Association (APA) awards in 2003.

Panattoni Development Species RelocationPlan, Chino, California. Prior to joining Michael Baker, Dr. McGill managed a relocation plan for burrowing owls identified on the Chino Ranch North property. The owls were successfully relocated to the Carson Owl Habitat Preserve in the City of Chino.

Sares Regis Relocation Plan for the Burrowing Owl, Chino, California. Prior to joining Michael Baker, Dr. McGill managed a relocation program for the burrowing owl in the City of Chino.

Alabama Street Bridge, San Bernardino County, California. Prior to joining Michael Baker, Dr. McGill worked closely with the County of San Bernardino to prepare the necessary biological and environmental documents required to clear the Alabama Street bridge project which will increase the capacity of the existing undersized culvert which, during the 2005 winter storms, became plugged with debris which caused the flows in City Creek to overtop the roadway and wash away a large section of Alabama Street and related appurtenances. The County proposes to construct two additional 48-feet long by 11-foot rise arch culverts under Alabama Street. An initial study (IS) and an environmental assessment (EA) were prepared for the reconstruction of Alabama Street and bridges, in addition to wetland permits and a Section 7 consultation with U.S. Fish and Wildlife Service due to the presence of San Bernardino kangaroo rat (SBKR) and Santa Ana River woolly star.

Boulder Creek Bridge, Highland, California. Prior to joining Michael Baker, Dr. McGill oversaw the preparation of wetland permits and a Section 7 consultation with USFWS for repairing the Boulder Creek Bridge. The

2005 winter storm caused severe flooding and resulted in a leak at the bridge. The Section 7 consultation was initiated due to the presence of both San Bernardino kangaroo rat (SBKR) and Santa Ana River woolly star at the project site. Boulder Creek drains directly into the Santa Ana River, jurisdictional waters of the U.S., and therefore construction within the creek requires a permit by the U.S. Army Corps of Engineers.

I-10 Interchange Projects Natural Environmental Study/Section 7 Biological Assessment, Southern California. Prior to joining Michael Baker, Dr. McGill prepared numerous NES/Section 7 biological assessments to document the results of the biological resources and potential impacts of proposed improvements for Caltrans at multiple interchanges along the I-10 Freeway. Interchanges located in the Inland Empire are Cherry Avenue, Citrus Avenue, Cypress Avenue, Sierra Avenue, Alder Avenue, Cedar Avenue, Riverside Avenue, and Pepper Avenue. In Palm Springs, the interchange is located at Ramon Avenue.

Ramon Road Interchange Project, Agua Caliente Tribal Land, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of an Environmental Assessment (EA) under CEQA, as well as a biological assessment under Section 7 of the Environmental Protection Act (EPA) for this interchange project for the Agua Caliente Band of Cahuilla Indians. Both documents were processes through the California Department of Transportation (Caltrans). Major project issues included the presence of federally endangered and threatened species on Tribal land.

Sierra Avenue Interchange at I-10, Fontana, California. Prior to joining Michael Baker, under an on-call contract with the City of Fontana, Dr. McGill managed the biological and environmental services required to link Sierra

Avenue with the new I-210 freeway in the City of Fontana. Dr. McGill worked with the City of Fontana, Caltrans, and Federal Highway Administration (FHA) to develop the environmental documentation for improving the existing Sierra Avenue/I-10 interchange. Efforts included biological field surveys, submission of a NES report under Caltrans guidelines, and technical support to the FHA during the processing of Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) due to potential impacts to an endangered species.

Hillwood Development Company Commercial Projects, Norton Air Force Base, San Bernardino County, California. Prior to joining Michael Baker, Dr. McGill conducted a habitat assessment and a biological technical report required for the proposed development of 150-acre site on the north side of the Santa Ana River at Norton Air Force Base for the Hillwood Development Company. Focused surveys were conducted for several species of concern including the San Bernardino kangaroo rat (SBKR) and burrowing owl. Both species were found on-site requiring coordination with USFWS and CORG for acquiring Incidental Take Permits.

DARPA Grand Challenge Section 7 and NEPA Compliance Projects, Mohave Desert, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of an environmental assessment and a biological assessment for the Bureau of Land Management (BLM) and the Defense Advanced Research Projects Agency (DARPA) for the DARPA Grand Challenge which involved a field test of unmanned autonomous vehicle technology on BLM lands. The impacts to desert tortoise were a primary concern.

Glen Helen Specific Plan Environmental Impact Report (EIR). Prior to joining Michael Baker, managed the preparation of an EIR for the Glen Helen Specific Plan. The County of San Bernardino initiated the specific plan for 3,400-acres, located near the interchange of the I-15 and I-215 freeways in the unincorporated area of San Bernardino County. The site includes one of the largest remaining wetland/riparian woodlands in San Bernardino County.

Head of Environmental Management, U.S. Navy. Prior to joining Michael Baker, managed environmental programs at the Naval Weapons Center (NWC), China Lake, the one million-acre facility in the Mojave Desert for nine years (1985-1993). Direct responsibilities included endangered species management, natural resources management, cultural resources management, wetlands management, grazing management, land use management, encroachment management, environmental compliance, public involvement, and real estate management.

Wildlife Biologist, U.S. Navy. Prior to joining Michael Baker, wildlife biologist for the NWC, Chino Lake between 1979 and 1985. Duties included field inventories, including desert bighorn sheep; endangered species surveys, including desert tortoise and desert pupfish; preparation of technical reports; preparation of Section 7 consultation packages; agency coordination; and legal analysis of environmental and conservation laws and regulations.

NWC, China Lake Land Use Management Plan. Prior to joining Michael Baker, managed the preparation of a comprehensive land use management plan and environmental impact statement for the Naval Air Weapons Station (NAWS) at China Lake. Tasks included preparing several other subordinate management plans, including a Natural Resources Management Plan, a Cultural Resources Management Plan, a Public Involvement Plan, and a Range Management Plan.

Indian Wells Valley Groundwater Management Program. Prior to joining Michael Baker, chairman for NAWS China Lake's groundwater management program between 1985 and 1994. Duties included chairing a valley-wide groundwater program which included U.S. Geological Survey (USGS), the Indian Wells Valley Water District, Kern County Water Agency, U.S. Bureau of Reclamation, NAWS China Lake, and the North American Chemical Company.

San Bernardino Kangaroo Rat Habitat Conservation Plan, Rialto, California. Prior to joining Michael Baker, Project Manager for the preparation of a Habitat Conservation plan for the San Bernardino Kangaroo Rat on a 145.98-acre property designated for residential development by Ryland Homes.

2081 Permit Applications, Southern California. Prior to joining Michael Baker, Dr. McGill has authored several Section 2081 permit application for impacts to State-listed species such as the Mohave Ground Squirrel and the Desert Tortoise.

Low-Effect HCP for the Jurupa Avenue Improvement Project, Fontana, California. Prior to joining Michael Baker, Dr. McGill prepared a low effect Habitat Conservation Plan for the Delhi Sands flower-loving fly for the City of Fontana.

Federal Highway Administration Biological Assessment, Southern California. Prior to joining Michael Baker, Dr. McGill managed the preparation of a Biological Assessment for the Delhi Sands flower-loving fly for a number of Interstate 10 Upgrade Projects for the Federal Highway Administration. The interchanges were located at Alder, Cedar, Pepper, and Riverside Avenues. The primary goal of the biological Assessment was the obtainment of an incidental take permit for the federally endangered DSF from the United States Fish and Wildlife Service, pursuant to Section 7 of the Endangered Species Act.

Section 7 Consultant for the City of Redlands Sports Park, Redlands, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of a Biological Assessment under Section 7 for the San Bernardino Kangaroo Rat inhabiting the site of the proposed 98-acre Redlands Sports Park. This project was awarded the outstanding Planning Award by the American Planning Association.

Base Closure Environmental Impact Statements (EISs), California. Prior to joining Michael Baker, Dr. McGill managed the preparation of three EISs for closing Air force Bases. Issues addressed included: endangered species, wetlands, cultural resources, compatibility of land uses, recreational uses, air quality, noise, public services/access, utilities, hazardous wastes, and traffic/circulation.

E-2 Relocation EIS, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of an EIS for the relocation of E-2 aircraft for the U.S. Department of the Navy. Issues addressed included endangered species; wetlands; flood plains; cultural resources, including historic properties; air quality; noise; public service/access; utilities; hazardous wastes; and traffic circulation.

Biological Resources Assessment for the Proposed Needles Highway Reconstruction/ Rehabilitation Project, Southern California. Prior to joining Michael Baker, Dr. McGill conducted a Feasibility Study to examine road improvements proposed to provide a higher level of service along a generally undeveloped stretch of highway and to provide an "all-weather" facility. As part of assessing the feasibility of the project, a Biological Assessment was conducted to characterize the biological resources along the various alternative alignments for the project and identify potential constraints and/or opportunities associated with them. It was determined that 15 sensitive wildlife species potentially occur within the project area, including desert tortoise and burrowing owl. Six species of protected or endangered birds were also identified, as were several County-protected Desert Native Plants.

Fontana Senior Housing Environmental Assessment, Fontana, California. Prior to joining Michael Baker, Dr. McGill managed the preparation of an EA, Notice of Intent to Request Release of Funds, and a Notice of Finding of

No Significant Impact (FONSI) for the Downtown Senior Affordable Housing Project located in the City of Fontana. The EA was completed pursuant to National Environmental Policy Act (NEPA) and Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508) and the U.S. Department of Housing and Urban Development (24 CFR Parts 50 and 58). Emphasized topics in the EA included historic preservation, environmental justice, noise abatement and control, toxic or hazardous substances and radioactive materials (asbestos, lead, radon, and polychlorinated biphenyl), and displacement of existing residents and businesses.

Resource Management Plans, Southern California. Prior to joining Michael Baker, Dr. McGill prepared several Resources Management Plans (RMPs) for those projects/areas where no listed species occur, but where special status exist thus requiring the preparation of less formal management plans in compliance with CEQA. RMPs have been prepared for the managing of burrowing owls in the City of Chino and for managing several sensitive species within the Glen Helen Specific Plan area in San Bernardino County and the P&V Development area in the Mojave Desert near Barstow. The Chino RMP was awarded four AEP and APA awards in 2003 and 2004 based on the uniqueness and creativity of this approach.

Fontana Annexation and Mitigated Negative Declaration (MND), Fontana, California. Prior to joining Michael Baker, Dr. McGill supervised the preparation of a MND for the annexation of the Foothill Corridor and East Side Annexation Areas (approximately 3.9 square miles), which involved the replacement of the existing County of San Bernardino land use districts with City of Fontana pre-zoning districts. Mitigation measures were recommended for sensitive biological resources located in the annexation areas, transportation and traffic roadway improvements, and stormwater drainage issues to reduce potential impacts to less than significant levels.

Focused Biological Surveys, Agua Caliente Reservation, Palm Springs, California. Prior to joining Michael Baker, Dr. McGill managed focused biological surveys on the Agua Caliente Reservation to assess the occurrence and viability of habitat of sensitive species potentially occurring on the Reservation in accordance with USFWS standards. Surveys were conducted in riparian habitat (least Bell's vireo, southwestern willow flycatcher, mountain yellow-legged frog, and California red-legged frog), in "big dune" habitat (Coachella Valley milk vetch, Palm Springs round-tailed ground squirrel, burrowing owl, Palm Springs pocket mouse, flat-tailed horned lizard, Coachella Valley grasshopper, Coachella giant sand treader cricket, Coachella Valley Jerusalem cricket) and in Casey's June beetle habitat.

Honors and Awards

Lifetime Achievement Award, 2004 Inland Empire Leaders of Distinction

Outstanding Individual Achievement Award, 2003 AEP State of California

Outstanding Individual Achievement Award, 2003 AEP Inland Empire Chapter

Computer Skills

Microsoft Office Suite

Instrument Proficiency

GPS

Professional Affiliations

Association of Environmental Professionals (AEP), Member
Business Development Association of the Inland Empire, Member
California State Bar Association, Member
Death Valley Natural History Association, Past Chairman

Carla R. Dietrich, P.E., P.T.O.E.

Senior Transportation Engineer

Years with Michael Baker: 18
Years with Other Firms: 1

Degrees

B.S., 1997, Civil and Environmental Engineering, Carnegie Mellon University

Licenses/Certifications

Professional Engineer, Louisiana, 2010, 35480

Professional Traffic Operations Engineer, 2008, 2468

Professional Engineer, Pennsylvania, 2004, PE070655

Professional Engineer, Connecticut, 2003, PEN.0022832

General Qualifications

Ms. Dietrich is experienced in traffic engineering and transportation planning studies. She has served as a traffic task manager on various projects including conceptual engineering studies, corridor studies, feasibility studies, interchange justification reports, and traffic analysis in support of environmental documents. Ms. Dietrich is knowledgeable in the areas of traffic signalization, safety, complete streets, access management, bicycle and pedestrian design, and context sensitive solutions. Her technical expertise includes crash analysis, traffic simulation, capacity analysis including roundabouts and coordinated signal systems, queuing analysis, and trip generation analysis.

Experience

Annual Engineering and Architectural Consulting Services, Jackson County, Mississippi. *Jackson County Board of Supervisors.* Traffic Engineer. Participated in peer review of Traffic Impact Study. Michael Baker provides professional engineering and architectural services to the Jackson County Board of Supervisors and its various departments, as requested, under an annual master services agreement.

Appalachian Corridor H Environmental Impact Statement, Appalachian Highlands Region, Elkins, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Provided traffic analysis assistance. The Appalachian Corridor H is a 100 mile proposed four-lane highway intended to provide access from Interstate 81 in Northwestern Virginia through the rugged, mountainous terrain of West Virginia's Appalachian Highlands Region. Michael Baker was responsible for preparing the tiered Corridor H Supplemental EIS study. This consisted of a corridor-level study evaluation (Corridor Selection EIS) to determine the environmental and engineering constraints existing along 24 potential alternative corridors (Tier 1) and a follow-on Alignment Selection FEIS (Tier 2). Michael Baker also provided advanced preliminary engineering on the preferred alignment. Following the 1996 Record of Decision, the WVDOT and FHWA were sued in Federal District and Appeals Courts by a coalition of 13 environmental groups. Michael Baker provided lawsuit support for legal counsel during that period-project is now under construction and Michael Baker is providing environmental monitoring and engineering services.

Bikeway Development General Engineering Design, Columbus, Ohio. *City of Columbus.* Traffic Engineer. Provided transportation engineering support. Michael Baker is providing engineering and design services for the Columbus Bikeway Development project, a task order agreement that implements specific projects of the Columbus Bicentennial Bikeways Plan (BBP), which was developed in 2008. When fully implemented, the BBP will create a system of more than 580 miles of bikeway facilities city-wide. Michael Baker is providing preliminary engineering, final design, and public outreach for projects ranging from intersection improvements and bikeway accommodations, to corridor projects and off-street and on-street bicycle facilities.

Coalfields Expressway, McDowell, Wyoming, and Raleigh Counties, and Williamson and Bluefield, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Provided traffic engineering technical support. Michael Baker conducted a Purpose and Need Study for the Coalfields Expressway, a proposed four-lane highway that would span approximately 60 miles across three southern West Virginia counties (McDowell, Wyoming, and Raleigh), with the southern terminus extending into Buchanan County, Virginia.

CUY-90-14.90 EB Owner Support. *Richland Engineering Limited.* Traffic Engineer. Conducted traffic analysis of multiple scenarios using various analysis tools and participated in quality assurance. Michael Baker is a subconsultant to Richland Engineering, providing owner support services to ODOT in administering the Cleveland Innerbelt CCG2 contract. Michael Baker is the primary Traffic Management Plan (TMP) reviewer for ODOT.

CVAG Agreement 12-1-14. *Coachella Valley Association of Governments (CVAG).* Transportation Engineer. Responsible for preparing the transportation project prioritization study component of the study including participation in the transportation technical advisory sub-committee meeting process.

Derry Borough Bridge Replacement Environmental Services, Westmoreland County, Pennsylvania. *Pennsylvania Department of Transportation, District 12-0.* Transportation Engineer. Conducted Bicycle and Pedestrian Study to determine existing use and needs in the area. Michael Baker conducted background research and a Phase I archaeological and geomorphological assessment for the proposed Derry Borough Bridge Replacement Project, Derry Borough, Westmoreland County, Pennsylvania, for the Pennsylvania Department of Transportation Engineering District 12-0 in cooperation with the Federal Highway Administration. The bridge is a concrete structure that carries S.R. 217 over the active tracks of the Norfolk Southern (historically the Pennsylvania Railroad Mainline) high-speed railroad corridor and several local streets including West 2nd Street, Wineman Way, and West 3rd Street on the northwest and West 1st Street and Brown Way on the southeast. West Owens Avenue forms the northern project terminus while West 2nd Avenue forms the southern terminus. The Derry Borough Bridge provides an overhead crossing of the Norfolk Southern tracks, which run northeast-southeast through the center of Derry Borough. The proposed project activities involve demolition and replacement of the existing S.R. 217 (Leo Street/Y Street) bridge. The purpose of this project is to provide a safe and dependable vehicular and pedestrian crossing over the depressed railroad corridor. Yielding negative results, the Phase I field investigation was completed ahead of schedule and at a cost savings to the client. A negative survey report was produced and accepted on first draft submittal by the District and State Historic Preservation Office.

Donora-Webster Bridge Replacement Alternatives Analysis, Borough of Donora, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Transportation Engineer. Task manager for the traffic engineering component of the Donora-Webster Study. Responsible for overseeing data collection program, highway capacity analysis, and safety analysis.

Eastbound I-90 Central Viaduct Bridge Design, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Conducted complex Synchro traffic analysis and completed quality control review of traffic volume development. Michael Baker is providing design services for replacement of the existing eastbound I-90 Central Viaduct Bridge over the Cuyahoga River. Michael Baker will prepare a design report with preliminary drawings and sketches showing main girder, stringer, and floorbeam cross sections over the length of the bridge superstructure. Michael Baker will develop preliminary design of the delta girder superstructure, including the floorbeam and sub-stringer system, creating a 3D model to evaluate the effects of live load and thermal forces on the curved delta girder with sub-stringer system, perform a viaduct deck replacement evaluation, and develop substructure pier reactions from the refined structural model. Michael Baker will provide utility coordination and assist in facilitating a series of meetings to inform project stakeholders of the current project status, solicit input,

and establish the scope of services that will address project enhancements. Michael Baker will also perform a traffic study to determine the adequacy of the existing intersections and street system adjacent to I-90 in the Central Interchange area. Traffic conditions will be studied for each of several construction phases and for the Interim Condition at the completion of the project.

FAY-435.0.97. *Ohio Department of Transportation, Central Office.* Traffic Engineer. Provided technical oversight of traffic analysis.

General Design Open-End - Dist. 12-0. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Conducted traffic engineering analysis and pedestrian/bicycle considerations.

I-295 / Route 38 CED Improvement Project, Townships of Mount Laurel and Moorestown, New Jersey. *New Jersey Department of Transportation (NJDOT).* Traffic Engineer. Conducted quality check of traffic analysis. Michael Baker was responsible for roadway improvements for about 1.5 miles along Route 38 as well as about 1.5 miles along I-295. The roadway improvements include profile adjustments, roadway resurfacing, lane additions and reconfigurations, geometric improvements, as well as the associated lighting and drainage improvements.

I-35 Planning and Environmental Linkages Study, Austin, Texas. *Texas Department of Transportation.* Traffic Engineer. Responsible for traffic analysis. Michael Baker provided preliminary engineering, traffic analysis, modal analysis, and public and stakeholder outreach for the I-35 Future Transportation Corridor (FTC) Planning and Environmental Linkages (PEL) Study undertaken by the client's Austin District and Transportation Planning and Programming Division. The study offered an opportunity to define the purpose of and need for the FTC, determine what specific mode(s) would use the FTC, and identify segments of independent utility that would be the focus on subsequent National Environmental Policy (NEPA) studies. Michael Baker performed traffic demand modeling to evaluate FTC mode choice, evaluated the engineering feasibility of multiple alternatives, and developed environmental constraints mapping and resource technical reports. Michael Baker also developed a public involvement and agency coordination plan, coordinated with multiple stakeholders, and held nine public meetings over a seven month period.

I-55 Hernando. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for overseeing the traffic engineering analysis for existing, future no build, and future build analysis scenarios. Analysis conducted using Vissim and Synchro software included alternatives analysis of the Commerce Street Interchange.

I-55 Widening and Reconstruction from Relocated S.R. 304 to Church Road, DeSoto County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for traffic analysis of the I-55 corridor from SR 304 to Church Road. Analysis conducted for the I-55 mainline, including ramps and the local roadway signalized and stop-controlled intersections. Documented analysis findings and comparison of alternatives. Michael Baker provided engineering services, including preliminary and final contract plans, right-of-way appraisal maps, deeds, and individual parcel plats for the reconstruction of approximately 4 miles of I-55 from the relocated SR 304 Interchange to just south of the Church Road Interchange in Desoto County, MS.

I-564 Terminal Boulevard Interchange Justification Report, Norfolk, Virginia. *Virginia Department of Transportation.* Traffic Engineer. Participated in update of traffic analysis based on the latest version of Highway Capacity Software. Michael Baker provided engineering services for the development of an interchange justification report for an I-564 interchange at Terminal Boulevard. Michael Baker's services included the development of traffic simulation models, alternatives analysis, and report preparation.

I-90 Central Viaduct Innerbelt Bridge (CUY-90-14.92) Design-Build Procurement Support, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Provided traffic analysis technical support including intensive Synchro analysis and mitigation alternatives development. Michael Baker provided bridge type selection and preliminary and final engineering design services for the new Interstate 90/Central Viaduct Bridge in Cleveland, Ohio, crossing over the Cuyahoga River Valley. An extensive public involvement initiative was launched to determine a bridge type that satisfied both the residents of the area and the functional needs of the structure.

La Entrada Specific Plan, Coachella, California. *PSAV, LLC.* Traffic Engineer. Provided traffic analysis support. Michael Baker prepared the Delineation of Jurisdictional Waters for the 2,200-acre La Entrada Specific Plan Project, located in the City of Coachella, California. The La Entrada Specific Plan consists of a master planned residential community will include three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan.

Lakefront West - Corridor Planning Study, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Responsible for the traffic analysis of multiple alternatives in the potential conversion of the existing limited access facility to an urban arterial. Participating in public involvement program. Michael Baker provided engineering and environmental studies for the Lakefront West Corridor (West Shoreway SR2/USR 6/20) for transportation-related improvements adjacent to the city's lakefront. The project, which will connect the city's west side neighborhoods with the lakefront by creating multi-modal connections along the West Shoreway between West Boulevard and the Main Avenue Bridge, will increase access to Lake Erie; improve green space, biking, and pedestrian facilities; increase development potential; and provide low-speed connections. Michael Baker developed preliminary engineering alternatives for the eight access points, conducted traffic modeling and analysis, identified potential impacts to natural and human resources, developed a categorical exclusion environmental document, produced project mapping and preliminary engineering design documents, and reviewed public involvement activities and materials. The corridor plan was split into four phases for detailed design and three phases for construction.

Lakefront West Corridor, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Responsible for management of traffic analysis task and documentation of results. Michael Baker developed detailed design plans for the Lakefront West Corridor project, which includes the conversion of the West Shoreway (S.R. 2/U.S. 6/20), a six-lane controlled access highway, to a more pedestrian friendly facility, possibly a six-lane boulevard/byway. Baler designed the boulevard, including pavement rehabilitation, drainage, structure rehabilitation and replacement, retaining walls, multi-use path, signing, utility relocation and coordination, lighting, landscaping, and enhancements within the corridor.

Lakefront West Mainline, Cleveland, Ohio. Traffic Engineer. Responsible for management of traffic analysis task and documentation of results.

Lakefront West Ramps Design, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Provided traffic engineering support. Michael Baker is developing designs and construction plans for the Lakefront West Ramps project, which will include safety and operational improvements to the West 45th Street and the West 25th/West 28th Street interchanges with the West Shoreway and operational improvements to Detroit Avenue within the Lakefront West Corridor. Michael Baker is preparing preliminary and detailed designs and construction plans for roadway, drainage, traffic control, and maintenance of traffic; providing utility coordination, geotechnical testing, and subsurface utility engineering; and developing preliminary and detailed designs for bridges at West 28th Street over the West 25th Street ramp and West Shoreway over the West 25th Street ramps. Michael Baker is also developing a street lighting plan, preparing pavement recommendations,

updating the property owners list for field surveys, converting environmental commitments into appropriate notes for inclusion in the plans, developing a project schedule, and updating the construction cost estimate.

Lemon Grove Main Street Promenade, Lemon Grove, California. *KTU+A.* Traffic Engineer. Provided traffic analysis including the development of Synchro traffic analysis model. Michael Baker prepared preliminary engineering and design plans and performed an environmental analysis for an extension of the recently constructed Main Street Promenade within and along the existing public rights-of-way. Funded through a grant by the San Diego Association of Governments (SANDAG) Smart Growth Incentive Program (SGIP), the project is expected to enliven the corridor by providing a place that serves the recreational, convenience, and social activities of the city and enhances pedestrians' and bicyclists' experience.

Loop 1604 Environmental Assessment, San Antonio, Texas. *Alamo Regional Mobility Authority.* Traffic Engineer. Responsible for managing traffic analysis task included CORSIM software analysis, HCS, review of historic travel trends, crash analysis, and documentation of results. Michael Baker is providing an environmental assessment (EA) for the north side of San Antonio's outer Loop 1604 between SH 16 and IH 35 North. Michael Baker's scope of services includes environmental and engineering studies, public stakeholder involvement, education activities, and EA document production. Environmental services include project management, coordination, and administration. Engineering services include traffic analysis, mapping, data assembly and review, alternative development, preliminary schematics, preliminary drainage design, and right-of-way and utility coordination. Public involvement services include a comprehensive community engagement and public involvement plan, scoping meetings, community briefings and presentations, Community Advisory Group workshops, project website, social media program, intern education program, media support, project drop-in office, hotline, notices, announcements, and public hearing.

Loop 1604 Environmental Impact Study and Record of Decision, Bexar County, Texas. *Alamo Regional Mobility Authority.* Traffic Engineer. Provided traffic engineering support. Michael Baker is providing an Environmental Impact Statement (EIS) for the north side of San Antonio's outer Loop 1604 between US-90 West and IH 35 North. Pursuant to the National Environmental Policy Act (NEPA) and related laws and regulations, the EIS will examine and recommend both toll and non-toll strategies for addressing mobility and safety issues within this 35.5-mile corridor. Michael Baker's scope of services includes environmental and engineering studies, public stakeholder involvement, education activities, and the production of an EIS document. Environmental services included project management, coordination, and administration; and production of the Draft EIS, Final EIS, and Record of Decision. Engineering services included traffic analysis, mapping, data assembly and review, alternative development, preliminary schematics, preliminary drainage design, and right-of-way and utility coordination. Public involvement services include a comprehensive community engagement and public involvement plan, scoping meetings, community briefings and presentations, Community Advisory Group workshops, project website, social media program, intern education program, media support, project drop-in office, hotline, notices, announcements, and public hearing.

Millfair Road Bridge Preliminary Engineering and Environmental Studies, Erie County, Pennsylvania. *Pennsylvania Department of Transportation, District 1-0.* Task Manager. Participated in project as traffic analysis task manager. Responsible for overseeing data collection program, traffic volume development, capacity analysis, safety analysis, and results documentation. Michael Baker provided preliminary engineering and environmental studies for the elimination of two at-grade railroad crossings and construction of two new bridges carrying Millfair Road over the Norfolk Southern and CSX railroads. The project also included roadway and intersection improvements along Millfair Road from S.R. 20 to S.R.5. Michael Baker provided project management, prepared a purpose and need statement, and developed and analyzed preliminary alternatives. Michael Baker also performed

wetland delineation, performed a Phase I environmental site assessment of a known dump site in the project area, prepared a detailed noise study, identified coastal zones and historic architectural or archaeological resources that could be impacted by the project, prepared a Level 2 categorical exclusion document, and identified any potential Section 4(f) resources in the project area. Michael Baker prepared a line and grade submission for the preferred alternative, developed a preliminary right-of-way plan, collected and analyzed traffic data, and facilitated one general public meeting.

N-358R10, Multimodal Public Transportation Open-End Agreement, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Transportation Engineer. Provided documentation review. Michael Baker provided services for public transportation planning throughout the state under an open-end agreement for multimodal public transportation planning. Services included planning, architecture and engineering design, design management, financial assessments, quality assurance and quality control, policy development, construction management and inspection, agency coordination, budget and schedule monitoring, and grant administration services.

On-Call Contract for Office of Intermodal Planning and Investment. *Virginia Department of Transportation.* Traffic Engineer. Participated in plan development.

Pontis® Database Analysis, Hamilton, New Jersey. *New Jersey Department of Transportation (NJDOT).* Traffic Engineer. Provided traffic engineering support.

PTC Systemwide Plan. *McCormick, Taylor & Associates, Inc.* Traffic Engineer. Provided traffic engineering support.

Route 1 and 9 at Haynes Avenue Bridge Replacement and Interchange Reconfiguration, Newark, New Jersey. *New Jersey Department of Transportation (NJDOT).* Traffic Engineer. Conducted roundabout analysis using RODEL and SIDRA software packages for two (2) value engineering concepts. Responsible for documentation of analysis results. Michael Baker managed the reconfiguration of Route 1 and 9 interchange at Haynes Avenue and the replacement of bridge on Haynes Avenue over Waverly Yards. Michael Baker's services included roadway design, geotechnical design, structure design, highway lighting design, intelligent transportation system (ITS) design, and right-of-way plan development. Signing and pavement markings were designed in accordance with the MUTCD and standard NJDOT practices, and included freeway segments, ramps, local streets, and a proposed roundabout construction.

RT 1 & 9 HAYNES AVE CAM#8. *New Jersey Department of Transportation (NJDOT).* Traffic Engineer. Conduct traffic analysis for multiple roundabout configurations using SIDRA and Rodel software packages. Signing and pavement marking design included freeway segments, ramps, local streets, and a proposed roundabout construction.

S.R. 304 and McIngvale Road Interchange Environmental Assessment and Phase A Right-of-Way Plans, DeSoto County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for managing traffic analysis task including capacity analysis, queue analysis, and documentation of results. Michael Baker is performing an environmental assessment and preparing Phase A right-of-way plans for a proposed interchange at S.R. 304 and McIngvale Road. Michael Baker's services include data collection and analysis, traffic impact analyses, alternatives analysis, preparation of preliminary and final right-of-way plans, public involvement, and preparation of environmental assessment documentation.

Shawnee Parkway, Southern Counties, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Responsible for participating in traffic data collection and traffic analysis using Highway Capacity Software in support of the Purpose and Needs Study. Michael Baker conducted a Purpose and Needs Study for the Shawnee Highway, a proposed two-lane roadway spanning approximately 20 miles from Ashland to Ghent, across four southern West Virginia counties (McDowell, Mercer, Raleigh, and Wyoming).

SR-60/I-605 PSR-PDS. *WKE, Inc.* Traffic Engineer. Conducted peer review of Traffic Engineering Performance Assessment (TEPA).

Statewide Design Term Contract, Statewide, Virginia. *Virginia Department of Transportation.* Traffic Engineer. Participated in update of traffic analysis based on latest version of Highway Capacity Software. Michael Baker is providing engineering services for various interstate, primary, urban, and secondary road projects throughout the state under a six-year limited-services agreement. Projects involve all stages of development, from preliminary and final engineering design to engineering support during construction.

Transit Planning and Finance Consulting Services, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Provided traffic engineering support. Michael Baker is providing on-call consulting services to assist with technical planning and finance initiatives for Pennsylvania's public transportation urban and rural agencies, and efforts to facilitate improvements to the Amtrak Keystone Corridor. Michael Baker's services include transit development planning, transit agency performance reviews, facility feasibility studies, preliminary design, financial analyses, transit agency consolidations, public outreach and stakeholder coordination, Federal Transit Administration funding analysis, specialized public transportation studies, and other specialized studies to support the client's overall mission.

U.S. Highway 49 Improvements between Florence and the Scales Area, Rankin County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for traffic analysis, including level of service calculations and storage lane length estimates. Michael Baker is providing engineering services for roadway and bridge construction on U.S. 49 between Florence and the Scale Area just south of I-20. Michael Baker's services include the development of detailed design plans for bridges and roadway, including lighting, traffic control, signing, signalization, and intelligent transportation systems.

US222 Environmental Impact Statement. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Conducted analysis of roundabout alternatives utilizing SIDRA software.

Vrooman Road Bridge Replacement, Over the Grand River, Perry & Leroy Townships, Ohio. *Lake County, Ohio.* Traffic Engineer. Provided traffic engineering support. Michael Baker completed designated tasks through Step 3 of ODOT's Minor PDP in order to identify the Preferred Alternative for the Vrooman Road Bridge Replacement Project. Tasks performed were related to Roadway Design (including Roadway Geometrics, Maintenance of Traffic, Traffic Control, Drainage, etc.); Structural Analysis and Design; Geotechnical Engineering and Evaluation; Environmental Investigations and Environmental Document Preparation for the Lake County, Ohio, USA Engineer's Office.

WA#3 LP 1604 Intersection. *Texas Department of Transportation.* Traffic Engineer. Responsible for overseeing the traffic engineering CORSIM analysis. Loop 1604 interception project is part of the Loop 1604 schematic improvement project (from Bandera Road to Interstate 35 in San Antonio, Texas). Improvements include expanding Loop 1604 main lanes from a 4-lane to an 8-lane expressway that includes 4 new managed lanes; reconstruction of ramps, new managed connectors to IH-10, and widening of bridges and crossing structures. The 1604 Intersection project includes the addition of turnaround along the Loop 1604 frontage road facility.

West Ohio Street Bridge Replacement, Pittsburgh, Pennsylvania. *City of Pittsburgh, Pennsylvania.* Traffic Engineer. Responsible for management of traffic engineering task. Michael Baker is providing engineering services for the replacement of the West Ohio Street Bridge. Michael Baker's services include site investigation, preliminary bridge and roadway design, alternatives analysis, preparation of environmental and Section 4(f) analysis and documents, Section 106 historic resource analysis and documents, traffic studies, utilities coordination, public involvement, and final design.

WISCONSIN DOT FULL SERVICE DESIGN MASTER CONTRACT (WORK ORDER AGREEMENT). *Wisconsin Department of Transportation.* Traffic Engineer. Provided traffic engineering technical support including safety analysis.

Zoo Interchange Bridge Inspections and Analysis, Milwaukee, Wisconsin. *Wisconsin Department of Transportation.* Traffic Engineer. Responsible for determining traffic and safety user costs. Prepared project report documentation. Michael Baker performed in-depth inspections, including advanced structural analysis and material testing, for three concrete box girder bridges, and cursory inspections for three other bridges, located within the Zoo Interchange. For the concrete box girder bridges, Michael Baker performed in-depth bridge inspections, three-dimensional finite element analyses, and load ratings; and proposed numerous rehabilitation and/or replacement alternatives. This high-profile project was completed on an aggressive schedule.

Transamerica Corridor Feasibility Study, Beckley, WV, Virginia Beach, Virginia. *Virginia Department of Transportation.* Civil Associate. Assisted with the traffic analysis for the proposed corridor across the Commonwealth of Virginia. Conducted existing and future traffic analysis in addition to a crash data analysis of the entire corridor. Prepared technical documentation for inclusion in project reports. The TransAmerica Corridor Feasibility Study was a transportation study that evaluated a 350-mile corridor in two States impacting more than twenty (20) jurisdictions and local governments.

Broad Street Festival Traffic Study, Richmond, Virginia. *McKinney and Company.* Civil Associate. Responsible for reviewing traffic analysis and documentation of recommendations. Michael Baker was hired to conduct a comprehensive study documenting the traffic impacts associated with the proposed development of the Broad Street Festival Shopping Center in western Henrico County, Virginia. The project involved County coordination, data collection, impact determination and recommended traffic improvements.

Virginia DOT Transportation and Conformity Analyses I, Richmond and Hampton Roads, Virginia. *Virginia Department of Transportation.* Civil Associate. Responsible for participating in traffic data collection program across the City of Richmond, Henrico County, Hanover County, and Chesterfield County. Michael Baker staff performed 1995-1999 transportation/air quality modeling for TIPs and LRPs for these two areas involving 3 metropolitan planning organizations, 4 transportation planning models, and several area portions not included in network transportation models.

Commonwealth Centre Traffic Study, Richmond, Virginia. *Christian & Barton, L.L.P.* Civil Associate. Participated in traffic data collection, trip generation analysis, capacity analysis, and traffic study. Michael Baker prepared a traffic impact study for a proposed commercial development in Richmond, Virginia.

Southerlyn Property Traffic Study, Richmond, Virginia. *Michael E. Doczi & Associates.* Civil Associate. Responsible for coordinating traffic data collection effort, conducted traffic analysis and impact determination, and provided recommended traffic improvements. Michael Baker was hired to conduct a comprehensive study documenting the traffic impacts associated with the proposed development of the

Southerlyn mixed-use property in eastern Henrico County, Virginia. The project involved County coordination, data collection, impact determination, recommended traffic improvements, and public involvement.

Piney Green Road Corridor Plan, Jacksonville, North Carolina. *Kubilins Transportation Group, Inc.* Civil Associate. Participated in traffic analysis and documentation. Under contract to another firm, Michael Baker provided data collection, traffic engineering, transportation planning, traffic simulation, safety analysis and public involvement services for a study of the proposed widening of a two-lane urban minor arterial that is seven miles in length and located in Jacksonville North Carolina.

Short Pump Town Center, Richmond, Virginia. *Forest City Commercial Group.* Civil Associate. Assisted with the analysis and documentation of the potential traffic impacts to this proposed mixed-use development located in western Henrico County. Michael Baker was hired to conduct a comprehensive study documenting the traffic impacts associated with the proposed development of the Short Pump Town Center Mall property in western Henrico County, Virginia. The project involved County coordination, data collection, impact determination, recommended traffic improvements and public involvement.

Route 37 Corridor Study, Winchester, Virginia. *Frederick County, VA.* Civil Associate. Responsibilities included CORSIM analysis of the Route 37 interchanges with I-81. Michael Baker prepared corridor studies, an EIS, permits, roadway design, evaluations of environmental conditions (including aquatic, terrestrial, cultural human and recreational resources), traffic and economic development projections, and public involvement programs.

S.R. 0019, Section A21 West End Improvement Project – Advanced Contract Norfolk Southern Railroad Bridge Design, Allegheny County, Pittsburgh, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Responsible for participating in development of detour plan. Michael Baker prepared environmental documentation and performed design and construction phase services for a new overpass railroad bridge that provides for the direct linkage of S.R. 0019–S.R. 0051 in Pittsburgh's West End with the West End Bridge and expedites vehicular travel to and from the city's downtown section and points east. The bridge is the keystone of the West End Improvement Project and integral to achieving the goals of relieving traffic congestion, accommodating forecasted travel demand, and enhancing safety in the S.R. 0019 corridor.

Phases I, II, and III Cultural Resource Investigations, Appalachian Corridor H Highway (Mainline), Hardy, Grant, Tucker, and Randolph Counties, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Traffic Engineer. Provided traffic engineering technical support. Michael Baker has performed cultural resources investigations on approximately 216 km (134 mi) of highway right-of-way for the Appalachian Corridor H Project, located in east-central West Virginia. The project extends from Elkins, West Virginia, eastward to the West Virginia/Virginia state line, bisecting portions of Randolph, Tucker, Grant, and Hardy counties, and traversing portions of both the Appalachian Plateaus and the Ridge and Valley physiographic provinces.

Southeastern Parkway and Greenbelt, Chesapeake, Virginia. *Virginia Department of Transportation.* Civil Associate. Provided traffic engineering technical support. The 21-mile Southeastern Expressway, beginning at Route 44 in the City of Virginia Beach and ending at the I-64 and I-464 interchange in Chesapeake, Virginia, provides traffic relief in these rapidly expanding communities. The project also facilitates existing and proposed land use, transportation, economic development and emergency evacuation goals for the southside Hampton Roads area.

Main Street Bridge Replacement, S.R. 8, Butler, Pennsylvania. *Pennsylvania Department of Transportation, District 10-0.* Traffic Engineer. Responsible for conducting traffic analysis for the bridge replacement and proposed detour using Synchro. Participated in final design of three traffic signals associated with the planned replacement of the Main Street Bridge in Butler, Pennsylvania. Michael Baker was responsible for the final design

of a bridge replacement on a new alignment. Total project length is 4,600 feet, including an eight-span dual structure of curved steel girders with a total length of 1,200 feet.

I-95/I-64/I-195 Feasibility Study, Richmond, Virginia. *Virginia Department of Transportation.* Civil Associate. Assisted with the data collection and traffic analysis being conducted with this study. Traffic analysis of the existing conditions included an origin-destination survey, travel speed collection and analysis, and a crash data analysis. Tools such as HCS and CORSIM were utilized in this study. In addition, an extensive citizen involvement effort was incorporated in which Ms. Dietrich presented interim technical findings. This study addressed one of the largest and most heavily traveled directional interchanges in the Richmond metropolitan area. This 18 month study involved traffic data collection, traffic analysis, travel demand modeling, mapping, conceptual plan development, impact assessments, cost estimates, and a public involvement program.

Danville Expressway, Pittsylvania County, Danville, Virginia. *Virginia Department of Transportation.* Civil Associate. Provided traffic engineering technical support. Michael Baker was responsible for final design for the Danville Expressway, a four-lane divided limited access expressway on the northeast side of Danville. Plans involved limited access design and interchanges. The project was approximately nine miles long and included relocation of Route 360 as a connector street and the construction of the extension of Franklin Turnpike to serve as an interchange with the Danville Expressway.

Lynnhaven/International Parkway Intersection Improvements, Virginia Beach, Virginia. *City of Virginia Beach, Virginia.* Traffic Engineer. Provided traffic engineering support. Project included the reconstruction of Lynnhaven Parkway/International Parkway/East Mall Drive intersection with improvements to five intersections, their approaches, and highway and roadway segments between several intersections. Intersection improvements included design of roadway lanes, drainage, traffic signal landscape plans, and pavement markings.

I-81 Improvement Project, Bristol, Virginia. *Virginia Department of Transportation.* Civil Associate. Provided traffic analysis assistance. Michael Baker was responsible for conceptual highway and bridge design and traffic engineering associated with the widening of a 15 mile segment of I-81 north of Bristo.

S.R. 22, Koez Access Study, Hollidaysburg, Pennsylvania. *Pennsylvania Department of Transportation, District 9-0.* Traffic Engineer. Responsible for determining the traffic impacts of the potential redevelopment of over 150 acres of industrial property designated as a Keystone Opportunities Enterprise Zone (KOEZ). Also responsible for conducting traffic analysis, alternatives development and analysis, and documentation of results. Michael Baker conducted an access feasibility study for a Keystone Opportunities Enterprise Zone site in Hollidaysburg, Pennsylvania. The site housed an abandoned railroad car shop and rail yard. Michael Baker conducted detailed traffic studies in the site area and projected traffic based on possible uses for the site.

Hickory Street Bridge, S.R. 3005, Section B00, (over the Allegheny River), Warren, Pennsylvania. *Pennsylvania Department of Transportation, District 1-0.* Civil Associate. Assisted with the traffic analysis of the proposed bridge replacement. Coordinated the data collection effort that included turning movement counts at fifteen signalized intersection and four stop-controlled intersections, as well as an origin-destination study. Conducted the capacity analysis using HCS and Synchro software packages. Michael Baker designed a replacement for the Hickory Street Bridge. The original bridge, which carried S.R. 3005 over the Allegheny River, was a four-span, concrete arch bridge approximately 500 feet long. It served as a major community connector, linking businesses on the north side with neighborhoods on the south side of the Allegheny River. Built in 1917, the bridge was structurally deficient and functionally obsolete, and was closed to pedestrian and vehicular traffic. The goal of this project was to design a bridge replacement that satisfied community expectations by replicating the aesthetics of the original structure, and also met the state's funding and maintenance criteria.

North-South Expressway, Location and Environmental Study, EIS/ROD, Caddo Parish, Louisiana. *Louisiana Department of Transportation and Development (LADOTD).* Civil Associate. Responsible for preparing Point of Access Study for the proposed North-South Expressway Interchange with I-220 that included traffic analysis and development of conceptual signing plan. Study addressed FHWA requirements. Michael Baker conducted a preliminary engineering and environmental study of the North-South Expressway in Caddo Parish, Louisiana for the Louisiana Department of Transportation and Development. The proposed highway will be an interstate facility on new location, approximately 56 kilometers (35 miles) in length, between I-220 in Shreveport, Louisiana, and the Arkansas state line.

Old Fannin Road Environmental Study, Environmental Assessment 3-Lane to 5-Lane, Flowood, Mississippi. *Rankin County Board of Supervisors.* Traffic Engineer. Responsible for the traffic analysis for the proposed widening from 3 lanes to 5 lanes. Completed documentation of findings. Michael Baker completed an Environmental Assessment and documentation for 2.62 miles of roadway widening from 3-lanes to 5-lanes.

Cranberry Area Transit Study, Cranberry Township, Pennsylvania. *Southwestern Pennsylvania Commission.* Traffic Engineer. Responsible for participating in the public involvement program associated with this project, including public open house meetings and steering committee meetings. This project was the plan for a start-up transit system in the Cranberry Area. A combination of express bus, bus rapid transit, and local shuttle was recommended. Capital and operating budgets were developed, including a pilot program.

Moorefield Bypass, Moorefield, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Provided traffic engineering technical support. As part of this project, Michael Baker prepared a Purpose and Need Study to construct an approximate 5-mile roadway to serve as a bypass of the center of Moorefield in Hardy County, West Virginia. The project was developed to address the region's increasing transportation demands and growing traffic safety concerns.

Shepherdstown Bridge, Jefferson County, West Virginia, and Washington County, Maryland. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Responsible for participating in traffic data collection effort including origin-destination study. Michael Baker was selected by the West Virginia Division of Highways (WVDOH) to provide all environmental and engineering services for the replacement of the James Rumsey Bridge. The bridge is a historic structure of Wichert Truss design originally constructed in 1937. It is listed on the National Register of Historic Places. The James Rumsey Bridge carries WV Route 480 and MD Route 34 vehicular traffic over the Potomac River. The bridge currently has sidewalks on both sides that carry pedestrians and bicyclists. The bridge also crosses over the C&O Canal National Park and National Register listed C&O Canal on the Maryland side. The town of Shepherdstown, West Virginia lies on the west side of the bridge. The replacement of the bridge is necessitated by its rapidly deteriorating condition. The AASHTO LRFD Bridge Design Specifications were used for this bridge design.

U.S. 82 from U.S. 49N to MS 7N Planning/Traffic Study, Greenwood, Leflore County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for traffic analysis of the U.S. 82 corridor from U.S. 82 Bypass to U.S. 49. Analysis included the evaluation of multiple alternatives to address projected deficiencies. Michael Baker provided professional and engineering services performing a traffic study of possible alternatives for the reconstruction of the existing U.S. Highway 82 Bypass in Greenwood from U.S. 49Nto MS 7N.

Bicycle / Pedestrian Planning, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Assisted with preparing and conducting a training module on the use of the Planning and Programming, Scoping, and Final Design checklists which are included in the PENNDOT design manual. Topics addressed included the type and location of the facility required, crossing distances, pushbutton accessibility,

sidewalk grades and cross-slope, curb cuts, vertical clearances, utility location, and bicycle safe rumble strips. Michael Baker teamed with URS Corporation to provide statewide assistance in bicycle and pedestrian planning to the Pennsylvania Department of Transportation (PENNDOT) Central Office. Michael Baker's primary role on the project was the development and implementation of a training program for using bicycle/pedestrian checklists that were recently made part of PENNDOT's Design Manuals.

Saltillo, MS Signal Project, Saltillo, Lee County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for the development of a Synchro traffic simulation model for use in the analysis and design of five traffic signals along MS Highway 145. Oversaw traffic analysis and prepared analysis documentation. Michael Baker provided professional engineering services for traffic signal plans and permanent signing plans for the U.S. Highway 45 and MS Highway 145 bypass in Saltillo, MS. The project included the design of five (5) new traffic signals located on MS Highway 145, at the intersection with U.S. Highway 45.

West Shoreway at 3rd, 6th, and 9th, Cleveland, Ohio. *Cuyahoga County.* Traffic Engineer. Developed build condition traffic projections and provided technical review of Synchro software analysis. Oversaw report documentation. Michael Baker prepared a traffic analysis for a proposal to create three at-grade intersections on the Downtown Shoreway in Cleveland, Ohio. The Shoreway is a limited access freeway along the Lakefront, with interchanges at West 6th Street and West 3rd Street. The analysis showed that extreme peak hour congestion would occur at the newly created intersections under two studied alternatives unless approximately 50% of the peak hour through traffic on the Shoreway was diverted away from the proposed intersections.

S.R. 0018 Study, Harrisburg, Pennsylvania. *Pennsylvania Department of Transportation, District 12-0.* Traffic Engineer. Responsible for the development of Needs Statement, traffic analysis of existing and future conditions, development of alternatives and documentation of findings. Michael Baker performed a Needs and Feasibility Study for improvements to S.R. 18, between US 22 and S.R. 50 in Washington County, Pennsylvania. The work was performed as a task order under Michael Baker's Open End contract for Engineering/Environmental Services in District 12-0.

I-55 Church Road Interchange - Traffic Analysis, DeSoto County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for conducting feasibility study of multiple interchange configurations for redesign of existing interchange. Tasks included operating conditions analysis, comparison of alternatives, and documentation of results. Michael Baker provided professional engineering services in accordance with Master Contract for Traffic Analysis, DeSoto County, Mississippi. Michael Baker submitted a *Draft Traffic Report for Interstate 55 and Church Road Interchange* to MDOT in May 2004. After reviewing the report, MDOT requested that additional analysis be done and the report revised accordingly.

Open-End Transportation Planning Contracts, Southwestern, Pennsylvania. *Southwestern Pennsylvania Commission.* Traffic Engineer. Responsible for participating in the Prestley Street Study, which included the analysis of multiple alternatives that address transportation system upgrades and improvements to vehicular access. Michael Baker provided transportation planning services through three successive three-year, open-end contracts. Michael Baker's staff served as an extension of the client and provided transportation planning, traffic engineering, regional planning, and public involvement services. The client must ensure that a responsible, well-planned, fiscally constrained transportation system improvement plan is produced for Pennsylvania's western counties.

S.R. 82 at 130th, North Royalton, Ohio. *Cuyahoga County.* Traffic Engineer. Coordinated and provided technical review of Synchro traffic analysis. Analysis conducted for existing condition, future No-Build condition, and eight alternatives. Participated in alternatives development. Responsible for results documentation. Michael Baker

prepared a traffic analysis for the congested and complex intersection of S.R. 82, 130th Street and Edgerton Road in North Royalton, Ohio. A total of eight alternatives were studied, ranging from simple signal timing changes up to significant widening of the roadways entering the intersection. Ultimately, two of the alternatives were presented to the mayors of North Royalton and Strongsville, and it was concurred that the long-term solution was more cost-effective.

Downtown Euclid Transportation and Redevelopment Plan, Euclid, Ohio. *City of Euclid, Ohio.* Traffic Engineer. Responsible for overseeing the traffic analysis that was utilizing Synchro traffic simulation software. Involved in the development and comparison of transportation system improvement alternatives. Michael Baker conducted the Transportation Analysis in support of the Downtown Euclid Redevelopment and Master Plan. The study developed a Master Plan for transportation and land use improvements for an area encompassing approximately 10 intersections in Downtown Euclid. Michael Baker's role included collecting traffic data, developing traffic forecasts through Year 2030, analyzing existing and future traffic conditions, presenting traffic models at public meetings, and supporting the development of a locally preferred package of recommended improvements.

Jackson Street/Shamrock Boulevard/Renaissance Parkway Traffic Analysis, Painesville, Ohio. *City of Painesville, Ohio.* Traffic Engineer. Responsible for conducting detailed traffic volume development and traffic analysis using Synchro software. Michael Baker prepared a traffic analysis of the intersection of proposed Realigned Jackson Street and Shamrock Boulevard in Painesville, Ohio. The purpose of the analysis was to determine the future geometric requirements of the intersection in terms of the number of lanes and the length of any required turning lanes. Projected traffic volumes were entered into a Synchro TM model of the area to determine levels of service, number of lanes, required turning lane lengths, and projected lengths of traffic queues at the intersection.

Appalachian Corridor H - B. Williams Bottom #1 Site, Phase II and III Data Recovery, Hardy County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Traffic Engineer. Provided traffic engineering support. Michael Baker conducted Phase II and Phase III Data Recovery excavations at the B. Williams Bottoms #1 site in Hardy County, West Virginia. The site was identified in 1998 as part of the Phase I survey for the Corridor H Middle South Branch Valley Avoidance Alternative. The results of the Phase I suggested the prehistoric site might be eligible for inclusion on the National Register of Historic Places. In order to assess the potential eligibility of the site, Michael Baker conducted Phase II investigations in the spring and summer of 2000. The Phase II revealed that the site contained in-situ cultural features associated with a limited discrete prehistoric occupation of the site during the early Middle Woodland Period.

Appalachian Corridor H - Middle South Branch Valley Alternative, Phase I Archaeological Survey, Hardy County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Traffic Engineer. Provided traffic engineering support. Michael Baker is conducting a Phase I-II archaeological study of an approximately 9-mile long, 300- to 1000-foot wide new highway corridor located in Hardy County, West Virginia. Michael Baker is completing the project as part of the on-going cultural resource investigations for the Appalachian Corridor H project. Field testing of the Middle South Branch Valley corridor began in October of 1998 and has been completed. The corridor encompasses a variety of topographic settings including uplands and stratified alluvial floodplains along the South Branch of the Potomac River and its tributaries. Michael Baker identified over 70 archaeological sites within the project corridor.

Cuyahoga County 2004/05 General Engineering Services Task Orders, Cleveland, Ohio. *Cuyahoga County.* Traffic Engineer. Provided traffic engineering support. Michael Baker performed roadway and drainage

design, bridge and structural design, bridge inspection, traffic control and signal design, maintenance of traffic design and review, highway lighting design, plan review, aerial mapping, surveying services, traffic studies, and right-of-way plan development and acquisition services as part of this general engineering services contract.

Transportation Funding and Reform Commission, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Assisted with the review of the Port Authority of Allegheny County. Governor Rendell's Executive Order 2005-1 has tasked a newly designated Transportation Funding and Reform Commission with identifying opportunities for efficiencies, reforming business and procurement practices, and creating a transportation network based on future needs and not on past history should underscore the long-term solution. The Michael Baker Team assisted the efforts of the Commission by conducting investigation and research into infrastructure needs, financial options, governance issues, and areas of performance efficiencies. The work program has been broken into four focus areas: public transportation, state owned highways and bridges, transportation-related growth and development issues, and outreach, expert input and site visits.

Starpointe Mixed-Use Development Master Plan, Washington County, Pennsylvania. *Fourth River Development LLC.* Traffic Engineer. Responsible for traffic engineering component of the project including participation in charrette and public outreach program. Completed traffic management plan for the development. Michael Baker teamed with another firm to form a multi-disciplinary team that developed a master plan for the re-use of over 1,000 acres of vacant brownfield land in Washington County, Pennsylvania. The design for this project incorporates an ecologically friendly approach to the development of a mixed-use business, industrial, and commercial center. The project attempt to mitigate the impacts of the development through the use of low impact design elements and ecologically sensitive site planning. The project involved the preparation of a "Smart Growth" mixed use master development plan for the 1200 acre site.

S.R. 6 Environmental and Location Study from Clarksdale to Batesville, Coahoma, Quitman, and Panola Counties, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Conducted traffic analysis in support of environmental studies. Michael Baker provided professional engineering services for performing traffic studies, environmental studies and analysis, and conceptual engineering design studies of SR 6 in Coahoma, Quitman and Panola Counties from SR 61 near Clarksdale to Batesville, approximately two (2) miles east of I-55.

Preliminary Design of the Northern Intermodal Terminal, Houston, Texas. *Metropolitan Transit Authority of Harris County.* Traffic Engineer. Provided traffic engineering support. Michael Baker was responsible for the following: preliminary design of streets, bridges, stormsewer system, detention, floodplain mitigation, preparing a detailed traffic analysis for the project, and preparing construction drawings for streets and bridges to serve development of the intermodal terminal site. Construction elements of the project included two railroad overpass bridges and other bridges through the site, and a major LRT post-tensioned bridge 1,300 feet long. Other construction elements include four storm sewer systems, 35-acre feet of site fill, and excavation in White Oak Bayou for floodplain mitigation.

Houston Metro Northern Intermodal Transit -Transportation and Traffic Study and Conceptual Designs, Houston, Texas. *Metropolitan Transit Authority of Harris County.* Traffic Engineer. Conducted preliminary traffic analysis of potential roundabout scenarios. Michael Baker assisted in the design of a multimodal center which is located immediately north of Downtown Houston. Transportation modes included bus, LRT, BRT, private auto and bus, commuter rail, Amtrak, bicycle, and pedestrian connections. Michael Baker led the planning and design of traffic, roadway, drainage, and floodplain mitigation.

S.R. 0079, Section A23, I-79 Missing Ramps Intelligent Transportation System Plan Development, Collier and Robinson Townships, Pittsburgh, Pennsylvania. *Pennsylvania Department of Transportation, District 11-*

0. Transportation Engineer. Participated in Traffic Impact Study development. Michael Baker prepared a plan for the addition of new and relocation of existing intelligent transportation system (ITS) devices as part of the S.R. 0079, Section A23, I-79 Missing Ramps project, which established a direct link between I-79 and the Pittsburgh International Airport. Michael Baker coordinated the ITS design to accommodate anticipated requirements for the future regional system. Michael Baker's plan includes the installation of variable message signing and closed-circuit television cameras, relocation of fiber-optic cable and junction boxes, addition of a new highway advisory radio location, and integration of ITS infrastructure with the client's traffic management center.

S.R. 2 Improvements (LAK-2-0.00), SLM 0.00 to SLM 3.33, Lake County, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Responsible for preparation of Interchange Modification Study for the SR 2 Interchange with Lloyd Road. Documentation of analysis addressed ODOT and FHWA requirements. This final design project consists of environmental documentation, roadway improvements, and bridge repairs for 3.33 miles of S.R. 2 from the Lake County line to S.R. 91. Project includes the addition of new noise barriers, new lighting, new guardrail, and drainage improvements. The noise wall design will incorporate aesthetic details as determined from the public involvement process involving local stakeholders.

S.R. 44 Corridor Study, Concord Township, Ohio. *Lake County, Ohio.* Traffic Engineer. Oversaw the development of a Synchro analysis traffic model that was utilized to analyze existing and future traffic projections. Involved in the development and analysis of various alternatives. Michael Baker prepared a long range transportation plan for the S.R. 44 Corridor in Concord Township, Ohio. The study area encompassed approximately 10 roadways and 20 intersections. The study included data collection, traffic forecasting, traffic analysis, accident analysis, bicycle-pedestrian planning, transit planning, conceptual roadway design, cost estimates, and development of a funding plan.

Shamrock Center Traffic Study, Painesville, Ohio. *Osborne Capital Group.* Traffic Engineer. Involved in the traffic analysis of the proposed Shamrock development. Provided on-call analysis services as needed. Michael Baker performed a traffic impact study estimating traffic to be generated during each of four phases of development for the site. The projected trips were distributed to the area roadway system and were used to develop recommended roadway and intersection improvements needed for each phase of development.

U.S. 30 Master Plan, U.S. 30 Corridor, Westmoreland County, Pennsylvania. *Smart Growth Partnership of Westmoreland County.* Traffic Engineer. Responsible for traffic engineering support for the Route 30 Master Plan development. Prepared Optimal Corridor Conceptual plan (transportation component of Vision Plan) as well as the transportation element of the final Master Plan. Participated in the public involvement process and coordinated project website development. Michael Baker provided traffic modeling and traffic engineering support for the development of a master plan for the 40-mile-long U.S. 30 corridor through Westmoreland County. Phase 2 of the study included the development of a demonstration plan for smart development for a site along U.S. 30, which included traffic and transportation improvements. The demonstration plan led to the development of an implementation plan for smart-growth strategies for the entire corridor.

Walgreens Site Development, Shaler Township, Pennsylvania. *Walgreens Company.* Traffic Engineer. Provided traffic analysis technical support. For this site development project, Michael Baker provided surveying services, geotechnical studies, traffic studies, environmental studies, subdivision plans, and civil site design services to support the construction of a new Walgreen's Store on a four-acre parcel of land located at the intersection of State Route 8 and Butler Plank Road in Shaler Township, Allegheny County, Pennsylvania. Michael Baker worked with the Blackstone Group (developer), Walgreens, and state and local officials on this site development project.

Update Journey of Light Feasibility Study, Muscat, Oman. *Journey of Light.* Traffic Engineer. Responsible for preparing traffic analysis, including trip generation calculations, and documentation of results. Michael Baker prepared a "site/project adapted" version of the Feasibility Study, altering the document to account for changes in the concept resulting from the shift from the original project in Qatar to the present target site in Muscat, Oman.

Pearl Road Transportation Study Traffic Analysis, Cleveland, Ohio. *Old Brooklyn Community Development Corporation.* Traffic Engineer. Oversaw traffic data collection and HCS analysis of Pearl Road corridor. Prepared documentation for inclusion in Master Plan. Michael Baker provided traffic operations analysis in support of the Pearl Road Transportation Study. Michael Baker analyzed the existing conditions (current lane configurations), and two future conditions that included lane reductions. Michael Baker also identified and evaluated opportunities for traffic signal coordination and other upgrades, and evaluated the appropriateness of creating designated traffic lanes and traffic calming measures along the corridor.

Outer Connector EIS, Fredericksburg, Virginia. *Virginia Department of Transportation.* Civil Associate. Responsibilities included the traffic analysis of nine alternative corridors associated with this controversial project. A MINUTP travel demand model of the region was used to determine traffic impacts of each alternative and HCS was used to analyze roadway operating conditions. Prepared data for use in air quality, noise, energy, and secondary and cumulative impact analyses. Prepared documentation of results for inclusion in DEIS. Michael Baker was selected by the Virginia Department of Transportation (VDOT) to conduct this study of the northwestern segment of a potential circumferential controlled-access roadway (approx. 12 miles) in the Fredericksburg metropolitan area. The study included the evaluation of multi-modal investment strategies to address anticipated transportation deficiencies in the year 2025. The major deliverable was an Environmental Impact Statement. The project was very controversial and the public involvement program established was as involved as any program ever undertaken by VDOT.

Cuyahoga County 2007-2009 General Engineering Services Contract. *Cuyahoga County.* Traffic Engineer. Conducted detailed traffic analysis for multiple task orders.

Environmental Baseline Study Data Refresh, 40 Land Ports of Entry Within the Continental U.S. *General Services Administration.* Traffic Engineer. Provided traffic engineering support. Michael Baker was tasked by the Department of Homeland Security, United States Visitor and Immigrant Status Indicator Technology (US-VISIT) Program, to perform an update ('refresh') of the Environmental Baseline Studies for 40 select Land Ports of Entry (LPOEs) previously performed in 2003. To complete this project, Michael Baker mobilized several teams to the border crossings throughout the country to collect and update the EBS data at the LPOEs. After collecting the data, it was incorporated into a GIS database and used to develop a comprehensive EBS Data Refresh report.

The Grand Parkway Corridor Study, Houston, Texas. *The Grand Parkway Association.* Civil Associate. Supported traffic engineering task. SH 99, Grand Parkway project consisted of four segments of independent utility (Segments E (15 – miles), F-1 (11 – miles), F-2 (12 – miles), and G (14 - miles) totaling 52-miles of new location Toll Road with intermittent Frontage Roads. Michael Baker's responsibilities included overall project management, overall document QA/QC, performing engineering and environmental studies, preparation of the Need and Purpose, Alternatives Analysis Section, perform and manage field investigations, data collection, and prepare draft and final EIS documentation in accordance with FHWA and TxDOT guidelines. Michael Baker prepared and circulated four concurrent Draft Environmental Impact Statements (DEIS); prepared and circulated four concurrent Final Environmental Impact Statements (FEIS); secured two Records of Decision (RODs) (Segment E and F-1) to date with Segments F-2 and G anticipated by winter 2009. Additionally, Michael Baker developed the Indirect and Cumulative Impact Study for a 305,000 acre Study Area; an Administrative Record for all eleven

Segments of the Grand Parkway including Segment E, F-1, F-2, and G; a GIS database for a 305,000 acre study area; agency comment tracking system; public comment tracking system; Public Hearing Video Presentations (15 to 20 minutes); comprehensive public outreach program that included a website, visualizations, renderings, open and transparent project information process, and resource agency workshops.

Regional Traveler Information Needs Analysis, Statewide, Pennsylvania. *Southwestern Pennsylvania Corp.* Traffic Engineer. Provided general project assistance.

S.R. 44 at Crile Road Alignment Study, Lake County, Ohio. *Concord Township Ohio.* Traffic Engineer. Responsible for traffic analysis component of Alignment Study that included Synchro traffic analysis and queuing analysis. Prepared documentation of results in study report.

Contra-Flow Analysis for I-55 and I-59, Lincoln & Pearl River Counties, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Participated in the Synchro analysis and documentation of results. Michael Baker performed an analysis of the contra-flow lane alternatives for both Interstate 55 (I-55) and Interstate 59 (I-59). The analysis included brief research of appropriate analysis methodology/software, analysis using HCS+ software, along with the Highway Capacity Manual (HCM) methodologies, to determine capacity, queue length, and delay times. Synchro7 software was used for simulation purposes.

U.S. 62 Bypass Environmental Assessment, Prairie Grove, Washington County, Arkansas. *Arkansas State Highway and Transportation Department.* Traffic Engineer. Responsible for the traffic analysis of the proposed U.S. 62 relocation. Analysis included a comparison of existing, future no-build, and future build alignment operating conditions. This project was a location and environmental study for the relocation of U.S. 62 around the town of Prairie Grove on new location in Washington County, Arkansas.

I-64 Widening Phase I and II, Chesapeake, Virginia. *Virginia Department of Transportation.* Civil Associate. Responsible for participating in traffic analysis of the existing facility and proposed alternatives using CORSIM software. Analysis included the evaluation of complicated weaving sections. Multi-phase contract provided certain engineering and technical services for the widening and upgrade of a section of I-64 in the City of Chesapeake. Under Phase I of this project, Michael Baker developed alternative alignment/widening schemes and provided conceptual design of I-64 between I-464 and Route 17 including interchange improvements and collector-distributor roadways. The mainline I-64 project length is approximately 5.7 miles.

Route 56 (Butterfield Road), Route 59 to Naperville Road (PTB 108/Item 38), Wheaton/Warrenville, DuPage County, Illinois. *Illinois Department of Transportation.* Transportation Engineer. Conducted traffic analysis and results documentation. Michael Baker provided preliminary engineering services (Phase I) for a 6.2 mile section of add-lanes reconstruction which included accident, capacity and geometric studies as well as full environmental studies including mitigation efforts in hazardous waste, 4(f) property, and wetlands. A full replacement of a bridge over a regional water feature as well as two culverts and extensive retaining wall.

Zoo Interchange Independent Assessment, Milwaukee, Wisconsin. *Wisconsin Department of Transportation.* Traffic Engineer. Responsible for determining traffic and safety user costs. Prepared project report documentation. Michael Baker performed a condition assessment of existing pavements and structures located within the Zoo Interchange Environmental Impact Statement study area. Activities included visual field inspections and review of existing inspection reports, bridge plans, shop drawings, and other data. Michael Baker provided an initial report evaluation and recommendations for further investigation.

El Mirage Road Design Concept Report and Environmental Assessment, El Mirage and Surprise, Arizona. *Maricopa County DOT.* Transportation Planner. Participated in alternatives development stage of the project. Responsible for coordination of context sensitive solutions component of the alternatives analysis focusing on community visioning. Conducted multiple meetings with key stakeholders to obtain input into the alternatives development. Michael Baker was responsible for a design location study and the preparation of 40% design plans for a regional transportation project in El Mirage, Arizona. The project involves the relocation of over 100 homes and numerous commercial properties and an extensive public involvement program.

Cedar-Fairmount Transportation for Livable Communities Initiative (TLCI), Cleveland Heights, Ohio. *City of Cleveland Heights.* Traffic Engineer. Oversaw traffic data collection and traffic analysis using Synchro simulation model. Michael Baker provided traffic engineering and public involvement services in support of this TLCI (Transportation for Livable Communities Initiative) project that looked at ways to enhance the Cedar-Fairmount District by better balancing the needs of all the roadway users, including pedestrians and bicyclists as well as motorists. City staff and members of the community worked with the consultant team to develop potential alternatives to enhance the roadway network. The project included modifications to the roadway geometrics, changes to the signal system, traffic calming, streetscape improvements, redevelopment of an existing site and evaluation of the associated traffic impacts

ITQ Training, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Responsible for participating in design exception training course development including preparation of training manual and program. Michael Baker developed and presented design-related training services for the client. Training services are defined as, but not limited to, course development and/or modification, training instruction (including Train the Trainer instruction), instructor training materials, student training materials, training facilities, and necessary equipment used in the training process. Michael Baker provided these professional training services and related services through the client's Bureau of Design that is responsible for developing training for the statewide Design Community.

Champion Creek – Smith Road Development District Traffic Study, Medina, Ohio. *City Architecture, Inc.* Traffic Engineer. Oversaw HCS traffic analysis of Existing and Future Condition. Prepared complex trip generation and trip distribution analysis. Michael Baker provided traffic engineering services for a Transportation for Livable Communities Initiative study for planning of the Champion Creek – Smith Road Development District. Michael Baker collected traffic volume data and conducted a future traffic capacity analysis to assess the feasibility of various transportation improvement alternatives and recommend traffic-related modifications and enhancements.

PRE FA HACKETTSTOWN TO#3.*New Jersey Department of Transportation (NJDOT).* Traffic Engineer. Conducted alternatives analysis including one-lane roundabout using SIDRA software and corridor reconstruction using Synchro.

Small Urban Area Transportation Plans, Various Locations, Virginia. *Virginia Department of Transportation, District 4.* Civil Associate. Responsible for managing plan development including short-term and long-term transportation goals for the Town of Lebanon as well as conducting or overseeing the traffic analysis for seven of the transportation plans. Study included analysis of operating conditions, safety issues, geometric constraints, and land use issues. Michael Baker prepared 43 Transportation Plans for small areas around the state that were not part of Metropolitan Planning Organizations (MPOs) and also developed travel demand models and initial MPO long range plans for two new MPOs. Roadway needs were the primary focus of the small urban area plans, but other modes were considered, particularly in the MPO plans. Extensive data collection and local coordination were

conducted in the development of each plan. Printed and web-based interactive GIS maps were developed for each plan.

Roundabout Open-End Contract Engineering Consulting Services, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Conducted roundabout analysis using SIDRA analysis software. Michael Baker provided engineering consulting services under a roundabout design open-end contract to support the client's roundabout program. Michael Baker's responsibility was to determine optimal design features, which involved inventorying roundabouts within Pennsylvania and evaluating the design-related advantages and disadvantages of each facility, determining the best practices for roundabout winter maintenance, evaluating proposed client and consultant roundabout designs, and providing developmental and policy support.

Geneva Sports Complex Traffic Study, Geneva, Ohio. *Roni Lee, LLC.* Traffic Engineer. Responsible for traffic analysis including capacity analysis, turn lane storage calculations, and traffic signal warrants. Michael Baker completed a preliminary traffic impact study for the proposed GaREAT Sports Complex. The proposed development will consist of a variety of land uses, centered around a substantial indoor/outdoor sports complex with additional uses including medical, office space, restaurants and hotel. The traffic study included trip generation, trip distribution, average daily traffic, peak hour traffic, and an assessment of the access driveway requirements for the site to apply for a driveway permit from the Ohio Department of Transportation (ODOT).

Loop 1604 Traffic Analysis, Bexar County, Texas. *Alamo Regional Mobility Authority.* Traffic Engineer. Responsible for managing traffic analysis task included CORSIM software analysis, HCS, review of historic travel trends, crash analysis, and documentation of results. Michael Baker conducted the traffic analysis as part of the environmental impact study (EIS) for Loop 1604 between I-35 and Hwy 90, a distance of approximately 36 miles. The analysis included determining the existing and future no-build conditions, and analyzing alternatives for the draft EIS. Michael Baker used qualitative and quantitative methods to screen out alternatives that did not meet the purpose and need of the draft EIS, and conducted detailed traffic analyses to compare the operational benefits of each remaining alternative.

Active Allegheny - A Comprehensive Bicycle and Pedestrian Transportation Plan, Allegheny County, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Transportation Engineer. Participated in the public involvement process and plan preparation. Michael Baker developed a comprehensive active transportation plan, Active Allegheny, to integrate walking, biking, and other human-powered transportation modes into the county transportation system. Michael Baker's services included background research, stakeholder coordination, a facilities inventory and analysis, identification of specific improvements, public outreach, and preparation of draft and final plans.

WO # 2 Traffic Scoping. *Greater Erie Industrial Development Corporation.* Transportation Engineer. Responsible for traffic engineering task management.

PIT ENV REEVAL ABP BLDG 300 T5. *Allegheny County Airport Authority.* Traffic Engineer. Responsible for conducting traffic analysis in support of future development sites.

I-90 Central Viaduct Westbound Innerbelt Bridge (CUY-90-14.92) Design-Build Request-for-Proposal Package Preparation, Cleveland, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Conducted complex Synchro analysis to determine potential mitigation during construction. Michael Baker provided program management and engineering services for the development of a value-based, design-build request-for-proposal package to construct a multimillion-dollar replacement of the I-90 Central Viaduct Westbound Innerbelt Bridge over the Cuyahoga River Valley in Cuyahoga County.

Engineering and Environmental Services for Widening of S.R. 57 (LOR-57-19.42) from the Ohio Turnpike to I-90, Elyria, Ohio. *Ohio Department of Transportation, District 3.* Traffic Engineer. Conducted update of Synchro traffic analysis of 5 intersections along LOR-57 corridor. Responsible for documenting results of analysis. Michael Baker performed roadway preliminary engineering services and environmental analysis as a subconsultant on a project to widen S.R. 57 in Elyria, Ohio, from the Ohio Turnpike to I-90. Michael Baker's tasks included a best management practices feasibility study, wetland delineation, interchange design, traffic engineering, and drainage system analysis and design.

East-West Corridor Environmental Assessment, Bossier Parish, Louisiana. *Northwest Louisiana Council of Governments (NWLCOG).* Traffic Engineer. Responsible for the traffic analysis associated with the Environmental Assessment and Purpose and Need Statement. Coordinated traffic data collection program and oversaw traffic analysis of Existing, No-Build, and Build conditions for two (2) alternative alignments. Prepared traffic technical report. Michael Baker provided preliminary engineering and National Environmental Policy Act and environmental documentation for a new eight-mile, two-lane urban collector with right-of-way clearance for possible expansion to a four-lane boulevard. The purpose of the new facility was to alleviate congestion and reduce travel delays along the other roadways that link the rapidly growing residential areas of Bossier Parish with the Shreveport and Bossier City employment centers.

Work Order 3 – Inventory. *Greater Erie Industrial Development Corporation.* Project Manager. Responsible for overseeing inventory of existing conditions near a potential development site. Coordinated traffic data collection and traffic analysis. Provided client coordination.

S.R. 136 Ginger Hill Engineering Study, Monongahela, Pennsylvania. *Pennsylvania Department of Transportation, District 12-0.* Traffic Engineer. Responsible for review of crash analysis and preparation of HCS traffic analysis for S.R. 136 in the area of Ginger Hill Road. Prepared project report documenting results of multi-discipline effort. Michael Baker performed an engineering study to improve safety and operations on S.R. 136 through the village of Ginger Hill, including intersections with S.R. 917 and Ginger Hill Road. Michael Baker developed and analyzed three alternatives that led to the selection of a recommended alternative that was presented to the public and used by the department to program future improvements.

S.R. 28, Sections A09/10 Phase II, Environmental, Pittsburgh, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Provided traffic engineering support. Michael Baker performed the rehabilitation design of a two-mile section of S.R. 28 to improve traffic flow and enhance roadway safety. The project included the design of a grade-separated interchange at 31st Street and new on-ramps and off-ramps for continuous main line flow, as well as the addition of median barrier. Traffic flow is further expedited by the elimination of the main line traffic signals.

S.R. 79, Section A23, I-79 Missing Ramps, Collier and Robinson Townships, Pittsburgh, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Provided traffic analysis technical support. Michael Baker provided engineering services for the addition of two direct-connection ramps at the interchange of I-79 and S.R. 22/30 west of Pittsburgh. Michael Baker's services for the so-called "missing ramps" project included roadway and bridge design, drainage design, aerial mapping, traffic analysis, signal design, lighting design, intelligent transportation system design, complex maintenance and protection of traffic plans, Phase I and II environmental site assessments, and wetland and stream mitigation.

Work Order 4 - Break Analysis. *Greater Erie Industrial Development Corporation.* Project Manager. Responsible for identifying traffic operation thresholds which can be applied to a potential site development, specifically the

amount of operations which can be built prior to implementing roadway improvements. Provided client coordination.

I-10 and Cedar Lake Road Interchange Improvements, Harrison County, Mississippi. *Mississippi Department of Transportation.* Transportation Engineer. Responsible for conducting traffic analysis and documentation of results. Michael Baker developed final design plans for interchange improvements for the I-10 and Cedar Lake Road interchange to address existing and projected traffic operational issues. Michael Baker provided field surveys, performed a traffic analysis of the interchange based on volumes, and studied the interchange exit ramps to improve existing queuing conditions. Michael Baker's designs revised the exit ramps from tapered exits to parallel exits; widened the ramps to have two lanes providing dual lefts for the westbound exit and dual rights for the eastbound exit. The designs also revised Cedar Lake Road to accommodate the changes to the ramps and upgraded existing signals to accommodate new intersection improvements.

Warner Road - Garfield Boulevard Connector and Trailhead Study, Garfield Heights, Ohio. *Cleveland Metroparks.* Traffic Engineer. Oversaw HCS traffic analysis of existing and future conditions. Conducted trip generation analysis. Michael Baker provided traffic engineering and conceptual roadway design services as part of a consultant team to examine the feasibility of modifying Garfield Boulevard to accommodate a pedestrian and bicycle trail. The project involved reducing the four-lane Garfield Boulevard to two lanes and using the right-of-way to establish a trail connection between a new trail head at the west end of the roadway and the Garfield Park Reservation. Michael Baker collected peak-hour traffic volume counts at three signalized intersections along the Garfield Boulevard corridor to evaluate existing and project future traffic conditions and the impacts of potential changes in roadway configuration.

Hoan Bridge Bicycle / Pedestrian Facility Study, Milwaukee, Wisconsin. *Wisconsin Department of Transportation.* Transportation Engineer. Conducted technical review of Bicycle and Pedestrian Study. Michael Baker conducted an evaluation of bicycle/pedestrian facilities between the Bay View Neighborhood and Downtown Milwaukee. Michael Baker reviewed existing facilities; evaluated the feasibility of alternatives of a shared-use path along I-794, specifically along the Hoan Bridge; and produced a report summarizing the findings.

Transportation and Streetscape Plan, Painesville, Ohio. *City of Painesville, OH.* Traffic Engineer. Oversaw Synchro simulation model analysis for Existing and Future conditions. Participated in trip generation analysis. As part of a consultant team, Michael Baker provided multimodal planning and public involvement services to develop a transportation and streetscape plan for downtown Painesville, carrying forward the recently completed Downtown Master Plan to support future development and the creation of a true urban, walkable, bikable, mixed-use district. Michael Baker completed a traffic study that included collection of traffic volume data, trip generation projections, analysis of existing and anticipated future traffic conditions, and development of conceptual improvements to the roadway network, incorporating modifications to the roadways and intersections. The project team developed streetscape and transportation improvements based on a functional analysis of the transportation network as well as preferences expressed by the community through the public involvement program.

E.22nd Street Transportation and Streetscape Plan (TLCI Study), Cleveland, Ohio. *Campus District, Inc.* Traffic Engineer. Conducted traffic analysis quality assurance review. Michael Baker provided traffic engineering and planning services for the E. 22nd Street Development and Transportation Plan, which evaluated changes to the E. 22nd Street corridor in the Campus District area of for the purpose of converting this bleak area into a friendly, livable corridor connecting the community and enhancing its economic viability. Michael Baker used traffic count data to estimate current year average daily traffic (ADT) and intersection capacities at four study area locations and evaluated current traffic volumes with optimized signal timing plans. Michael Baker also assisted in the

development of concepts and recommendations to enhance roadways and connections, completed trip generation analysis for anticipated existing land uses to be removed and proposed new land uses, evaluated the impacts of potential changes to the roadway, assessed the feasibility of various alternatives for proposed development, and recommended traffic-related modifications and enhancements.

Jackson-Heisley Network Access Study, Painesville, Ohio. *City of Painesville, Ohio.* Traffic Engineer. Responsible for overseeing the Synchro traffic analysis including the development and comparison of alternatives. Participated in public involvement program. Michael Baker performed a transportation study to evaluate alternatives for improved access to the S.R. 2 interchange with Heisley Road and the S.R. 44 interchange with Jackson Street in conjunction with a planned large mixed-use development adjacent to these interchanges. Michael Baker's services included compilation of traffic volume data, collection of field data, travel demand modeling, traffic analysis and forecasts, stakeholder coordination, and report preparation.

U.S. 45 J-Turn Intersection at C.R. 212, Clarke County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Conducted traffic analysis of potential J-turn configuration and provided appropriate summary documentation. Michael Baker provided engineering services for improvements at the intersection of U.S. 45 and Clarke County Road 212. The improvements include the creation of a J-turn intersection at this location and the addition of new U-turn locations to the north and south of the intersection to accommodate the new turning movements caused by the J-turn intersection. Michael Baker's services included topographic surveys and roadway design.

Heisley Rd Split Ramp Study. *Burgess & Niple.* Transportation Engineer. Responsible for conducting complex Synchro traffic analysis and highway capacity analysis according to ODOT standards and requirements.

S.R. 6 and Jackson Avenue Interchange, Oxford, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for overseeing traffic analysis of multiple intersection configurations including a CFI. Michael Baker developed construction plans for an interchange to replace the at-grade intersection at S.R. 6 and Jackson Avenue. Michael Baker's services included right-of-way plans, bridge hydraulic and structural design, traffic analysis, and the preparation of construction plans.

I-269 from East of I-55 to North of S.R. 305, DeSoto County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for preparation of interchange feasibility study. Oversaw traffic analysis to determine the appropriate interchange and lane configurations for the planned new I-269 facility based on projected traffic volumes. Michael Baker provided engineering services for I-269 from east of I-55 to north of S.R. 305. Michael Baker's services included detailed mapping from aerial photography, field surveys, traffic analysis, the preparation of final right-of-way plans, and preparation of final construction plans.

CUY-CUY-14.90 EB Part 6. *Richland Engineering Limited.* Traffic Engineer. Conducted complex Synchro traffic analysis and completed quality control review of traffic volume development. Michael Baker is providing design services for replacement of the existing eastbound I-90 Central Viaduct Bridge over the Cuyahoga River. Michael Baker will prepare a design report with preliminary drawings and sketches showing main girder, stringer, and floorbeam cross sections over the length of the bridge superstructure. Michael Baker will develop preliminary design of the delta girder superstructure, including the floorbeam and sub-stringer system, creating a 3D model to evaluate the effects of live load and thermal forces on the curved delta girder with sub-stringer system, perform a viaduct deck replacement evaluation, and develop substructure pier reactions from the refined structural model. Michael Baker will provide utility coordination and assist in facilitating a series of meetings to inform project stakeholders of the current project status, solicit input, and establish the scope of services that will address project enhancements. Michael Baker will also perform a traffic study to determine the adequacy of the existing

intersections and street system adjacent to I-90 in the Central Interchange area. Traffic conditions will be studied for each of several construction phases and for the Interim Condition at the completion of the project.

Allegheny Riverfront Green Boulevard, Pittsburgh, Pennsylvania. *Urban Redevelopment Authority of Pittsburgh.* Transportation Engineer. Responsible for providing bicycle and pedestrian transportation planning and design assistance. Participated in public involvement efforts. As a member of a consultant team, Michael Baker is providing multimodal planning services on a study of options to transform a 6.45-mile segment of freight rail right-of-way from Pittsburgh's Strip District to Lawrenceville into a green corridor that promotes walkability, intermodal connectivity, and sustainable development. Michael Baker's tasks include conducting a multimodal needs assessment; identifying preliminary alternatives in coordination with the client and community groups and conducting a feasibility analysis; developing a model to forecast transit ridership and vehicular, pedestrian, and bicycle trips; evaluating the costs and benefits of each alternative; and developing an implementation plan for the preferred alternatives.

I-564 Intermodal Connector, Norfolk, Virginia. *Virginia Department of Transportation.* Civil Associate. Provided traffic engineering technical support. Michael Baker provided engineering services for the construction of a new, 1.6 mile, four-lane, limited-access, intermodal connector from I-564 to 2nd Street. Michael Baker's services included preliminary engineering, a traffic impact study, alignment study and alternatives analysis, conceptual and preliminary roadway design, interchange design, right-of-way, hydrologic and hydraulic analysis, drainage design, signing plans, erosion and sediment control measures, and maintenance of protection of traffic.

PA#4 ARMA EIS Loop 1604. *Alamo Regional Mobility Authority.* Traffic Engineer. Responsible for managing traffic analysis task included CORSIM software analysis, HCS, review of historic travel trends, crash analysis, and documentation of results.

ACAA ON-CALL PLANNING & ENVIRONMENTAL SERVICES (w/2 options years of $250k each). *Allegheny County Airport Authority.* Traffic Engineer. Provided traffic engineering support.

On-Call Planning and Environmental Services, Pittsburgh International, and Allegheny County Airports (PIT/AGC), Pittsburgh, Pennsylvania. *Allegheny County Airport Authority.* Traffic Engineer. Responsible for conducting traffic analysis in support of future development sites. Since 1989, Michael Baker has provided on-call general services for both airports. In 2002, the client established a separate planning and environmental on-call contract for planning management and extension-of-staff assignments and selected Michael Baker to provide comprehensive, multidiscipline planning and environmental services. Michael Baker's tasks range from developing mapping to conducting environmental evaluations and preparing environmental documents and permit applications, to conducting a feasibility study for converting a cross-wind runway to a taxiway.

S.R. 19 (Perry Highway), Section A13, Wexford Flats Safety Improvement, McCandless and Pine Township, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Assisted with traffic signal plan development. Michael Baker performed traffic engineering services and conducted constructibility reviews as part of a consultant team for the design of safety and capacity improvements to S.R. 19 (Perry Highway), Section A13, Wexford Flats.

Southfield Development Plan, Pittsburgh International Airport (PIT), Pittsburgh, Pennsylvania. *Allegheny County Airport Authority.* Traffic Engineer. Developed a set of roadway options to provide access to the potential development site. Considerations included potential tunnels, existing grades, future airport planning efforts, and environmental issues. Michael Baker evaluated the development potential of the Southfield site, located

between the active airfield and a future east-west runway, and formulated concepts for its use. Approximately 300 acres in size, the area is an ideal location for aviation- and certain non-aviation-related uses.

Accessibility Measures Implementation, Statewide, Virginia. *Office of Intermodal Planning and Investment (OIPI).* Traffic Engineer. Participated in plan development. Through an on-call contract, Michael Baker helped implement a series of multimodal measures of transportation accessibility by assessing over 300 activity centers, over 40 major corridors, and various freight regions across the state. The Michael Baker team completed a detailed accessibility assessment of 28 intermodal centers, including Metrorail stations, Amtrak stations, airports, and ports, and developed recommendations to address deficiencies. Additionally, the team completed a detailed assessment for 10 intermodal centers with detailed short and long term recommendations, including cost estimates and phasing. The recommendations were designed to be easily incorporated into the next Six-Year Improvement Program and quickly implemented.

Lee Road Traffic Study and Corridor Plan, Shaker Heights, Ohio. *City of Shaker Heights, Ohio.* Traffic Engineer. Provided quality assurance of traffic analysis. Michael Baker prepared a traffic study and corridor plan for the Lee Road corridor that included traffic and pedestrian improvements, streetscape renovations, and the addition of bike lanes. The purpose was to improve transportation access and circulation for all modes in the corridor, with an emphasis on the commercial district, to support and enhance the city's economic development and smart growth/sustainability goals. Michael Baker developed a traffic study and lane reconfiguration plan; prepared a pedestrian/bike improvement plan that identified appropriate bike facilities to improve access in the corridor; and prepared a streetscape plan with recommended amenities, including signage, lighting, and landscaping, to create a pleasant environment along the corridor and establish gateways at two key entry points to the city. Michael Baker also provided an implementation plan identifying priorities and sequences of improvements with order-of-magnitude cost estimates and facilitated a series of informational workshops for the project steering committee, stakeholders, and the general public.

ATP - Cleveland DOT Innerbelt Construction Group 2 Design Build Pursuit with Kokosing. *Kokosing Construction Company, Inc.* Traffic Engineer. Participated in complex traffic analysis including traffic volume diversion and signalized intersection analysis.

Dick Henderson Memorial Bridge Replacement, Kanawha County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Task Manager. Responsible for managing traffic analysis and traffic study documentation. Analysis focused on the bridge segment and the two signalized intersections which provide access to the bridge. Michael Baker provided engineering services for the replacement of the Dick Henderson Memorial Bridge; the steel truss bridge that carries the WV 25 spur over the Kanawha River between the cities of Nitro and St. Albans. Michael Baker's services included an environmental assessment, a Phase II archaeological investigation, preparation of National Environmental Policy Act documentation, public outreach support, alternatives analysis, structural analysis, preliminary and final design, and shop drawing review.

Jefferson Road Planning and Environmental Linkages Study, South Charleston, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Transportation Engineer. Responsible for document preparation. Also conducted broad level traffic analysis. Michael Baker performed a planning and environmental linkages study of the Jefferson Road (WV 601) corridor improvement project; a proposed widening and realignment of a two-lane road approximately 1.7 miles long connecting I-64 and U.S. 119. Michael Baker's services included data collection and analysis, project need assessment, environmental overview development, alternatives analysis, and report preparation.

On-Call Planning Support for Inland Port and Logistics Park Facility, Erie County, Pennsylvania. *Greater Erie Industrial Development Corporation.* Traffic Engineer. Responsible for conducting preliminary traffic scoping meeting and coordination to identify any potential issues during the project planning phases. As a member of a technical consulting team, Michael Baker is providing on-call planning support for the development of a state-of-the-art inland port and logistics park facility that will accommodate domestic and international shipping container traffic. Michael Baker is evaluating alternatives and developing recommendations on access, connectivity, and traffic capacity for the inland port and its feeder ports and providing guidance to the client to ensure NEPA compliance.

U.S. 61 at Eagle Nest Intersection Improvements, Coahoma County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for conducting project traffic analysis. Michael Baker developed Phase A: final right-of-way plans for improvements at the intersection of U.S. 61 with Eagle Nest Road in Coahoma County. Eagles Nest Road will be a channelized intersection and realigned to intersect at, or close to, a 90-degree angle to U.S. 61. Michael Baker provided all field survey requirements for the project, including a property map.

Interstate 55/S.R. 570 Interchange Improvements, McComb, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Conducted Synchro analysis of closely-spaced coordinated traffic signals. Analysis included phasing determination and in-depth queuing analysis. Under an engineering services master agreement, Michael Baker is performing the field survey and developing final roadway and traffic signal design plans for interchange improvements at the Interstate 55 and State Route 570 interchange. The project will widen and lengthen the entrance and exit ramps to add turn lanes and include two new traffic signals on S.R. 570. Michael Baker is also performing the traffic modeling for the improvements and designing conduit and fiber-optic cable installations to interconnect the new traffic signals with the master system.

Sonora Community Revitalization Plan, Sonora, California. *City of Sonora.* Traffic Engineer. Conducted roundabout analysis and documentation of results. Michael Baker is providing professional services in support of the Sonora Community Revitalization Plan, known as Vision Sonora, which involves physical improvements along the Highway 49 and Washington Street commercial corridors, including Historic Downtown Sonora. Michael Baker is collaborating with the Tuolumne County Transportation Council and members of the community through a steering committee, advisory committee, and a robust public participation program. Michael Baker's tasks include launching an interactive website to provide a forum for community idea generation and feedback.

Marshall University Campus Master Plan. *SmithGroup Incorporated.* Traffic Engineer. Provided traffic engineering support and quality control. Michael Baker provided transportation planning and traffic engineering services that encompassed bicycle, pedestrian, traffic and transit accommodations. Michael Baker assessed modifications to the multi-lane one-way pair state route that wraps the campus, developing recommendations to reduce capacity and provide a complete streets solution that incorporates pedestrian improvements (mid-block crossings, pedestrian connections) and bicycle facilities (bike lanes, cycle track). Concept development included coordination with University engineers, local (Rahall Transportation Institute) and the WV Dept of Highways. Michael Baker also assessed potential modifications to the local transit to accommodate Marshall.

The Promontory at California State University Monterey Bay, Marina, California. *AMCAL Multi-Housing, Inc.* Traffic Engineer. Conducted roundabout analysis for four intersections, including improvement option. Michael Baker assisted in the preparation of a specific plan and environmental review in compliance with the California Environmental Quality Act (CEQA) for The Promontory student housing development project at California State University Monterey Bay (CSUMB). The project includes three four-story buildings to be built on approximately eight acres on the former Fort Ord Army Base. Michael Baker developed the specific plan to define a

set of development policies, land use regulations, design standards, and a public funding/financing program. Additionally, Michael Baker prepared an initial study/mitigated negative declaration (IS/MND) to identify and describe potential environmental impacts associated with the project. The document also recommended and incorporated mitigation measures where necessary to reduce the level of significance of identified impacts to below a level considered significant.

U.S. 49 New Location Environmental Impact Statement, Wayne County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for conducting traffic analysis for nine (9) signalized intersection. Study included traffic volume development, HCS analysis, and development of mitigation alternatives. Michael Baker is providing project management, data collection and evaluation, toll road analysis, corridor and alternatives analysis, and documentation for a planning and environmental linkage Study (PEL) for the location and improvements for U.S. 49 beginning north of Hattiesburg near the intersection of S.R. 42 to a terminus south of Florence.

E01131- 222 N.Corridor- WO#2. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Provided traffic analysis of various roundabout scenarios.

E01588 S.R. 4006 PREL DESIGN. *Pennsylvania Department of Transportation, Central Office.* Transportation Engineer. Responsible for completing PennDOT Bicycle & Pedestrian Checklist.

Environmental, Engineering, and Construction Phase Services for S.R. 0019, Section A27, West End Improvements, Allegheny County, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Participated in detour plans. Michael Baker provided environmental documentation, preliminary and final design, and construction phase services for the West End improvement project, located at the West End Circle in Pittsburgh. The area had a history of high crash rates due to tight geometry, high traffic volumes, conflicting movements, sight-distance deficiencies, and inadequate capacity. The purpose of the project was to accommodate current and forecasted travel demand, improve safety, enhance roadway continuity, improve access to the North Shore, and support revitalization of the West End community.

I-376 Parkway West Feasibility Study, Allegheny County, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Provided traffic engineering support. Michael Baker performed an alternatives analysis and feasibility study to improve safety and expedite traffic flow on the Parkway West section of I-376. Michael Baker's tasks included collecting traffic data; performing surveying, mapping, and LiDAR surveys and data processing; identifying cost-effective safety and operational alternatives; developing geometric design improvements; and preparing the feasibility study report.

S.R. 519 and S.R. 1055 Intersection Improvements, North Strabane Township, Pennsylvania. *Pennsylvania Department of Transportation, District 12-0.* Traffic Engineer. Provided traffic analysis technical support. Michael Baker provided engineering services for improvements to the skewed intersection of S.R. 519 and S.R. 1055 (Brownlee Road to the south, Thomas Eighty-Four Road to the north). Michael Baker's services included a traffic impact analysis and preliminary and final design.

West Ohio St. Bridge - Part 2. *City of Pittsburgh, Pennsylvania.* Traffic Engineer. Responsible for overseeing traffic analysis of Existing condition, Future conditions, and the potential impacts of bridge replacement. Synchro model prepared to assess impacts.

FAY-435 Preliminary Engineering, Alternatives Evaluation, and Final Design, Fayette County, Ohio. *Ohio Department of Transportation, Central Office.* Traffic Engineer. Provided traffic engineering support and quality

control. Michael Baker provided engineering and design services for the FAY-435 Corridor, which has an interchange with I-71 and serves as the linkage to FAY-35, a major east-west limited access roadway in central Ohio. The corridor experiences heavy congestion due to the high truck volumes and presence of multiple commercial driveways. Drainage issues exist, and the pavement is in poor condition due to the traffic. Michael Baker performed a preliminary engineering and alternatives evaluation that included traffic analysis, safety analysis, drainage analysis, and pavement studies. Michael Baker developed final plans for stormwater systems, pavement, signing, striping, intersections, bridge replacement, and maintenance of traffic.

CONTRACT 2NOV2011. *IKEA Property, Inc.* Transportation Engineer. Provided technical support for active transportation mode accommodations.

S.R. 6 West Batesville Bypass Engineering Design, Panola County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Responsible for overseeing traffic analysis of the proposed Batesville Bypass. Determination of required lane configurations and traffic control to be conducted. Michael Baker provided engineering services for the design of the S.R. 6 West Batesville Bypass, a new six-mile, four-lane, controlled-access highway with two interchanges. Michael Baker's services included field surveying, bridge hydraulic and structural design, and right-of-way plans.

I-95 Interchange Justification Report (IJR) Update Ex 133-130 (WO #27). *Virginia Department of Transportation.* Traffic Engineer. Responsible for updating HCS analysis to the latest version of the software consistent with HCM2010.

Patriot's Crossing Environmental Assessment, Hampton Roads, Virginia. *Virginia Department of Transportation.* Traffic Engineer. Provided general traffic volume and analysis assistance. Michael Baker reevaluated the Patriot's Crossing preferred alternative of the Hampton Roads Crossing Study, which would establish a new crossing of Hampton Roads, and prepared an environmental assessment to document shifts in proposed alignment, evaluate impacts from updated traffic data, and address regulatory changes following selection of the preferred alignment in 2001.

US-VISIT Program Management Indefinite Delivery Indefinite Quantity, Rosslyn, Virginia. *General Services Administration.* Traffic Engineer. Oversaw traffic analysis task including documentation of results. Michael Baker was awarded an Indefinite Delivery Indefinite Quantity Contract to provide planning and execution of a variety of program and project management and other related services for facilities work for the U.S. Department of Homeland Security (DHS) US-VISIT Program.

Virginia Department of Transportation (VDOT) Environmental On-Call: Years 2008 to 2011, Statewide, Virginia. *Virginia Department of Transportation.* Civil Associate. Provided traffic analysis assistance. This is the second Virginia Department of Transportation (VDOT) – Environmental Division Statewide Environmental Document & Related Services (On-Call) Contract awarded to Michael Baker. The contract involves providing services related to the preparation of environmental documents to satisfy the National Environmental Policy Act (NEPA) and related studies for transportation projects on an as-needed basis throughout the state. Services for individual components of these documents requires expertise in air and noise impact analysis and abatement; natural, social, and cultural resources; and hazardous materials management. Public participation, traffic analysis, and preliminary engineering may also be required.

CUY-10-10.14 Safety Study. *LJB Inc.* Traffic Engineer. Participated in project quality assurance.

Intersection Safety Studies, Various Locations, Ohio. *Ohio Department of Transportation, District 12.* Traffic Engineer. Participated in project quality assurance. As a subcontractor, Michael Baker conducted safety studies of three intersections on the state's list of high-crash urban intersections in District 12. Michael Baker examined existing conditions for roadways and intersections, signal operations, access points, parking, and proximate land uses; conducted field views to identify geometric and operational issues; and evaluated existing safety performance by analyzing three-year crash histories. Michael Baker then conducted a crash analysis using the client's Economic Crash Analysis Tool (ECAT), which is based on the Highway Safety Manual (HSM). Michael Baker identified a wide range of counter-measures that could be used to address safety issues, including signal timing modifications, signal and signing improvements, geometric modifications, parking restrictions, transit stop modifications, access management, and others. Recommended changes to intersection geometry were drawn as conceptual improvements on an aerial photograph base. For those recommended counter-measures present in the HSM, the associated crash modification factors (CMF) were input into the ECAT to determine likely impact on crash frequency.

CTfastrak Program Management, Engineering, and Design Review Services, CTFASTRAK, New Britain and Hartford, Connecticut. *Connecticut Department of Transportation.* Traffic Engineer. Responsible for coordinating traffic data collection program and traffic volume development. Reviewed station site traffic circulation. Michael Baker served as the program manager and performed engineering, design, and constructability review services for the CTFASTRAK (formerly New Britain-Hartford Busway), the first Bus Rapid Transit (BRT) in the state of Connecticut. The 9.4-mile-long busway, which includes 16 new or rehabilitated bridges, runs along inactive and active railroad corridors and consists of a two-lane, bus-only roadway and 10 stations that include sheltered platforms and other amenities.

S.R. 28, East Ohio Street Improvement Project, Allegheny County, Pennsylvania. *Pennsylvania Department of Transportation, District 11-0.* Traffic Engineer. Provided traffic engineering technical support. Michael Baker provided comprehensive engineering and environmental services to upgrade a 2-mile, four-lane section of S.R. 28 between the Chestnut Street Ramps and the Millvale Interchange to a limited-access expressway. The project included the addition of median barrier on S.R. 28, a grade-separated interchange at 31st Street, and new southbound on and off ramps at 40th Street to allow continuous mainline flow. Project challenges included minimizing hillside impacts, maintaining railroad capacity, constructing within a tight corridor, and accommodating historic structures, while enhancing safety, improving traffic flow, and coordinating with multiple stakeholders with diverse needs. Michael Baker's services included project management; environmental compliance services; value engineering; roadway, bridge, interchange, retaining wall, and multiuse trail design; utility coordination and relocation design; stormwater management design; aesthetic design; complex construction sequencing and traffic control plans; intelligent transportation system design; and construction consultation.

CUY-6.12.20 I_14 Assoc Servc. *Ohio Department of Transportation, Central Office.* Traffic Engineer. Provided traffic engineering support.

S.R. 15 and Lamey Bridge Road Roundabout, Harrison County, Mississippi. *Mississippi Department of Transportation.* Traffic Engineer. Conducted traffic analysis of a roundabout scenario including documentation of results. Michael Baker provided engineering and environmental services for a proposed roundabout at the intersection of S.R. 15 and Lamey Bridge Road. Michael Baker's services included a Phase I archaeological survey, a categorical exclusion, a traffic analysis and impact study, and development of Phase A final right-of-way plans.

B24181, Birdsboro Bridge Replacement (S.R. 0082, Section 10B), Berks County, Pennsylvania. *Pennsylvania Department of Transportation, District 5-0.* Traffic Engineer. Provided traffic analysis technical support to

address complicated project issues. Michael Baker performed an alternatives study, preliminary design, and final design of a bridge replacement for a 1,100'-multispan concrete arch bridge over the Schuylkill River and Norfolk Southern Railway.

I-69 Tier 2 Section 5 - EIS and Engineering Services, Bloomington, Indiana. *Indiana Department of Transportation.* Traffic Engineer. Provided traffic engineering analysis support. Michael Baker provided Tier 2 environmental and engineering services for one of six sections of the planned I-69 corridor. Section 5 is located in Monroe and Morgan Counties. Services included National Environmental Policy Act (NEPA) Environmental Impact Statement studies and documentation, engineer's report, and public involvement. Michael Baker's engineers collected and reviewed relevant background information, including existing conditions associated with S.R. 37. Michael Baker analyzed existing project data, including traffic generation, crash records, environmental constraints, and records of public concern, and conducted an Engineering Assessment. Project engineers developed alternatives; screened them for effectiveness, efficiency, and environmental constraints; and further refined and optimized them for impact minimization and cost savings. Throughout this process, complex matters related to traffic, hydraulics, geotechnical conditions (including karst features), and structural requirements were identified. Through the minimization efforts used between the publication of the Draft and Final EIS, including evaluation of the existing pavement, the continued use of an existing partial interchange, and engineered solutions to minimize right-of-way requirements, Michael Baker's team was able to identify a potential reduction of $152 million in project costs.

S.R. 14 Improvements from I-77 at Mineral Wells to Pettyville, Environmental Assessment, Wood County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Task Manager. Responsible for managing the traffic engineering task including traffic volume projections and capacity analysis. Michael Baker is performing an environmental assessment in support of improvements to S.R. 14 from I-77 at Mineral Wells to Pettyville. Michael Baker's services include project management; purpose, and need development and alternatives analysis; geographic information system (GIS) and exhibit development; identification of socioeconomic, water resources, natural resources, air quality, noise, hazardous materials, and cultural resources impacts; agency and public outreach support;, traffic analysis and forecasting; and report preparation.

I-69 SIU 15 - Supplement No. 7. *Louisiana Department of Transportation and Development (LADOTD).* Task Manager. Responsible for traffic analysis task management.

PTC WO#2A Scranton Beltway 2. *McCormick, Taylor & Associates, Inc.* Traffic Engineer. Coordinated traffic data count program and conducted traffic volume development calculations.

ATP - Ave. 50 FInal Engineering. *PSAV, LLC.* Traffic Engineer. Provided traffic analysis support.

I-69, Section of Independent Utility No. 15, U.S. 171 to I-20, Bossier, Caddo, and DeSoto Parishes, Louisiana. *Louisiana Department of Transportation and Development (LADOTD).* Traffic Engineer. Responsible for the Point of Access Studies for the proposed I-69 Interchanges with I-20 and I-49. Studies to address FHWA requirements. Michael Baker conducted a preliminary engineering and environmental study for I-69, Section of Independent Utility 15. Michael Baker's services included project management, environmental investigations, preliminary roadway engineering, geographic information system environmental mapping and analysis, global positioning system survey and digital orthophotography; conceptual bridge design, traffic demand modeling and traffic forecasting, preparation of a corridor preservation memorandum of agreement, preparation of draft and final environmental impact statements (EIS) and record of decision, and stakeholder outreach.

District 10-0 Open-End Agreement. *Pennsylvania Department of Transportation, Central Office.* Traffic Engineer. Provided traffic engineering support.

VAR-STW Certified Traffic No. 2015-1. *Ohio Department of Transportation, Central Office.* Traffic Engineer. Provided traffic engineering technical oversight.

E02608, WO#42, Middletown TIS (2013-05). *Pennsylvania Department of Transportation, Central Office.* Transportation Engineer. Provided traffic engineering support and conducted bicycle and pedestrian analysis.

Non-Michael Baker Project Experience

Reed Putnam Redevelopment Traffic Impact Study, Norwalk, Connecticut. *City of Norwalk Department of Public Works.* Civil Associate. Participated in traffic analysis of multi-use development including 1.1 million square feet of office space and 200 residential units. Conducted traffic analysis using Synchro and HCS software packages. Involved in the development of improvements, the documentation of results and the preparation of State Traffic Commission certificate application.

Previous Work History

Allan Davis Associates, Graduate Engineer, June, 2001 - July 2002

Presentations

Dietrich, Carla R. "Active Allegheny, A Commuter Bicycle, Pedestrian & Complete Streets Transportation Plan for Allegheny County." American Planning Association Pennsylvania Chapter Annual Conference. October 2012

Dietrich, Carla R. "Warner-Garfield Trail Study." Ohio Transportation Engineering Conference. October 2010

Dietrich, Carla R. "PennDOT's Changing - New Bicycle and Pedestrian Planning and Design." American Planning Association Pennsylvania Chapter Annual Conference. October 2006

Dietrich, Carla R. "I-95 / I-64 / I-195 Interchange Feasibility Study." Virginia Section of Institute of Transportation Engineers Annual Meeting. June 1999

Seminars/Conferences

"Transit Signal Priority Workshop," Connecticut Department of Transportation, Newington, Connecticut, July 2003

"Pedestrian Facilities Users Guide: Providing Safety and Mobility," Federal Highway Administration, Harrisburg, Pennsylvania, June 2005

"Designing for Pedestrian Safety," Charlie Zegeer and Michael Ronkin, Lynchburg, Virginia, May 2006

Computer Skills

Adobe Acrobat Professional
ArcGIS
Bentley MicroStation

Engineering Software: CORSIM Simulation
Highway Capacity Software (HCS)
Microsoft Excel
SIDRA
SimTraffic
Synchro (Trafficware)
TEAPAC
VISSIM/VISSUM

Professional Affiliations

Institute of Transportation Engineers (ITE), 29485
Women's Transportation Seminar (WTS), Inland Empire

Achilles W. Malisos

Manager of Air and Noise Studies

Years with Michael Baker: 11
Years with Other Firms: 0

Degrees

M.A., 2005, Urban and Regional Planning, University of California at Irvine

B.A., 2003, Environmental Studies, University of California at Santa Cruz

Licenses/Certifications

2.1.1 Traffic Noise Analysis, California

2.2.1 Air Quality Analysis, California

General Qualifications

Mr. Malisos serves as an Environmental Analyst, with a specialty in Acoustics, Air Quality, and Climate Change. He has experience in the research, preparation, and analysis consistent with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) for a variety of environmental planning projects involving redevelopment, infrastructure, residential, mixed use, institutional, and commercial uses.

The following is a representative sample of projects for which Mr. Malisos has prepared environmental and technical analyses.

Experience

Abbott Road Rehabilitation Environmental and Design Support, Anchorage, Alaska. *Alaska Department of Transportation & Public Facilities.* Environmental Specialist. Responsible for the traffic noise analysis. Michael Baker provided environmental and engineering support to the client's in-house design team and functioned as an extension of staff for rehabilitation of two miles of Abbott Road between Lake Otis Parkway and Birch Road. Support activities included traffic control plan, traffic analyses, noise study, utility design, erosion and sediment control plan, lighting and signal design review, and public involvement. Reports, drawings, specifications, and engineer's estimates were prepared for each activity, as appropriate.

ADOT Multimodal Planning Div TA #MPD 79-12. *Arizona Department of Transportation.* Environmental Specialist. Responsibilities included air quality.

Art Gaitan's Mexico Cafe. *City of Temecula.* Environmental Associate. Responsible for the air quality, greenhouse gas, and noise analyses.

ATP Carson/Avalon Mixed Use. *Carson City, Nevada.* Project Manager. Responsible for CEQA documentation.

ATP-Related-9.21.15. *Related Companies of California, LLC.* Environmental Specialist. Responsibilities included air quality and noise.

Avenue 50 and 52 Crossing/Eastside Dike Levee Evaluation, Coachella Valley, California. *PSAV, LLC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared regional hydrology, hydraulic, and sedimentation analyses for the 51-square-mile watershed tributary to the Eastside Dike Levee along the Coachella Canal. The project evaluated the condition of the existing levee and identified options for two roadway crossing encroachments across the levee system. Regional hydrology was prepared for this arid region using the HEC-1 program. Flood routing and maximum water surface profiles along the dike were prepared using FLO-2D. The analysis evaluated the dispersion of flows along the dike from the 10 major drainage systems which are tributary to the system.

Avenue 50 Bridge Over Coachella Valley Stormwater Channel, Coachella, California. *Athalye Consulting Engineer.* Environmental Specialist. Responsible for air and noise analyses. Michael Baker is assisting with preparation of California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documentation for construction of a new bridge for Avenue 50 over the Coachella Valley Stormwater Channel (CVSC). The existing crossing is a low-water crossing that is frequently flooded during storm events. The project is intended to create a new bridge to improve safety and travel within the project area. Key issues include channel hydraulics, biological resources, visual resources, and cultural resources due to the proximity of tribal lands to the project site.

Avenue 50 Extension, Coachella, California. *City of Coachella.* Environmental Specialist. Responsible for the air quality, greenhouse gas, and noise analyses. Michael Baker provided design services for a project to connect existing Avenue 50 at Fillmore Road to the proposed Avenue 50 Interchange on Interstate 10. Once connected to the I-10 interchange, this stretch of Avenue 50 will provide essential access and regional circulation to the City of Coachella from the East. Additionally, the Avenue 50 project will facilitate the necessary infrastructure, including utilities corridors, for the La Entrada Specific Plan. The project includes the design of approximately 7,200 lineal feet of six-lane arterial roadway with NEV and bike lanes.

Shasta Lake General Plan Update, Shasta Lake, California. *City of Shasta Lake, CA.* Environmental Specialist. Responsible for environmental documentation. Michael Baker provided a general plan update focusing on a new vision and objectives for the growth of Shasta Lake. The plans elements included an emphasis on improving niche retail opportunities in the downtown core as an alternative to chain retail development, expanding mixed-use development, and enhancing the business climate through infrastructure expansion and shovel-ready infill opportunities.

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Comprehensive General Plan Update, Rancho Santa Margarita, California. *City of Rancho Santa Margarita.* Environmental Specialist. Responsible for air and noise analyses. Michael Baker is preparing the city's Comprehensive General Plan Update and associated Environmental Impact Report (EIR). The focus of the update is to "refresh" the Land Use, Economic Development, Conservation/Open Space, Safety, and Noise elements to address the continued vision for the city. Additionally, updates will ensure that all elements are consistent with new state requirements for general plans. The scope of work included a tour of the city, a city staff summit, community engagement, website design, and workshops with the City Council and/or Planning Commission. In addition, the city also requested that Michael Baker prepare a retail market analysis and laborshed analysis (spatial mapping of commuting patterns).

Cuyama Solar Mgmt. Plans. *First Solar, Inc.* Environmental Specialist. Responsible for noise study.

Date Palm Drive Bridge over Whitewater River, Cathedral City, California. *City of Cathedral City.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided environmental documentation and final engineering for a 760-foot-long bridge project that consisted of widening from four lanes to six lanes of traffic; seismic retrofit; and roadway improvements, including pedestrian and bike lane enhancements. The original 1981 bridge consisted of nine spans, precast P/S I-girder supported on pier walls,

and pile foundations. The symmetrical widening matched the existing superstructure type on a 45 degree skew. Scour protection countermeasures were used for protecting existing piles while new pile foundations were placed at sufficient depth to resist high scour conditions. Other features included retrofitting with the existing bridge with girder cable restrainers, hinge retrofit, and deck repairs. The HBR project complied with Caltrans latest 2010 Amendments, including SDC and LRFD criteria, and Local Assistance Procedures Guide in District 8.

Downey Wells, Downey, California. *Geoscience.* Environmental Specialist. Responsible for acoustics and air quality. As part of a consultant team, Michael Baker provided engineering services for the design, installation, and equipping of two new groundwater wells for the city's water system. The goal was to design, drill, develop, and equip two new deep, high-capacity groundwater wells that will enhance the city's ability to provide reliable, high-quality, cost-effective water service to its current and future customers. With each well anticipated to supply 2,500 gallons of water per minute to the city's distribution potable system, the combined total well production could account for 25 percent of the city's future potable water needs. The project began with a comprehensive geohydrological, engineering, and hydraulic assessment of six alternative well sites currently in consideration. This assessment addressed site-specific needs, evaluated site suitability for well construction and operation, and identified required off-site pipeline facilities. Two preferred sites were selected. Michael Baker's subsequent tasks included ensuring environmental and regulatory permitting compliance; preparing a preliminary design report; developing design plans and technical specifications for the equipping of both wells; and providing engineering support, construction coordination, and inspection services during construction.

Don Wallace Multiuse Trail, Calabasas, California. *LA County Parks & Recreation.* Environmental Specialist. Responsibilities included air quality and noise. Michael Baker is providing environmental and engineering services for a 1,800-foot multiuse trail along Las Virgenes Creek. Michael Baker's services include geotechnical investigation, structural analysis, hazardous materials investigation, hydrology and hydraulic analysis, preparation of a survey and property easement report, preparation of construction documents, permitting, and agency coordination.

Don Wallace Trail System, Los Angeles County, California. *LA County Parks & Recreation.* Environmental Specialist. Responsibilities included air quality and noise.

DVA North Hollywood Dialysis Clinic. *KC Design Architects, Inc.* Environmental Specialist. Responsible for the acoustical assessment.

El Camino Real Bridge and Road Widening, San Diego, California. *City of San Diego Economic Development.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker assisted with preparation of an environmental assessment (EA) under the National Environmental Policy Act (NEPA) for the El Camino Real Bridge Widening Project. The project was required to correct seismic and operational deficiencies associated with the existing El Camino Real Bridge. The city proposed to reconstruct and widen the 340-foot long bridge over the San Dieguito River. The EA and supporting technical studies included preparation of a detailed biological analysis to determine potential impacts to federally listed species. In addition, the project required extensive coordination with multiple state and federal regulatory agencies. Other primary issues included aesthetics, noise, wetlands, and hydrology/water quality.

Ervin "Magic" Johnson Recreation Master Plan, Los Angeles, California. *LA County Parks & Recreation.* Environmental Specialist. Responsibilities included acoustics and air quality. The Earvin "Magic" Johnson Recreation Master Plan (EMJ) is approximately a 120-acre recreation area located within a disadvantaged urban community known as South Central-Willowbrook area where the community consists of 58% Hispanic or Latino and 35% African-American residents. The Project is a community-based and needs-based preliminary

design of a state-of-the-art recreational facility in the EMJ Recreation Area. Given the project location consisting of minority and underserved residents, the project required developing and implementing an Outreach Strategic Plan that would consist of stakeholder meetings, special interest/ small group interviews, (3) community workshops and a final County Public Hearing. Michael Baker was contracted to provide development of a conceptual design alternatives plan for recreation facilities such as a bicycle and pedestrian trails, exercise stations, children play areas, picnic areas, and other public use areas. Michael Baker will prepare baseline conditions data such as mapping, demographic trends for parks & recreation needs, traffic study, title search material, CEQA (including Air/GHG/Noise, Jurisdictional Delineation, Biology, and Cultural Resources), and a regulatory compliance strategy & permit plan. Michael Baker will be apply County codes and be familiar with the necessary restrictions and processes to prepare the Final Recreation Master Plan and phasing plan.

Exploratory Borings and Slant Test Well for Monterey Peninsula Water Supply Project, Marina, California. *California American Water.* Environmental Specialist. Responsibilities included acoustics and air quality. Since 2004, Michael Baker has been providing engineering and environmental services for the Monterey Peninsula Water Supply Project (MPSWP). The MPWSP includes a 6 to 9.6 MGD desalination plant treating highly brackish water drawn from coastal wells, a new Aquifer Storage and Recovery (ASR) well system, 17 miles of pipelines (30 to 36-inch diameter), a 6 million gallon reservoir, and two pump stations. Michael Baker prepared the Proponent's Environmental Assessment (submitted to California Public Utilities Commission (CPUC) and the Conceptual Design Report, and has provided a wide variety of program management services including preparation of third party review and coordination of project-wide CEQA (EIR) and NEPA (EA) documents; reconfiguration of the system to meet changing project requirements; assistance with acquiring permits, land and ROW for a test slant well and for full-scale slant wells and intake facilities; and design and services during construction of the test slant well.

Francis Parker Master Plan. *Francis Parker School.* Environmental Associate. Responsible for GHG and noise.

General Plan EIR Support. *County of Riverside.* Environmental Specialist. Responsible for CEQA document.

Generations MND. *City of Temecula.* Environmental Specialist. Responsible for air and noise analyses.

Hazard Mitigation Plan and General Plan Safety Element Update, Shasta Lake, California. *City of Shasta Lake, CA.* Environmental Associate. Responsibilities included acoustics and air quality. Michael Baker is preparing a Local Hazard Mitigation Plan for the City pursuant to the requirements of the Disaster Mitigation Act of 2000. The Plan includes identification and profiling of the City's identified natural hazards, vulnerability assessment, mitigation strategies, and plan implementation and maintenance, and involves public participation during the planning process including public workshops and outreach.

I-15 Structural and Geotechnical Design, Farr West and Brigham City, Utah. *Utah Department of Transportation.* Environmental Specialist. Responsible for Traffic Noise Analysis. Michael Baker is providing structural and geotechnical design for the addition of a lane to I-15 in each direction between 2700 North in Farr West and 1100 South in Brigham City. Michael Baker is providing rehabilitation feasibility, cost analysis, and widening design; analyzing the existing box culverts to verify their capacity to carry the widened roadway; and providing design for 10 overhead sign structures: nine cantilever and one full-span sign bridge. Michael Baker is also assisting with surface drainage design for the corridor.

I-15/SR-79 South PS&E. *City of Temecula.* Environmental Specialist. Responsible for acoustics and air quality.

ID/IQ Planning and Civil Engineering for Civil Works Projects, W912PL-10-R-0033, USACE, Los Angeles District, California. *U.S. Army Corps of Engineers, Los Angeles District.* Environmental Associate. Responsibilities included acoustics and air quality.

Interstate 10/Jefferson Street Interchange Improvements. *County of Riverside.* Environmental Planner. Responsibilities included acoustics and air quality.

Interstate 880 Operational and Safety Improvements, Oakland, California. *Alameda County Transportation Commission.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided engineering, environmental, and surveying and mapping services for a project to improve the mobility and traffic safety through the I-880 corridor, in the vicinity of 29th Avenue and 23rd Avenue. The project included removal and reconstruction of two freeway overcrossings, reconstruction of on-ramps and off-ramps, reconfiguration of local circulation patterns, and incorporation of a new roundabout at the 29th Avenue entrance ramp. Michael Baker provided right-of-way mapping services, boundary surveys, and aerial topographic surveys and prepared a joint CEQA/NEPA document. Michael Baker also provided type selection and final PS&E for mechanically stabilized embankment (MSE) retaining walls and pile-supported and conventional spread footing CIP concrete retaining walls, sound walls, and expanded polystyrene (EPS) block fill embankment and associated load distribution slab.

La Entrada Drainage and Hydrology Studies, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsibilities included acoustics and air quality. The project site includes seven regional conveyances and coalescing alluvial fans tributary to the Eastside Dike along the Coachella Canal. Michael Baker completed regional hydrology studies for the 50.6 square mile watershed, and 1- and 2-dimensional flood routing analyses to support the technical studies and identified the recommended improvements and project mitigation measures for the project site development. Michael Baker identified a whole fan flood hazard management program and developed the alignment and conceptual design for seven regional channels through the site.

La Entrada Specific Plan, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the Delineation of Jurisdictional Waters for the 2,200-acre La Entrada Specific Plan Project, located in the City of Coachella, California. The La Entrada Specific Plan consists of a master planned residential community will include three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan.

La Entrada Specific Plan - Regulatory, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the delineation of jurisdictional waters for the 2,200-acre La Entrada Specific Plan Project. The development consists of a master planned residential community that includes three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan. Michael Baker performed an extensive literature review and conducted multiple field surveys to document baseline conditions and map the extent of jurisdictional features within the boundaries of the project site that could pose a constraint to development. Once jurisdictional features were mapped, Michael Baker quantified project impacts and provided the client with a permitting and mitigation strategy.

Laguna Canyon Creek Erosion Protection and Habitat Restoration Project, Laguna Beach, California. *City of Laguna Beach.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker is providing planning, design, and permitting for the construction of a long-term erosion protection and habitat restoration within Laguna Canyon Creek that traverses a City owned parcel along Laguna Canyon Road. The site houses the City Animal Shelter and the Pacific Marine Mammal Center. The erosion of the creek banks are threatening the animal shelter facility and undermining the parking lot. The erosion protection project will protect

the facilities, improve the flow characteristics of the creek, enhance and restore habitat, and reduce flooding potential without negatively affecting upstream or downstream properties.

Lincoln Specific Plan Environmental Impact Report, Whiitier, California. *City of Whittier.* Environmental Specialist. Responsibilities included acoustics and air quality.

Mater Dei High School Parking Structure Environmental Impact Report, Santa Ana, California. *City of Santa Ana.* Environmental Specialist. Responsible for the acoustical analysis. Michael Baker is preparing an environmental impact report for the Mater Dei High School parking structure project. Michael Baker's services include air quality and greenhouse gas analyses, noise analyses, traffic and circulation analysis, cultural resources investigation, and the development of visual simulations.

McFarland GPA EIR. *City of McFarland.* Environmental Specialist. Responsibilities included air quality and noise. Michael Baker International prepared a traffic impact study to analyze forecast traffic conditions associated with the proposed McFarland General Plan Amendment. The City of McFarland is located within the Central Valley, approximately 20 miles north of Bakersfield, within the northeastern portion of Kern County. The City proposes a General Plan Amendment (GPA) to amend the Land Use Element to add two new land use designations, establish new policies and objectives associated with the new land use designations and other development within the planning area, and amend the Land Use Map to assign land uses to specific areas within the sphere of influence and change existing land use designations for several properties within the City boundaries. The "proposed project" evaluated herein refers to buildout of the proposed Land Use Map and baseline Circulation Element for the study area.

Mira Mesa Comm Park Exp. *City of San Diego Economic Development.* Environmental Specialist. Responsible for greenhouse gas analysis.

Monterey Downs and Horse Park and Central Coast Veterans Cemetery Specific Plan EIR, Seaside, California. *City of Seaside.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker served as the Project Facilitator for the Monterey County Housing and Redevelopment Office by providing strategic, technical, planning, and environmental support services for coordination and processing of applications and approvals associated with the proposed Monterey Downs and Horse Park and Central California Veteran's Cemetery project. Following completion of the Phase I Due Diligence and ENA negotiations, Michael Baker prepared an Environmental Impact Report (EIR). Michael Baker developed a draft project description, a Notice of Preparation (NOP), and an Administrative Draft EIR (ADEIR) for review. The EIR analyzed aesthetics and visual resources; air quality; construction-related and long-term emissions; biological resources, including forestry resources; cultural resources; geology and soils; greenhouse gases; hazards and hazardous materials; hydrology and water quality; land use and planning; construction-related and operational noise; population and housing; public service and recreation; utilities and service systems; and transportation and circulation. Following client and public review of the ADEIR, Michael Baker produced a Final EIR that included responses to comments received from agencies and members of the public.

New Hotel Environmental Impact Report, San Gabriel, California. *Delcan Corporation.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report (EIR) for a new 320-room, five-story hotel project on a 2.04-acre site on Valley Boulevard in the City of San Gabriel. Michael Baker prepared the EIR; traffic, air quality, greenhouse gas emissions, and noise technical studies; a traffic signal warrant analysis; and conceptual traffic signal design.

North Basin Recharge Project EIR, Riverside, California. *City of Riverside.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker is preparing the EIR for the Riverside Public Utilities Santa Ana River inflatable dam construction and diversion project. The project includes analysis of off-stream recharge basins and an in-stream inflatable dam that would capture 75 acre feet of water and divert 200 cfs of storm flows from the river to the recharge basins. In addition to Army Core of Engineers (ACOE) jurisdiction over the Santa Ana River embankment modifications, the project requires extensive coordination/compliance with regulatory agencies due to downstream and surrounding sensitive habitat.

OC-44 Pipeline Rehabilitation/Replacement Project, Orange County, California. *Mesa Water District.* Environmental Scientist. Responsibilities included acoustics and air quality. Mesa Water District recently selected Michael Baker to complete a Rehabilitation/Replacement Evaluation and Cathodic Protection Study for the OC-44 Pipeline. The OC-44 pipeline runs approximately 8.6 miles through Orange County. Michael Baker will provide a comprehensive plan to investigate the condition of the existing pipeline, evaluate repair and/or replacement strategies, and identify permitting and follow-on technical studies required to implement the recommended strategy. The contract value for the study is nearly $200,000, and work is underway to meet the requested May delivery date.

On-Call Engineering and Survey Services, Pittsburg, California. *City of Pittsburg.* Environmental Specialist. Responsible for acoustics and air quality.

Orange County On-Call Regulatory Services, Orange County, California. *County of Orange.* Environmental Planner. Responsibilities included acoustics and air quality. Under multi-year agreements since 2003, Michael Baker has been providing environmental, regulatory, and ecosystem restoration services for a variety of projects. Generally the projects have included channel, roadway, and regional park improvements. Michael Baker's work efforts have included detailed jurisdictional delineations, resource agency coordination and negotiation, creative problem solving with project design, California Environmental Quality Act (CEQA) compliance, biological and cultural assessments, application submittals to state and federal resource agencies, and permit acquisition.

Pacific Ave Condos 01/27/16. *Cal 33 Partners, LLC.* Environmental Specialist. Responsible for the air quality, greenhouse gas, and noise analyses.

Placentia GP Tech Studies. *Placentia, City of.* Environmental Specialist. Responsibilities included acoustics and air quality.

R-RickEng_17208-J. *Rick Engineering Company.* Environmental Specialist. Responsibilities included air quality and noise.

R-SanMarcos051215. *City of San Marcos, CA.* Environmental Associate. Responsible for noise analysis.

RBF-16-24. *City of Costa Mesa, CA.* Environmental Specialist. Responsible for air and noise analyses.

RBF-5217. *City of San Marcos, CA.* Project Manager. Responsible for acoustical assessment.

RBF-ArroyoDev 3.2015. *Arroyo Development, LLC.* Project Manager. Responsibilities included acoustics and air quality.

RBF-ATP 12-22-15. *61LK 8ME, LLC.* Project Manager. Responsible for acoustical assessment.

RBF-CCM-1.2016. *City of Costa Mesa, CA.* Environmental Specialist. Responsible for the air quality, greenhouse gas, and noise analyses.

RBF-CCSD-09-215-15, Cambria, San Luis Obispo County, California. *Cambria Community Services District.* Environmental Specialist. Responsibilities included acoustics and air quality. This project was under a significant time constraint in order to construct and begin operating a new emergency water facility at the San Simeon well field. The new water facilities provided an emergency water supply to citizens and businesses within the unincorporated community of Cambria, San Luis Obispo County, California.

RBF-Chen-01.15. *Wenna Chen.* Project Manager. Responsibilities included acoustics and air quality.

RBF-CSC-12.2014. *City of Santa Clarita.* Environmental Specialist. Responsibilities included acoustics and air quality.

RBF-DDI-4.2016. *Dieppe Dorchester, Inc.* Environmental Specialist. Responsible for air and noise analyses.

RBF-ICHA-12.2015. *Irvine Campus Housing Authority.* Project Manager. Responsibilities included air quality and noise.

RBF-ICHA-3.2016. *Irvine Campus Housing Authority.* Project Manager. Responsible for the air quality, greenhouse gas, and noise analyses.

RBF-JanJ-4.2016. *Jan Jansson.* Project Manager. Responsible for acoustical analysis.

RBF-JCC-1.2016. *JCC Venture.* Project Manager. Responsible for the air quality and noise analyses.

RBF-KHA-10.08.15. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included air quality and noise.

RBF-KHA-7.2015. *Kimley-Horn and Associates, Inc.* Project Manager. Responsible for GHG assessment.

RBF-KHA-TR. *Kimley-Horn and Associates, Inc.* Environmental Specialist. Responsible for acoustics and air quality.

RBF-KimleyHorn-6.2015. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included acoustics and air quality.

RBF-MSA 8.26.2011. *POWER Engineers, Inc.* Project Manager. Responsibilities included acoustics and air quality.

RBF-MSA-2-9-10. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

RBF-OCSD-2-41-8. *Orange County Sanitation District.* Environmental Specialist. Responsibilities included air quality and noise.

RBF-PSA3-16-15. *Arrimus Capital.* Environmental Associate. Responsibilities included acoustics and air quality.

RBF-RBF-11. *Newland Communities.* Environmental Specialist. Responsible for the acoustical assessment.

RBF-RKouza-2.2016. *Rick Kouza.* Project Manager. Responsible for the traffic noise assessment.

RBF-SACC Golf Course. *Santa Ana Country Club.* Environmental Associate. Responsibilities included acoustics and air quality.

RBF-TML-2.2016. *Mammoth Lakes, Town of.* Environmental Specialist. Responsible for air and noise analyses.

RBF_Carlsbad #6031 7-1-13. *City of Carlsbad.* Environmental Associate. Responsibilities included acoustics.

Ridge One Addendum EIR. *City of Fontana.* Environmental Specialist. Responsible for peer reviews.

Salt Creek Trl. *POWER Engineers, Inc.* Project Manager. Responsibilities included air quality and noise.

San Rafael Corporate Center. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included acoustics and air quality.

San Sevaine Trail. *City of Fontana.* Environmental Specialist. Responsible for air and noise analyses.

SANBAG Contract C14169. *SANBAG (San Bernardino Associated Government).* Environmental Specialist. Responsibilities included air quality and noise.

Sepulveda and Panama Mixed Use Project, Carson, California. *City of Carson.* Project Manager. Responsible for CEQA documentation. Michael Baker prepared an initial study/mitigated negative declaration (IS/MND) for construction of a 95,900-square-foot affordable senior residential/commercial mixed use development. Key issues included short- and long-term air quality impacts, hazardous materials, hydrology and water quality, traffic, and noise. In addition, Michael Baker evaluated potential hazardous materials impacts based on various hazardous materials technical reports, including a Phase I Environmental Site Assessment, Phase II Environmental Site Assessment, and Report of Additional Subsurface Assessment.

South Campus Specific Plan Environmental Impact Report, El Segundo, California. *City of El Segundo.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the environmental impact report for the El Segundo South Campus Specific Plan, including a multi-jurisdictional, multi-phase traffic impact analysis. Michael Baker's services included a wide range of detailed technical studies, including air quality, noise, and traffic, for four development alternatives and a no-development alternative.

S.R. 60/ Archibald Interchange. *SANBAG (San Bernardino Associated Government).* Environmental Specialist. Responsibilities included air quality and noise.

Sundance North Studies. *Pardee Homes.* Environmental Specialist. Responsible for the Acoustical Assessment.

Sundance P.A. 41-47 Conceptual. *Pardee Homes.* Environmental Specialist. Responsible for acoustical analysis.

Temecula Creek Inn Wildlife Corridor Study, Temecula, California. *City of Temecula.* Environmental Specialist. Responsible for the air quality, greenhouse gas, and noise analyses. Michael Baker prepared a wildlife corridor analysis for the proposed Temecula Creek Inn redevelopment project. The redevelopment would convert the existing 27-hole Temecula Creek Inn golf course into a resort community with a full service hotel, an 18-hole championship golf course, single family residential units, and several resort-type amenities. Michael Baker biologists reviewed several reports on wildlife movement through and around the project site, as well as previously prepared Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) compliance documents and relevant sections in the MSHCP for a proposed wildlife corridor located along the northern boundary of the

project site in association with Temecula Creek. Specifically, the redevelopment was analyzed for its potential affects to the movement of mountain lions (Felis concolor) through the proposed corridor.

Transportation Corridor Agency (TCA) Tesoro Extension, Orange County, California. *Transportation Corridor Agencies.* Environmental Planner. Responsibilities included acoustics and air quality. The 241 Tesoro Extension would extend the 241 Toll Road from its current terminus at Oso Parkway to Cow Camp Road in the vicinity of Ortega Highway. Extending the 241 Toll Road will provide an alternative route to the heavily traveled I-5 and local streets.

Upland General Plan Update and EIR, Upland, California. *Design, Community & Environment (DC&E).* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report (EIR); a climate action plan; and supporting technical analyses for air quality, greenhouse gas emissions, and noise for the city's General Plan Update, Zoning Code Update, Climate Action Plan, and Cable Airport Land Use Compatibility Plan Update. The General Plan Update focused on land use, transportation/circulation, sustainability, and community health. The update focused on land use, transportation/circulation, sustainability, and community health. The EIR evaluated the environmental impacts resulting from the anticipated growth over existing conditions (2008) that would occur with implementation of the General Plan and developed mitigation measures to reduce impacts to below the level of significance for land use and planning, aesthetics, transportation/traffic, noise, cultural resources, and biological resources.

VA Cemetery - Phoenix. *HDR Engineering, Inc.* Environmental Associate. Responsibilities included acoustics and air quality.

Van Buren Boulevard Widening. *POWER Engineers, Inc.* Project Manager. Responsibilities included acoustics and air quality.

Walerga Road Tank/Booster Sta. *California American Water.* Environmental Associate. Responsibilities included acoustics and air quality. Michael Baker was responsible for design of a 2.5 million gallon above-ground welded steel tank and associated 3,500 gpm booster station. The project site is adjacent to the Dry Creek watershed, a proposed County park facility, and a proposed subdivision, which required creative grading, extensive environmental permitting, and coordinated construction sequencing.

Warehouse Development Environmental Impact Report, San Bernardino County, California. *Western Realco.* Environmental Specialist. Responsible for the greenhouse gas analysis and health risk assessment, as well as the air quality and noise peer reviews. Michael Baker provided environmental services for the development of a warehouse project in the Bloomington Community. Michael Baker's services included the preparation of a focused environmental impact report evaluating air quality, cultural resources, greenhouse gasses, land use, hazardous materials, and transportation to satisfy California Environmental Quality Act requirements. Michael Baker also peer reviewed applicant-provided technical studies and performed greenhouse gas and health risk assessments. Key environmental concerns included the presence of historic age structures to be demolished, land use changes, air quality impacts on residents and schools, and neighborhood traffic impacts.

Wastewater Collect. Yard Reloc. *Escondido, City of.* Environmental Specialist. Responsibilities included air quality and noise.

Whittier Narrows Dam. *RVA Corporation.* Environmental Specialist. Responsible for acoustics and air quality.

Wildlands, Oceanside, California. *MasterCraft Homes Group, LLC.* Environmental Specialist. Responsible for air and noise analyses.

Willow Springs Solar Array - Mojave Desert, Kern County, California. *First Solar, Inc.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker was responsible for the preparation of a Land Use Application Package submittal, which included a Conditional Use Permit Application, Street or Public Easement Vacation Application, General Plan Amendment Application, and a Zone Change Application. The Willow Springs Solar Array Land Use Application was approved by the Kern County Planning Department in December 2009.

Interstate 10/Avenue 50 Interchange, Coachella, California. *Ram Investments.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a project study report and provided state and federal environmental documentation for the I-10/McNaughton Parkway Interchange project. The work was processed through Caltrans District 8. The project involved significant agency coordination, including Federal Highways Administration, U.S. Fish and Wildlife Service, State Historic Preservation Office, California Department of Fish and Wildlife, and Bureau of Land Management. The environmental document was a joint initial study/environmental assessment (IS/EA). Michael Baker facilitated the preparation of all required CEQA/NEPA studies, which included an initial site assessment (ISA), historic property survey report (HPSR)/archaeological survey report (ASR), historical architectural evaluation, natural environment study/biological assessment with focused surveys, acoustical analysis (per TNAP), Section 4(f) evaluation, CO hotspots analysis, location hydraulic study, and air quality conformity analysis.

Under Ocean Floor Seawater Intake and Discharge Demonstration Project, Long Beach, California. *City of Long Beach.* Environmental Associate. Evaluated impacts for the environmental documentation. Michael Baker prepared California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documentation for subsurface seawater intake and discharge demonstration project proposed by the Long Beach Water Department. The project included the construction of two collection caissons, one wet well, infiltration screens, and interconnection pipelines. Primary environmental issues included aesthetic impacts to beach users and surrounding receptors, noise, coastal land use consistency, and marine biological impacts.

Glendora General Plan 2025, Glendora, California. *City of Glendora.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker assisted the City in updating its General Plan, which was last updated in 1992. Since then, the City had undergone important changes, including an expanding interest in improving the quality of life for the community, a renewed interest in long range planning issues, interest in revitalizing older commercial areas or corridors (i.e., Route 66), and interest in developing strategies for undeveloped and underdeveloped properties in the foothills. The update included an extensive public participation effort and an update to the land use, circulation, conservation, open space/recreation, safety, noise, and air quality elements. The plan was named Glendora Community Plan 2025 to reflect the community's involvement in crafting and implementing the plan.

Pacific Gateway Plaza Mitigated Negative Declaration Project, Seal Beach, California. *City of Seal Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the initial study and mitigated negative declaration for the Pacific Gateway Plaza Project, a 4.47-acre proposed development with a hotel, retail shops, and fast-food restaurants. Michael Baker assessed impacts to assessed impacts to aesthetics, land use, air quality, noise, hydrology, and several other impact categories, and conducted long-term noise monitoring at an adjacent site to address noise concerns during construction and operations.

Ucr/student Academic Bld (c), Riverside, California. *UC Riverside.* Environmental Specialist. Responsibilities included acoustics and air quality.

Dana Point Harbor Revitalization - EIR, Dana Point, California. *County of Orange.* Environmental Specialist. Evaluated impacts for the environmental documentation. Michael Baker prepared a Program EIR for this high profile coastal revitalization project. Key environmental issues included: construction-related access for businesses and visitors, temporary off-site staging and parking areas, long-term changes in parking and access, traffic, coastal access, coastal visual impacts, regulatory agency permitting issues, compliance with local plans/policies including the Coastal Act, marine biological resources (including shorebirds), and water quality. One of the project's many objectives was to improve water quality through incorporation of state-of-the-art BMP measures, as well as exploring potential diversion opportunities to reduce water quality issues at the popular Baby's Beach.

Watsonville/general Plan Update Eir(c), Watsonville, California. *City of Watsonville.* Environmental Specialist. Responsibilities included acoustics and air quality.

Shoreline Gateway EIR, Long Beach, California. *City of Long Beach.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an initial study and environmental impact report (EIR) for a mixed-use development involving high-rise residential towers and retail/gallery space.

Seal Beach/rmc Bikeway (c), Seal Beach, California. *City of Seal Beach.* Environmental Specialist. Responsible for CEQA document.

Garvey Villas Initial Study / Mitigated Negative Declaration, Monterey Park, California. *City of Monterey Park.* Environmental Specialist. Responsible for CEQA document preparation. Michael Baker provided a mixed-use infill circulation and operations analysis and air and noise modeling for the Garvey Villas, a proposed mixed-use development on a 2.09-acre site with retail and restaurant uses on the ground level and 108 residential units on four levels above the commercial area. Key project issues included traffic, parking, land use, and visual effects.

S.R. 57 Northbound Widening - Project Study Report, Project Report and Environmental Document (Orangethorpe Avenue to Lambert Road), Orange County, California. *Orange County Transportation Authority (OCTA).* Environmental Specialist. Responsible for air quality assessment. Michael Baker worked with OCTA to prepare a Project Report and Environmental Document (MND) for 4.9 miles of mainline widening of northbound S.R. 57 through the cities of Placentia, Fullerton and Brea from Orangethorpe Avenue to Lambert Road. The project included the widening of 13 bridge structures, retaining walls, sound walls and drainage improvements, and involved an extensive public outreach effort focused on gaining citizen input and community support. The total constructed value of the project is estimated at $117 million.

Dana Point Town Center Plan Initial Study / Mitigated Negative Declaration, Dana Point, California. *Dana Point, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the initial study and mitigated negative declaration for the Dana Point Town Center Plan. Major issues addressed included aesthetics, air quality, cultural resources, geology, hydrology, noise, public services, traffic, and utilities.

Mariner's Mile Gateway Initial Study / Mitigated Negative Declaration, Newport Beach, California. *City of Newport Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed the initial study and prepared the mitigated negative declaration for Mariner's Mile Gateway; a 56,000-square-foot commercial center and subterranean parking garage with 46,000 square feet of retail space at grade. As part of the project, S.R. 1 would be widened from two to three lanes. Key project issues included air quality,

geology and soils, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic.

Palmdale Transit Village Specific Plan EIR, Palmdale, California. *City of Palmdale.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided environmental services for the Palmdale Transit Village Specific Plan. The project involves residential and mixed-use residential-retail and office uses and roadway and landscaping improvements.

Louise Avenue, Lathrop, California. *Lathrop, City of.* Environmental Planner. Responsibilities included acoustics and air quality.

Murrieta Municipal Production Well (c), Murrieta, California. *Western Municipal Water District.* Environmental Specialist. Responsibilities included acoustics and air quality.

San Gabriel Center EIR, San Gabriel, California. *City of San Gabriel.* Environmental Specialist. Responsible for CEQA document. Michael Baker prepared the Environmental Impact Report (EIR) for the San Gabriel Center project, which proposes three mixed use buildings. The approximately 2.9-acre project site is currently developed with 37,000 square feet of commercial uses and one dwelling unit. The proposed project would redevelop the project site with a mixed-use development consisting of 18,000 square feet of commercial space and 159 dwelling units. The proposed project would be a four-story mixed-use development, with three floors of residential uses above one floor of street level retail and restaurant uses. Additionally, two levels of subterranean parking for the residential uses and one level at-grade parking for the commercial uses are proposed.

Pacific Coast Highway / 2nd Street Improvement Mitigated Negative Declaration, Long Beach, California. *City of Long Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an initial study/mitigated negative declaration for the Pacific Coast Highway/2nd Street Improvement Project, which included improvements to the intersection at Pacific Coast Highway (PCH) and 2nd Street to eliminate a narrowing of the roadway at the intersection and provide a consistent right-of-way roadway width north of 2nd Street.

Marymount College Facilities Expansion EIR, Rancho Palos Verdes, California. *City of Rancho Palos Verdes.* Environmental Associate. Evaluated impacts for the EIR. Michael Baker prepared an environmental impact report (EIR), including a detailed traffic and parking analysis, for renovation to the Marymount College Campus, which consisted of the modernization and expansion of existing buildings, construction of new academic and student housing buildings, and relocation and reconfiguration of recreational facilities and parking. Key environmental topics included geologic stability, drainage and water quality, traffic and circulation, parking capacity, and visual/view simulations from various locations surrounding the site.

Downtown and Central Long Beach Redevelopment Plans Master EIR, Long Beach, California. *City of Long Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a Master EIR for 10 non-contiguous areas located within Downtown and Central Long Beach. The project area is part of two redevelopment project areas: The Downtown Redevelopment Project Area and Central Long Beach Redevelopment Project Area.

City Of Coachella - Villa Palmeras (c), Coachella, California. *Alliance Development Group.* Environmental Specialist. Responsibilities included acoustics and air quality.

Murrieta/california Oaks No. 99-184, Murrieta, California. *City of Murrieta.* Environmental Specialist. Responsible for air quality assessment.

Interstate 10 / Singleton Road Interchange Improvements, Calimesa, California. *SCC Acquisitions, Inc.* Environmental Planner. Responsible for air quality assessment. Michael Baker prepared the project study report and project report for modifications of the I-10/Singleton Road Interchange to provide a conventional diamond interchange with construction of a new direct eastbound exit ramp and a new direct westbound entrance ramp. Michael Baker also performed a visual impact assessment for the interchange.

13-Acre Retail / Commercial Project IS/M, Cypress, California. *City of Cypress.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed an initial study/mitigated negative declaration for a new retail shopping center at the northwest corner of Katella Avenue and Winners Circle. The site would be divided into four retail tenant spaces, one free-standing restaurant pad, and three retail or quick-service restaurant buildings. The site is currently utilized as a parking area for Los Alamitos Race Track. Primary issues analyzed included air quality, noise, traffic impacts, and water quality. Michael Baker prepared a water quality management plan.

The Vineyards at Menifee, California. *Palm Desert Development Company.* Environmental Specialist. Responsible for the air quality assessment.

Mammoth Lakes Public Facility Building, Mammoth Lakes, California. *Mammoth Lakes, Town of.* Environmental Specialist. Responsibilities included acoustics and air quality.

Equinix Data Center Project - EA 893 IS/MND and Addendum, El Segundo, California. *City of El Segundo.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared both the Initial Study / Mitigated Negative Declaration (IS/MND), and the Addendum to the IS/MND for the Equinix Data Center project located at 445 North Douglas Street, in the City of El Segundo. The original project involved the expansion and renovation of a two-story office building/warehouse. The building would be expanded to 320,713 square feet and 52 feet in height. Building renovations were proposed in the entrance lobbies, office space, collocation server warehouse, and service bay.

40 Unit Residential EA, Lancaster, California. *Lancaster, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental assessment (EA) for a proposed 40-unit housing project. The EA was prepared in accordance with HUD guidelines and in compliance with NEPA requirements.

East Campus Child Development Center, Riverside, California. *UC Riverside.* Environmental Specialist. Responsibilities included acoustics and air quality.

Mammoth Airport Environmental CEQA, Mammoth Lakes, California. *Mammoth Lakes, Town of.* Environmental Specialist. Responsibilities included acoustics and air quality.

The Clearwater Specific Plan Environmental Impact Report, Mammoth Lakes, California. *Mammoth Lakes, Town of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report (EIR) for the Clearwater Specific Plan, which proposes condominium hotel units, work-force housing, retail and restaurant facilities, and internal courtyard and landscape areas. Due to the high density nature of the project, neighborhood compatibility was a primary concern, as surrounding land uses consisted of

mostly low- and medium-density uses. The EIR included an evaluation of traffic, parking, aesthetics, noise, air quality, global climate change, fiscal impacts, land use, and utilities.

BART Replacement Parking Facility Initial Study / Mitigated Negative Declaration, Hercules, California. *Hercules, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an Initial Study/Mitigated Negative Declaration for the proposed relocation and replacement of the existing BART park and ride facility in the City of Hercules. The project consisted of the exchange of an existing parcel owned by BART for a City-owned parcel; the subsequent construction of a replacement parking facility; access improvements to Willow Avenue; assistance to the Western Contra Costa County Transit Authority to restructure and reschedule its routes; and the addition of a pedestrian and bicycle pathway. Key environmental issues included potential impacts to wetlands and riparian habitat, hazardous materials, and pedestrian and vehicular circulation.

Great Exchange Covenant Church, Santa Clara, California. *Great Exchange Covenant Church.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker provided California Environmental Quality Act (CEQA) documentation for the conversion of a light industrial use building for use as a church. Environmental issues included sensitive receptors and possible exposure to volatile organic compounds (VOC) due to proximity to industrial uses, traffic, and parking.

Design Svcs-SR241 Loma Segment Widening, Uninc, California. *Transportation Corridor Agencies.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker provided preliminary design of the S.R. 241 Loma Segment Widening Project. The project was performed to widen S.R. 241 in the southbound direction by one lane between Chapman Avenue and S.R. 133 and shift all southbound lanes onto a split-level separate road bed previously graded by the Eastern Transportation Corridor project. The five-mile long widening was needed to prevent congestion along the route during A.M. peak period hours.

Riverside/Fox Plaza EIR, Riverside, California. *City of Riverside.* Environmental Specialist. Responsible for CEQA document preparation.

2200 Delaware Mixed-Use Project EIR and Traffic Impact Study, Santa Cruz, California. *City of Santa Cruz.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared the Environmental Impact Report (EIR) and the Traffic Impact Analysis (TIA) for this project located in the Westside area of the City of Santa Cruz. Environmental issues addressed in the EIR included: Air quality, geology and soils, hazardous materials, hydrology and water quality, transportation and traffic, and public services and utilities.

Cambria Csd/addendum No. 1, Cambria, California. *Cambria Community Services District.* Environmental Associate. Responsibilities included acoustics and air quality.

Cambria CSD/addendum No. 2, Cambria, California. *Cambria Community Services District.* Environmental Specialist. Responsibilities included acoustics and air quality.

Cambria CSD/Water Master Plan EIR, Cambria, California. *Cambria Community Services District.* Environmental Associate. Responsibilities included acoustics and air quality.

Stanton General Plan EIR, Stanton, California. *City of Stanton.* Environmental Specialist. Responsibilities included acoustics and air quality.

South Pasadena Downtown Revitalization Project EIR, South Pasadena, California. *South Pasadena, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an initial

study and environmental impact report (EIR) for the Downtown Revitalization Project, which included redevelopment of five building sites within a three block area. The project included mixed-use residential, retail, restaurant, office, bank, and parking uses as well as pedestrian paths, gathering spaces, and a town square.

Interstate 10/Jefferson Street Interchange Improvements, Indio, California. *Riverside Co. Transportation Dept.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed environmental and engineering services for the preparation of the project report (PR), modified access report (MAR), and plans, specifications, and estimate for I-10/Jefferson Street interchange improvements. This project will balance several complex geometric constraints to eliminate the discontinuity of the arterial street through movements within the interchange. The interchange is included in the I-10 Corridor Plan, prepared by the Coachella Valley Association of Governments (CVAG), which requires specific architectural and landscape treatments to the improved or new interchanges located within the plan. The modifications included replacement and relocation of the Jefferson Street/I-10 overcrossing, additional loop on-ramps, and realignment of Varner Road and Jefferson Street. Michael Baker was responsible for alternatives analysis and design, environmental investigations, roadway design, traffic studies, drainage studies, and structure advance-planning studies. Working closely with Caltrans and the City of Indio, Michael Baker provided a wide range of environmental consulting services. Michael Baker prepared the following studies in support of a joint initial study-environmental assessment (IS/EA): Visual impact analysis (VIA); noise impact report, per TNAP; initial site assessment; natural environment study; report-biological assessment, HPSR/ASR/AER; air quality report and CO hotspot analysis; Section 7 consultation; and Section 106 compliance. In addition, Michael Baker developed the final plans, specifications, and estimates. Preparation of construction plans included roadway layouts and profiles, bridge plans, retaining walls, grading, drainage, signing and striping, traffic signal, lighting, and staged construction.

The Shoppes at Chino Hills and Chino Hills Community Park and Civic Center Project Environmental Impact Report, Chino Hills, California. *City of Chino Hills.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an addendum environmental impact report for an amendment to the Shoppes Specific Plan, a mixed-use development that includes commercial, residential, civic, hotel, and community park uses on approximately 100 acres in the City of Chino Hills. The project was successfully completed under an extremely tight deadline set by the city.

High Tech High Environmental Services(c), Chula Vista, California. *HTH Learning.* Environmental Specialist. Responsibilities included acoustics and air quality.

601 North Parkcenter Drive, Santa Ana, California. *City of Santa Ana.* Environmental Specialist. Responsibilities included acoustics and air quality.

Loma Rica Ranch Specific Plan EIR, Grass Valley, California. *Grass Valley, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an EIR for the proposed Loma Rica Ranch Specific Plan, a mixed-use sustainable community-based project developed on approximately 452 acres located east of the City of Grass Valley. The project would involve annexation of the project site to the city, and an amendment to the City's General Plan that would allow development of residential, light industrial, business park, retail, commercial, and open space uses, and an organic farm. Michael Baker assisted the City with community outreach as part of the environmental review process.

College Boulevard Widening Project Study Report, Oceanside, California. *City of Oceanside.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared a project study report and preliminary concept plans for the possible impacts of widening 2.1 miles of College Boulevard from Waring Road to Old Grove Road. The project involved evaluating alternatives for widening or improving traffic flow along College

Boulevard for three distinct sections individually and for the corridor as a whole. Alternatives were analyzed such as lane width reduction, median width reduction, retaining wall construction, and utility relocation/adjustment. Michael Baker provided a traffic assessment, initial study, preliminary engineering plans, cost estimates, and a feasibility assessment. Michael Baker presented the project study report and preliminary concept plans to the city's Traffic Commissioner and City Council.

Henry Mayo Newhall Memorial Hospital Master Plan EIR, Santa Clarita, California. *City of Santa Clarita.* Environmental Planner. Responsible for CEQA document. Michael Baker prepared the environmental impact report for the proposed long-term master plan for the hospital and medical office buildings. The master plan will provide additional enhanced inpatient and outpatient treatment capacity over a 15-year period.

Osborne Hill EIR, Nevada County, California. *County of Nevada.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report (EIR) for a 224-acre, 56-lot, clustered residential subdivision that will include single-family lots and multifamily townhomes. Michael Baker prepared a tentative final map to subdivide the land, prepared applications for rezoning and a use permit, and addressed traffic and circulation, sanitation and sewage disposal, wildfire safety, fuel modification, and hazardous materials in the EIR.

Main Street Widening, Orange, California. *Orange, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an Initial Study with Proposed Mitigated Negative Declaration for the City of Orange. The city proposes to widen Main Street from Chapman Avenue to Culver Avenue, approximately 1,800 linear feet; restripe the existing roadway between Culver Avenue and La Veta Avenue, approximately 500 linear feet; and improve an existing water line within the Main Street right-of-way, from 300 feet south of Chapman Avenue to the Orange-Santa Ana city boundary near State Route 22, approximately 4,000 linear feet. Specific issue areas include air quality, noise, hazardous materials, and removal of existing parking.

La Bahia Recirculated EIR(C), Santa Cruz, California. *City of Santa Cruz.* Environmental Specialist. Responsible for acoustics and air quality.

Downtown Area Mixed Use Project(MS), Huntington Park, California. *Huntington Park, City of.* Environmental Specialist. Responsible for acoustics and air quality.

Fullerton General Plan Update and EIR / Fullerton General Plan Appendix: Implementation Strategy for Updating the Zoning Code, Fullerton, California. *Fullerton, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker worked with the City of Fullerton to update the general plan and environmental impact report. This process included data collection and analysis, formulation and organization of goals, policies and objectives, coordination of interagency meetings, and extensive community outreach.

Pacific Trade Center Environmental Impact Report, El Monte, California. *Xebec Realty Partners.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report for a 27-acre commercial and industrial project. Michael Baker's services included a hazardous materials investigation; traffic, land-use, air quality, and noise analyses; and agency coordination.

The Sherwin Project EIR, Mammoth Lakes, California. *Mammoth Lakes, Town of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared the environmental impact report (EIR) for The Sherwin Project, which proposes a year-round resort facility that would include a 109-unit condominium hotel with a subterranean parking structure; retail, restaurant, and bar facilities; a lobby-reception area; a spa and fitness center; a conference center; and an environmental education center. The project is located

within the urban fringe of the Town of Mammoth Lakes. Mammoth Creek traversed the central portion of the project site.

South San Diego Bay Wetland Restoration - Environmental Compliance, San Diego County, California. *Southwest Wetlands Interpretive Assoc.* Environmental Specialist. Responsible for the acoustical analysis. Michael Baker provided environmental analyses and documentation services for the South San Diego Bay Wetland Restoration Project. The project, which consists of the Western Salt Ponds restoration and the Chula Vista Wildlife Reserve restoration, involves the overall restoration and enhancement of approximately 257acres of coastal wetland habitat in South San Diego Bay. Michael Baker performed air quality, traffic, and noise analyses to draft a mitigated negative declaration and environmental assessment in compliance with the California Environmental Quality Act and the National Environmental Policy Act.

Southwest Industrial Park Specific Plan, Fontana, California. *Fontana, City of.* Environmental Specialist. Responsible for CEQA document. Michael Baker managed the update to the existing Southwest Industrial Park Specific Plan in the City of Fontana. The original plan was composed of four project areas totaling approximately 1,863 acres within the southern portion of the City. The updated plan expanded to approximately 3,200 acres, encompassing a mixture of residential, commercial, and industrial uses recently annexed by the city. Michael Baker prepared an updated set of design guidelines as part of the plan.

Rialto/Comm. Retail Ctr.-Walmart, Rialto, California. *Rialto, City of.* Environmental Specialist. Responsibilities CEQA document preparation.

Hercules New Town Center(C), Hercules, California. *Hercules, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an EIR for the Hercules New Town Center (NTC) project. The EIR was prepared at the program level for proposed amendments to the City's General Plan and Zoning Ordinance to create an NTC land use designation and zoning district that would allow development of a mixed-use, vibrant, urbanized, transit-oriented town center. The EIR was also prepared at the project level for the first phase of development, which proposed residential, retail, office, and parking space on a 6.62-acre parcel in the NTC planning area. Issues included potentially significant traffic, noise, and air quality impacts given existing traffic conditions in the planning area and its close proximity to Interstate 80 and State Route 4.

Wells 21 and 22 Preliminary Design, Irvine, California. *Irvine Ranch Water District.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker provided engineering services to rehabilitate two wells, Wells 21 and 22, and provide preliminary design of facilities needed to treat and deliver this water into IRWD's Zone 1 potable water system. The 3,200-gallon-per-minute and 1,200-gallon-per minute wells have been idle for more than 15 years due to poor water quality from high nitrate levels, high levels of total dissolved solids, and high total hardness levels. Michael Baker studied the feasibility of blending groundwater from Wells 21 and 22 with DRWF or MET water, and prepared a preliminary design report for IRWD's use in moving forward with the project's final design.

I-10 Interchg Add. No. 2 & 3, Indio, California. *City of Indio.* Environmental Specialist. Responsible for Air Quality Assessment.

Buena Park General Plan and EIR, Buena Park, California. *City of Buena Park.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared the Buena Park 2035 General Plan Update and Program EIR. The General Plan Update began with a community outreach process, resulting in the creation of a 25-year vision statement that is directly reflective of the priorities identified by the community. The General Plan identified key focus areas that the City anticipated will have the highest likelihood of

change through redevelopment and new development over the life of the General Plan. In addition to text descriptions, the 2035 General Plan creatively incorporated land-use snapshots with call-outs, photographs, case studies, renderings, three-dimensional illustratives, and graphic exhibits to visually convey the desired vision for each of the focus areas, and for the community at large.

Crestridge Senior Villas and Palos Verdes Peninsula Senior Center EIR, Rancho Palos Verdes, California. *City of Rancho Palos Verdes.* Environmental Specialist. Responsible for CEQA documentation. The Crestridge Senior Villas project involves an infill development of a vacant 9.76-acre parcel, surrounded by single- and multi-family residential developments. For more than a decade, the project underwent multiple site plan modifications and corresponding environmental analyses, in response to City and resident concerns. The project proposed five primary components: the Crestridge Senior Villas Condominiums; the Crestridge Senior Villas Townhome Condominiums; the Palos Verdes Peninsula Senior Center; a new roadway; and a passive open space area. The senior condominium development includes 80 for-sale condominium and townhome units (age-restricted) dispersed throughout seven multi-story buildings. The senior townhome development includes five for-sale units (age-restricted) in one two-story structure. The senior center involves a 14,500-square foot, two-story 28-foot high structure.

Nash Street Data Center Initial Study / Mitigated Negative Declaration, El Segundo, California. *City of El Segundo.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker provided an initial study/mitigated negative declaration for the Nash Data Center project, which involved renovating and expanding an existing industrial structure from 82,857 square feet to 116,756 square feet. The analysis reviewed construction and buildout of the facility, with a focus on emission from electrical power usage. The project also included exterior improvements and aesthetic enhancement. The traffic and noise studies concluded no substantial affect to the local area.

Hawaiian Gardens General Plan Environmental Impact Report, Hawaiian Gardens, California. *Hawaiian Gardens, City of.* Environmental Planner. Evaluated impacts for the environmental documentation. Michael Baker prepared the Hawaiian Gardens General Plan Update Program EIR which evaluated potential environmental impacts resulting from revisions to the City's General Plan. The current update includes revisions to the existing land use, circulation, housing, conservation, open space and recreation, noise, safety, air quality / waste, economic development, capital improvements elements, and the addition of the community design element. The goal of the update was not to make dramatic changes to the City's existing land use policy map, but rather to quantify remaining development in a way that can be correlated to existing uses and conditions, while at the same time capitalizing on future development and / or redevelopment potential.

PV-22a&b CUP/CEQA, California. *Edison Mission Energy.* Environmental Specialist. Responsibilities included acoustics and air quality.

Vacation Village MND (c), Laguna Beach, California. *Vacation Bay Hotel Properties Inc.* Environmental Specialist. Responsibilities included acoustics and air quality.

Southbay Substation Proponent's Environmental Assessment, Chula Vista, California. *San Diego Gas & Electric.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a Proponent's Environmental Assessment (PEA) for San Diego Gas and Electric's (SDG&E) Southbay Substation Project. The PEA provided environmental analysis for both the construction and operations of the Southbay Substation in order to increase reliability to the customers and substations in the San Diego region. Critical issues included potential impacts to wetland and upland biological habitats, visual impacts, noise, air quality, and land use compatibility.

Pacific Edge Hotel Noise Analysis, Laguna Beach, California. *City of Laguna Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a traffic impact analysis addressing the conversion of the Villa single-family dwelling unit and attached outdoor deck to assembly use, with a permanent bar on the Villa deck and the addition of one room to the Pacific Edge Hotel, for a total of 131 rooms. The traffic study reviewed potential project traffic impact at the study intersections, utilizing applicable agency thresholds of significance. The study also included a section for review of state highway intersections, based on Caltrans criteria and adopted methodologies.

Salt Creek Heights Subdivision EIR, Redding, California. *Redding, City of.* Environmental Specialist. Evaluated impacts for the environmental documentation. Michael Baker prepared the Environmental Impact Report for the proposed Salt Creek Heights Project located within the western portion of the City of Redding. This controversial development project, located over a former mining area near the Sacramento River, consists of approximately 272 acres of undeveloped land, with approximately 100 acres that are suitable for development. Salt Creek forms the western and northern boundaries of the proposed project and Gold Run Creek forms the eastern project boundary.

Fontana SWIP Redevelopment EIR, Fontana, California. *RSG Inc. (Rosenow, Spevacek Group Inc.).* Environmental Specialist. Responsibilities included acoustics and air quality.

Campus Point Senior Noise Study, Fresno, California. *Professional Constructors INC.* Project Manager. Responsible for acoustical analysis.

Engineering and Design Services for Reduced High Zone Improvements, Laguna Woods, California. *El Toro Water District.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker worked with the El Toro Water District to evaluate the fire-flow availability that is currently supplied to the reduced high zone. Michael Baker concluded through a field flow test and hydraulic model evaluations that the required fire flow cannot be supplied based on the current water system configuration. Based on this information and discussions with the district, Michael Baker provided professional engineering services for the design of water improvements in the reduced high zone. The scope of work included design plans, technical specifications, and an estimate of probable construction cost to publicly bid the project for construction. Michael Baker also provided engineering support throughout the bidding and construction process.

Lasselle Winco Retail Project Traffic Analysis, Moreno Valley, California. *Winco Foods.* Environmental Planner. Responsible for acoustical assessment. Michael Baker prepared a traffic impact analysis addressing the proposed Lasselle Retail Project at the northeast corner of the Lasselle Street/Alessandro Boulevard intersection. The proposed project consists of 142,000 square feet of retail in the City of Moreno Valley. The study includes near-term analysis with eight approved or pending projects. Michael Baker analyzed on-site circulation and driveway access for the proposed project. The study reviewed potential project traffic impacts at study intersections, utilizing applicable agency thresholds of significance.

Target Store EIR, San Rafael, California. *San Rafael, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an EIR for a 137,000-square-foot Target store proposed in the City of San Rafael. Key environmental issues included aesthetics, hazardous materials, biological resources and traffic impacts. Following certification of the Final EIR, the City requested that Michael Baker prepare an Addendum EIR, which would address any minor changes; document that no new impacts would occur; and evaluate potential impacts associated with greenhouse gas emissions in keeping with the Bay Area Air Quality Management District CEQA Guidelines.

Stockdale EIR (MS), Bakersfield, California. *City of Bakersfield.* Environmental Specialist. Responsibilities included acoustics and air quality.

Interstate 15 / California Oaks Road Interchange Modification, Murrieta, California. *City of Murrieta.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared final plans, specifications, and cost estimate (PS&E) for the Interstate 15/California Oaks Road interchange modification project. The improvements included reconfiguring the existing diamond interchange into a modified partial cloverleaf configuration; widening and lowering California Oaks Road to accommodate three through lanes in each direction, and the required vertical clearance to the mainline undercrossing structures; bridge widening of two separate undercrossing structures; retaining walls (one Type 1 wall and two tie-back walls); drainage improvements, including an infiltration basin; utility relocations; traffic signal improvements at two intersections; and electrical improvements to lighting and ramp metering equipment.

Town of Los Gatos GP Update, Los Gatos, California. *Design, Community & Environment (DC&E).* Environmental Specialist. Responsibilities included acoustics and air quality.

State Route 186 / Interstate 8 Interchange, Various, California. *Dokken Engineering.* Environmental Specialist. Responsible for the air quality assessment. Michael Baker provided a suite of environmental consulting services for this project that involved roadway improvements and modifications to the existing bridge and interchange. Michael Baker worked closely with Caltrans, Dokken Engineering, the Quechan Indian Tribe, and various subconsultants.

Antelope Valley Rural Smart Growth Plan, Antelope Valley, California. *Southern California Association of Governments.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker developed a greenhouse gas emission inventory; created GIS-based carbon footprint maps; and prepared bubble-level rural smart growth concepts, hand rendered concepts, and photorealistic before and after visualizations.

Hampton Inn & Suites Initial Study / Mitigated Negative Declaration, El Segundo, California. *City of El Segundo.* Environmental Specialist. Responsible for CEQA document preparation. Michael Baker provided an initial study/mitigated negative declaration for the Hampton Inn & Suites project located on a 2.7-acre parcel within the El Segundo corporate office area. The project involved development of 150 guest rooms, a patio, an outdoor pool/spa, and a parking structure. The four-story structure included stucco and stone treatments and approximately 7,000 square feet of landscaping. The environmental review included detailed analysis for traffic, construction staging, air, noise affects, and visual resources.

General Plan Update EIR, South Gate, California. *South Gate, City of.* Environmental Specialist. Responsibilities included acoustics and air quality.

Hacienda at Fairview Valley EIR, San Bernardino County, California. *County of San Bernardino.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared an environmental impact report for the Hacienda at Fairview Valley project, located in unincorporated San Bernardino County, near Apple Valley. The 1,557-acre site is located between the Granite and Fairview mountain ranges and is surrounded by vacant land and several larger-lot single-family residences. In addition, portions of the project site abut BLM land. The project includes the development of 3,114 residential units, 15 acres of neighborhood commercial uses and a public safety complex, and 336 acres of open space. The majority of the residential units would be deed-restricted active-adult units. Major environmental issues include aesthetics, biological resources, seismicity, traffic, public services, public utilities, and emergency access.

Mission Park & Ride Project EIR, San Gabriel, California. *City of San Gabriel.* Environmental Specialist. Responsible for CEQA document preparation.

Naples Seawall Interim and Long Range Repair IS/MND, Long Beach, California. *City of Long Beach.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared the initial study/mitigated negative declaration (IS/MND) for the Naples Seawall Interim and Long Range Repair project. Michael Baker performed a stability investigation of the concrete sheet pile seawall and developed concepts for interim and long-range repairs. Interim repairs were designed to assist in the temporary stabilization of the seawall until funding became available for long-range repairs (seawall replacement). Project impacts were assessed for both construction and operations. Key impact areas analyzed included minimization of biological impacts to potential marine species and habitats and water quality impacts during construction.

Imperial Highway Corridor Specific Plan - SCAG Compass Blueprint Demonstration Project, La Mirada, California. *Southern California Association of Governments.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared a specific plan that established a comprehensive policy and regulatory guidance document for properties within the Imperial Highway Corridor Specific Plan area. The plan ensures that future development and redevelopment implements the vision and adopted policy for the project area. The plan considered input from the community and incorporated data and analysis to set land use priorities, economic considerations, and urban design elements to stimulate the implementation.

Terremark Data Center, Santa Clara, California. *Terremark Technology Contractors, Inc.* Environmental Specialist. Responsible for acoustics and air quality.

Interstate 5 HOV Lane Extension Project Report/Environmental Document (Avenida Pico to San Juan Creek Road), San Juan Capistrano, California.

Transystems Corporation. Environmental Specialist. Responsible for the Air Quality Assessment. Michael Baker in a subconsultant role, worked with the Orange County Transportation Authority (OCTA); Caltrans District 12; and the cities of San Clemente, Dana Point, and San Juan Capistrano to prepare a project report and environmental document for 5.7 miles of mainline widening of Interstate 5 from Avenida Pico to San Juan Creek Road. The project included the widening of four bridge structures, replacement of the Avenida Pico bridge structure, retaining walls, sound walls, drainage improvements, and an extensive public outreach effort focused on gaining citizen input and community support.

City of Bakersfield/Target Center (MS), Bakersfield, California. *City of Bakersfield.* Environmental Specialist. Responsible for acoustics and air quality.

Temple City Piazza Greenhouse Gas Analysis, Temple City, California. *City of Temple City.* Environmental Specialist. Responsible for the Greenhouse Gas Analysis. Michael Baker prepared a greenhouse gas (GHG) analysis for the Temple City Piazza project. The project included construction of up to 124,600 square feet of retail, office, restaurant and banquet facilities; 542 parking spaces contained within a parking structure; and a loading/delivery area. Michael Baker analyzed potential short- and long-term GHG emissions from construction and operation and energy conservation features. Michael Baker utilized proprietary models and emission quantification software in conjunction with site specific data to perform GHG inventories.

Parking Lots Project EIR, San Fernando, California. *San Fernando, City of.* Environmental Specialist. Responsibilities included acoustics and air quality.

Dublin Downtown Specific Plan EIR, Dublin, California. *City of Dublin.* Environmental Specialist. Responsible for acoustics and air quality.

Dumbarton Transit Oriented Development Specific Plan EIR, Newark, California. *Dahlin Group.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an Environmental Impact Report (EIR) for the Dumbarton Transit Oriented Development (TOD) Specific Plan proposed in the City of Newark. The EIR was prepared at a program-level for the Dumbarton TOD Specific Plan, which would provide comprehensive planning policy and regulatory standards to ensure quality future development and redevelopment of the Specific Plan area. The Specific Plan envisions a transit oriented community that would offer a mix of residential, retail, office, and open space uses. Approximately 2,500 housing units are proposed to meet the needs of the City and the surrounding area. Approval of the Dumbarton TOD Specific Plan would provide a broad range of new housing opportunities, retail and business opportunities, and park and open space amenities, as well as provide the necessary backbone infrastructure for the future Dumbarton Rail Corridor Transit Station.

Buena Vista Street Road Diet Evaluation, Duarte, California. *City of Duarte.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker provided a review of the built condition of Buena Vista Street to determine cross-section alternatives that would better address the needs of pedestrians, bicyclists, transit users, and motorists. Based on review of the traffic operations, collision history, field observations, surrounding land uses, transit operations, bicycle infrastructure, and traffic volumes, a Road Diet was recommended. Michael Baker worked with the city staff to illustrate traffic volumes were low enough on Buena Vista Street for a reduction of motorist lanes without affecting functional traffic operations. The reduction of the roadway cross-section from a four-lane section to a two-lane section would improve traffic operations by providing a dedicated turn lane, bike lanes, and additional on-street parking. Alternatives were recommended and reviewed in detail with city staff. In keeping with the context sensitive solutions approach, Michael Baker recommended outreach and public engagement to prioritize goals and objectives to better determine how to use the already paved roadway cross-section.

Santa Ana River Parkway - Trail and Bikeway, Orange County, California. *County of Orange.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker worked with the client, the community, and stakeholders to prepare alignment concepts, evaluate alignments, and develop preliminary construction drawings for a recommended project to complete the Santa Ana River (SAR) Bikeway and Trail system, a landscaped greenway with recreational facilities located along S.R. 91 on each side of the Santa Ana River between Gypsum Canyon Road and Featherly Regional Park and the Green River Golf Course at the Orange County boundary. Extensive coordination was required with over 30 agencies and organizations to reach a consensus on the recommended project. Michael Baker worked pro-actively with all agencies and stakeholders through a coordinated set of stakeholder and project team meetings.

Butterfield Specific Plan and EIR, Banning, California. *Pardee Homes.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report for the Butterfield Specific Plan, a 1,543-acre development that includes golf course, school sites, open space, commercial uses, and up to 5,387 residential units. Critical environmental issues included aesthetics, transportation and circulation, global warming, hydrology and water quality, and biological resources.

Indian Hill Well, Claremont, California. *Golden State Water Company.* Environmental Specialist. Responsible for the acoustical analysis.

Temecula Public Cemetery, Temecula, California. *Temecula Public Cemetery.* Environmental Specialist. Responsible for the greenhouse gas assessment.

Sespe Creek Hydrology, Hydraulics and Sedimentation Analysis, Fillmore, California. *Ventura Co. Flood Control Dist.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed a hydrology, hydraulics and sedimentation analysis for Sespe Creek. The project included a comprehensive reevaluation of the Sespe Creek watershed to identify necessary improvements and maintenance to sustain the desired channel capacities of lower Sespe Creek levee. The improvements are necessary to avoid a reduction in the level of flood protection afforded to the City of Fillmore resulting from condition changes in the watershed due to a large fire in 2006. Michael Baker recommended the use of a two-dimensional flood routing analysis to more accurately determine the actual flow conditions, and use of the results of the model to develop a more conventional one-dimensional model for processing the floodplain mapping limits through the Federal Emergency Management Agency. The Michael Baker team recommended the use of a watershed geomorphic study to assess storage and transport of post-fire sediment through the upper watershed.

The Gateway Project Subsequent MND, Temple City, California. *City of Temple City.* Environmental Specialist. Responsible for the greenhouse gas assessment.

Riverside North Aquifer and Storage Recovery Project, Riverside and San Bernardino C, California. *City of Riverside.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report and provided topographic mapping and conceptual engineering support for the Riverside Groundwater Aquifer Storage and Recovery Project, to provide groundwater recharge facilities along the Santa Ana River. The project proposes the construction of an inflatable dam across the Santa Ana River, water lines, and groundwater recharge basins for capturing and recharging stormwater and imported water on the City of Riverside's Flume Well Tract.

Rose Gardens at Santa Teresita Master Plan, Duarte, California. *City of Duarte.* Environmental Specialist. Responsible for CEQA documentation.

Weber Property Residential Development Environmental Impact Report, Danville, California. *Town of Danville.* Technical Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an Environmental Impact Report (EIR) for the proposed Weber Property Residential Development. The project proposed the construction of 22 single-family homes and a roadway connection to provide a new means of access to an adjacent middle school and alleviate traffic congestion at a nearby intersection. The EIR addressed potential project impacts on federally protected wetlands, riparian habitat, removal of trees not protected by the town's Tree Preservation Ordinance, and aesthetics. In addition, the scope addressed recent amendments to the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines, and the topics of global climate change, risk and health hazards, and forest resources.

Bonterra/Amendment No. 1, Santa Clarita, California. *Bonterra Consulting.* Project Manager. Responsibilities included acoustics and air quality.

Bonterra/recycled Water Master Pl, Santa Clarita, California. *Bonterra Consulting.* Project Manager. Responsibilities included acoustics and air quality.

Bonterra/Tesoro Del Valle Ph B&C, Santa Clarita, California. *Bonterra Consulting.* Project Manager. Responsibilities included acoustics and air quality.

Tustin Ranch Road Acoustical Assessment, Tustin, California. *Nossaman, Guthner, Knox & Elliott.* Project Manager. Responsible for acoustical analysis.

Clews Horse Ranch Permit Implementation, San Diego, California. *Clews Horse Ranch.* Environmental Specialist. Responsible for the acoustical analysis.

I-15 & 79 South PR & ED, Temecula, California. *City of Temecula.* Environmental Scientist. Responsibilities included acoustics and air quality.

Albright Air Quality/GHG Study, California. *Adamas Ventures, LLC.* Environmental Specialist. Responsible for the air quality assessment.

Albright Development Noise Study, California. *Adamas Ventures, LLC.* Environmental Specialist. Responsible for acoustical assessment.

CCCCD/Blackhawk-Nunn Property Swap, California. *Contra Costa Community College District.* Environmental Specialist. Responsible for acoustics and air quality.

I-880 N Safety Improvement Project, Multiple, California. *AECOM (formerly Watershed Concepts).* Environmental Specialist. Responsible for the air quality assessment.

L-630 New Brentwood Center - Environmental Review Services, California. *Contra Costa Community College District.* Environmental Specialist. Responsible for acoustics and air quality.

33-Unit Costa Mesa Development Initial Study / Mitigated Negative Declaration, Costa Mesa, California. *Costa Mesa, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the IS/MND for this project located at the northeast corner of the Harbor Boulevard and Merrimac Way intersection in the Costa Mesa. The project proposes 33 residential lots, seven open space lots, and a private street on approximately 3.71 acres. Project implementation would also involve a new storm drain and minor road improvements along Merrimac Way, including the removal of portions of the existing median and a striped continuous two-way left turn lane to provide access to the project site. The project required a General Plan Amendment to change the existing land use designation from General Commercial to Medium-Density Residential and a zone change to change the existing zoning from C1 (Local Business) and P (Off-Street Parking) to R2-MD (Multiple Family Residential) Light Manufacturing (M-1) to Residential High Density (RHD). Key issues included land use, hazards and hazardous materials, hydrology and drainage, noise, and traffic/circulation.

Temple Palms Business Park Project Traffic Impact Analysis, El Monte, California. *Wohl Penwood El Monte Partners.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared a traffic impact analysis for a 26.8-acre brownfield redevelopment project into approximately 500,000 square feet of industrial buildings in the City of El Monte. Michael Baker coordinated with City staff to identify baseline conditions for closed heavy industrial manufacturing facilities at the project site.

Hacienda @ Fairgrove AQ/GHG & Noise(C), California. *The Charles Company.* Environmental Specialist. Responsibilities included acoustics and air quality.

San Diego Downtown Courthouse EIR, San Diego, California. *CSC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report (EIR) for a proposed courthouse located in downtown San Diego. The AOC proposed to construct a new 71-room courthouse with approximately 750,000 below-ground square feet and approximately 17 stories. The courthouse includes construction of a tunnel to connect the new courthouse with the existing County Jail. The basement will provide secured parking for judicial officers and executives. After completion of the courthouse, the AOC will demolish the Central Courthouse building and Old Jail at a future date.

San Bernardino International Airport TIGER Grant, Highland, California. *Tom Dodson & Associates.* Environmental Planner. Responsibilities included acoustics and air quality.

Soil Safe Colton Property, California. *Soil Safe of California, Inc.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed engineering and grading design services and an EIR and accompanying technical studies for the reclamation of approximately 29 acres of land currently located within the 100-year floodplain of the Santa Ana River. To raise the elevation of the project site and provide 100-year flood protection to the property and surrounding areas, the project would import approximately 500,000 cubic yards of fill material and place it as soil cement on site until the desired grade is achieved. Issues included flood protection, hydrology and water quality, jurisdictional permitting and processing, and engineering design to accommodate future development.

Lake County Courthouse, Lakeport, California. *CSC.* Environmental Specialist. Responsibilities included acoustics and air quality.

Waste Management Material Recovery Facility, Transfer Station, and Household Hazardous Waste Facility Environmental Impact Report, Azusa, California. *Azusa, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an environmental impact report for the construction of a waste management material recovery facility, transfer station, and household hazardous waste facility at the Waste Management Azusa Land Reclamation Landfill. The proposed facility will include a 125,000-square-foot processing facility with offices, and a 5,400-square-foot household hazardous waste facility.

Temple Palms Business Park Environmental Impact Report, El Monte, California. *Wohl Penwood El Monte Partners.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared an environmental impact report for a 26.8-acre commercial, industrial, and warehousing project. Michael Baker's services included a hazardous materials investigation, a traffic impact analysis, air quality and noise evaluations, hydrology, a land-use analysis, and agency coordination.

Newberry Solar - Concentrix, Black Butte Road/ Mountain View Road, California. *Swinerton Builders.* Environmental Specialist. Responsible for the acoustical assessment.

Historic Downtown Upland Specific Plan EIR, Upland, California. *Upland, City of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared a Program Environmental Impact Report (EIR) for the Historic Downtown Upland Specific Plan, which consists of 210 acres and provides a clear framework for future development and public improvements in Downtown Upland. The plan contains permitted uses, development standards, and design guidelines for development within each of the nine districts to achieve the overall vision for the Specific Plan area. The environmental review involved aesthetics, light, and glare; air quality; cultural resources; hazards and hazardous materials; hydrology and water quality; land use; noise; population and housing; public services and utilities; traffic; and parking.

Downtown Specific Plan EIR, Perris, California. *City of Perris.* Environmental Specialist. Responsible for acoustics and air quality. With the changing community and future operation of the Metrolink Station, the City of Perris initiated an update to the 1993 Perris Downtown Specific Plan (DTSP). The project involved a General Plan Amendment, Zone Change, and the development and redevelopment of vacant and underutilized sites within the City's Historic Downtown. Key environmental issues addressed within the EIR included land use, traffic and circulation, air quality, greenhouse gas emissions/climate change, noise, hazards and hazardous materials, cultural resources, and services and utilities.

San Bernardino Merged Area B Merger and Amendments Project EIR, San Bernardino, California. *City of San Bernardino.* Environmental Planner. Responsibilities included acoustics and air quality.

Springville Apartments, California. *AML/Residential.* Environmental Specialist. Responsible for the acoustical analysis.

Chapman University Center for the Arts Peer Review, Orange, California. *Orange, City of.* Project Manager. Responsibilities included acoustics and air quality. Michael Baker conducted a peer review of the applicant-prepared air quality, greenhouse gas, and noise technical studies and initial study/mitigated negative declaration (IS/MND) sections for the proposed Chapman University Specific Plan Amendment Number 6 in the City of Orange. The peer review was conducted in two phases, whereby the original study was critiqued and follow up revisions were evaluated.

Ayres Hotel Peer Review, Orange, California. *Orange, City of.* Project Manager. Responsibilities included acoustics and air quality. Michael Baker conducted a peer review of the applicant-prepared air quality, greenhouse gas, and noise technical studies and initial study/mitigated negative declaration (IS/MND) sections for the proposed Ayres Hotel Orange project in the City of Orange. The peer review was conducted in two phases whereby the original study was critiqued and the follow up revisions were evaluated.

Sandalwood Air, Noise & Cultural, Big Bear Lake, California. *EAH Housing.* Environmental Specialist. Responsibilities included acoustics and air quality.

Fullerton Climate Action Plan (CAP), Fullerton, California. *Fullerton, City of.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a climate action plan (CAP) for the City of Fullerton in conjunction with the city's general plan update and accompanying environmental impact report. Michael Baker established the target greenhouse gas emissions reduction goal, guide the development of CAP measures. Michael Baker then reviewed the city's land-use data associated with the general plan update and used this data to prepare a citywide inventory of the emissions from both direct and indirect sources. Michael Baker developed measures aimed at reducing greenhouse gas emissions, and provided quantified estimates of the reduction measure's effectiveness. Michael Baker also developed criteria for addressing subsequent developments' consistency with the CAP and a methodology for determining significance of future project climate change impacts.

Cabot Career Lofts Project Initial Study / Negative Declaration, Laguna Niguel, California. *City of Laguna Niguel.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the IS/ND for the Cabot Career Lofts project, which proposes construction of a 142-unit multi-family residential development and associated amenities / improvements on a vacant approximately 2.1-acre site. The proposed residential development consisted of an approximately 272,454-gross square foot structure that would include five levels for residential and associated uses plus a basement level for parking. The project site is part of the larger Laguna Niguel Gateway Specific Plan Update, which was analyzed in the Gateway Program EIR. Where appropriate, the IS/ND tiers off the Gateway Program EIR. Although the analysis relies on the Program EIR, it also discusses any changed circumstances or new information that alters the first tier analysis (Program EIR). The IS/ND also identifies the applicable first tier mitigation measures and recommends additional measures to avoid or lessen potential impacts. Key environmental analyses include potential view obstructions and changes in visual character, air quality and noise constraints resulting from proximity to the San Joaquin Hills Transportation Corridor and Interstate 5, geology and soils constraints, and land use consistency with the Gateway Specific Plan.

General Plan Revised Scope, Fullerton, California. *Fullerton, City of.* Environmental Specialist. Responsibilities included acoustics, air quality, and Climate Action Plan preparation.

Rancho Cucamonga/Carrari Ranch, Rancho Cucamonga, California. *Rancho Cucamonga, City of.* Environmental Associate. Evaluated impacts for the environmental documentation.

Serrano Summit Area Plan 2009-1 and Tentative Tract Map No. 17331 EIR, Lake Forest, California. *City of Lake Forest.* Environmental Specialist. Responsibilities included acoustics and air quality. The proposed Serrano Summit Area Plan 2009-01 and Tentative Tract Map No. 17331 encompasses approximately 99 acres and is generally situated to the east of Bake Parkway, south of Commercentre Drive, and west of Serrano Creek in the City of Lake Forest, California. The proposed project will allow for the development of residential, park and recreation, civic center, and public facility uses.

PV-42b Technical Studies, California. *First Solar, Inc.* Environmental Specialist. Responsible for acoustics and air quality.

Department of Water and Power Specific Plan Amendment Environmental Impact Report, Seal Beach, California. *City of Seal Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the Department of Water and Power (DWP) Specific Plan Amendment Environmental Impact Report (EIR) for the City of Seal Beach. The EIR consisted of the analysis of several different issue areas. Major issues addressed in the EIR included air quality, greenhouse gases, hazardous materials, land use, aesthetics, traffic, geology, hydrology, noise, public services, and utilities.

Crenshaw Industrial Project Air Quality / GHG Assessment, Torrance, California. *Xebec Realty Partners.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an air quality/greenhouse Gas (GHG) assessment for the Crenshaw Industrial project for the Xebec Realty Partners. The project is located within the City of Torrance at the northeast corner of the Crenshaw Boulevard/208th Street intersection. The project proposes to add 16,129 square feet of industrial uses to the project site which currently contains 438,671 square feet of industrial uses (for a total of 454,800 square feet), as well as a total of 807 parking stalls. The air quality/GHG assessment consisted of the analysis of potential short- and long-term air quality impacts, as well as an analysis of GHG emissions from construction and operation of the proposed project.

Delano Courthouse, California. *CSC.* Environmental Specialist. Responsibilities included acoustics and air quality.

Seal Beach River's End Enhance. Plan, Seal Beach, California. *City of Seal Beach.* Environmental Specialist. Responsibilities included acoustics and air quality.

Cabot Road / Camino Capistrano Grade Separation at the Metrolink / BNSF Railroad, Mission Viejo, California. *City of Mission Viejo.* Environmental Associate. Responsibilities included acoustics and air quality. Michael Baker provided environmental, preliminary and final design, and construction services for the Cabot Road/Camino Capistrano grade separation project. Michael Baker provided roadway layout, structures design, railroad permitting and coordination, drainage design, utility relocation coordination, survey and right-of-way engineering, community outreach, environmental analysis, and geotechnical engineering services. Michael Baker coordinated all project aspects, including design and environmental clearance, and worked with Caltrans District 12 for NEPA clearance due to federal funding obligations. Six different alternative alignments were developed and analyzed with critical analysis applied to geometric compatibility, utility interferences, right-of-way

constraints, sensitive habitat avoidance, visual aesthetics, structural type compatibility, and adjacent land use accessibility.

INDIAN HILL WELL NOISE. *Bakersfield Well & Pump Company.* Environmental Planner. Responsibilities included acoustics and air quality.

ATP_Campo Verde Solar Project. *First Solar, Inc.* Environmental Planner. Responsibilities included air quality.

Development Agreement Program / Ellis Specific Plan EIR, Tracy, California. *City of Tracy.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker was responsible for the preparation of a program and project level EIR for the Development Agreement Program (DAP) and 320+-acre Ellis Specific Plan, a transit-oriented, mixed-use project within the City of Tracy's Sphere of Influence. The Ellis Specific Plan provides the general vision, layout and design of a proposed mix of residential, commercial, office/professional and recreational/open space uses (including a 12-acre Swim Center within a 20-acre Community Park) with the focal point of community activities centered around the village center.

Infrastructure Master Plan 002, Tracy, California. *City of Tracy.* Environmental Planner. Responsibilities included acoustics and air quality.

RBF-MSA 9.29.2009. *City of Tracy.* Environmental Planner. Responsibilities included acoustics and air quality.

FRV - Regulus. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

FRV - Technical Environ S. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

Air Quality and Greenhouse Gas Assessment, Carson, California. *Porsche Cars of North America.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker performed an air quality and greenhouse gas assessment for the proposed Porsche Driving Center Experience Project. Michael Baker's services included analyses of short-term and long-term air quality impacts and greenhouse gas emissions during remediation of the site and during construction and operation of the facility.

Cuyama Solar Array, Santa Barbara County, California. *First Solar, Inc.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker is performing CEQA support services for the Rosamond Solar Array project, which will provide power generated from clean solar technology. Michael Baker's services include coordination of subconsultants as technical studies are prepared for the environmental impact report (EIR). The technical studies include an air quality analysis, biota report, cultural resources survey, environmental noise assessment, hazardous materials assessment, and a traffic impact study. Michael Baker will also perform a peer review of the EIR on behalf of the client.

FRV - Adobe. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

FRV - Rigel. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

General Plan Update, EIR, and Climate Action Plan, Murrieta, California. *City of Murrieta.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided a comprehensive update to the city's 1994 General Plan and General Plan Environmental Impact Report (EIR). The City Council's major priority with the update was to focus on economic development and adding more jobs, specifically high-paying skilled jobs, along with retail establishments to support the community. Michael Baker also prepared a climate action plan (CAP).

Gilman Springs Road Safety Improvements Noise Study, Riverside County, California. *POWER Engineers, Inc.* Project Manager. Responsibilities included acoustics. Michael Baker prepared a noise study report for the proposed 2.44 miles of safety improvements along a segment of Gilman Springs Road, including additional paved shoulders, improved horizontal alignments, and new rumble stripes and rumble strips. The noise study report included traffic noise modeling results for the existing, future-build, and no build scenarios. Michael Baker evaluated traffic noise in accordance with California Department of Transportation guidelines.

R30 & CC Land Use Changes CEQA. *City of Moreno Valley.* Environmental Planner. Responsibilities included acoustics and air quality.

RCTD-Gilman Springs Road- ISA. *POWER Engineers, Inc.* Project Manager. Responsibilities included acoustics and air quality.

Leon Road Improvement Project Noise Study Report, Riverside County, California. *Riverside Co. Transportation Dept.* Project Manager. Responsibilities included acoustics. Michael Baker as a subconsultant under an on-call contract, prepared a noise study report in accordance with California Department of Transportation guidelines to adjust the vertical profile of Leon Road for a distance of approximately one mile between Scott Road and Keller Road. The improvements included grading of portions of the roadway to provide increased sight distance. The purpose is to improve safety through the travel corridor by improving sight distance along Leon Road within the project limits. The noise study report modeled traffic noise for existing, future-build, and no-build scenarios and analyzed the results.

T5 Data Center Expansion Project - EA 971 IS/MND, El Segundo, California. *City of El Segundo.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the Initial Study/Mitigated Negative Declaration (IS/MND) for the T5 Data Center Expansion project, which involved a 63,666-square-foot expansion to the 116,756-square-foot data center located at 444 North Nash Street, in the City of El Segundo. The project components included a building addition along the northern portion of the property, partial demolition of a building, and construction of a building addition along the western portion of the property. The key environmental analyses involved land use compliance and substantial energy consumption, with resultant air and greenhouse gas emissions that required energy-efficiency mitigation.

Stanton Zoning Code Update. *City of Stanton.* Environmental Planner. Responsibilities included acoustics and air quality.

Lincoln Avenue Bridge Widening, Anaheim and Orange, California. *County of Orange.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the IS/MND for the Lincoln Avenue Widening Project, which involved the widening of Lincoln Avenue from four to six lanes between Kingsley Street and Batavia Street, including widening of the Lincoln Avenue bridge over the Santa Ana River. The project area is jointly owned by the City of Anaheim, City of Orange, and County of Orange. The effort included the preparation of technical documentation (air quality, greenhouse gas emissions, noise, traffic, hazardous materials, biology and delineation) and the processing of regulatory permits.

Queen Esther Square Shopping Center IS/MND, El Segundo, California. *City of El Segundo.* Environmental Planner. Responsibilities included acoustics and air quality. This project included a request for a Conditional Use Permit (CUP No. 11-02) for improvements at the existing Queen Esther Square Shopping Center. Additionally, the project involved reclassification of two existing restaurants (Smarco's and Chinese Food Express); an adjustment (ADJ No. 11-01); a potential right-of-way dedication on Sepulveda Boulevard; and modifications to the original

Conditions of Approval for the existing shopping center. The adjustment request was for an architectural landscape feature (a canopy) to encroach into a required street front setback and for a shared loading space/parking space.

City of El Segundo, Chevron CRC. *City of El Segundo.* Environmental Planner. Responsibilities included acoustics and air quality.

Valley and Del Mar Plaza Air Quality/Greenhouse Gas Assessment, San Gabriel, California. *Landwin DMV, LLC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an air quality/greenhouse gas (GHG) assessment for the proposed Valley and Del Mar Plaza to analyze potential short- and long-term impacts from the project. The project proposed to demolish existing on-site structures and construct a new 279,729-square-foot, five-story, mixed-use complex comprising two hotels and retail/restaurant space. Michael Baker also quantified GHGs for construction and operation (mobile source, energy consumption, water supply, and solid waste generation) of the proposed project.

County-Wide Long-Term Routine Maintenance Permitting Program - Regulatory Services, Orange County, California. *County of Orange.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker was obtained by Orange County Public Works to assist in environmental document preparation and processing for the County-Wide Long-Term Routine Maintenance Permitting Program, located throughout Orange County, California. There are 13 watersheds located within the county, covering approximately 799 square miles. The proposed project would allow routine maintenance to occur throughout the county, within multiple existing flood control facilities and beneath existing bridges crossing over waterways.

Adams Street Bridge, La Quinta, California. *City of La Quinta.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided environmental clearance and oversight of the bridge and roadway improvements for a 440-foot bridge project over the Coachella Valley Stormwater Channel. The project, which used Federal HBRR funds, replaced the existing low-water crossing with a bridge to provide the city with a more reliable arterial roadway during inclement weather for the general public and emergency personnel. The project provided a four-lane roadway and bridge with raised median north of Highway 111 to Westward Ho Drive.

Watsonville VISTA General Plan and EIR, Watsonville, California. *City of Watsonville.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker updated the WatsonvilleVISTA 2030 General Plan and prepared an environmental impact report (EIR) for the city, which is surrounded by some of the most productive agricultural land in California. The updated plan represents a vision for how the city will grow over the next 25 years and is based on the central themes of urban infill to preserve important agricultural lands and economic development. Values expressed by the community included neighborhood preservation, suitable housing for all residents, diversification of the economic base, adequate public infrastructure, mobility and access, and natural resource conservation.

Albright Office Park, Los Gatos, California. *LG Business Park LLC.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker assisted with preparation of technical studies and an environmental impact report (EIR) for the Albright Office Park project. The proposed project would remove 10 existing buildings totaling approximately 250,000 square feet of office/research and development (R&D) space and allow construction of up to four new larger office/R&D buildings totaling 500,000 square feet at full build out. Project implementation would result in a net increase of 300,000 square feet of office/R&D space. The architecture is intended to meet the expectations of quality in the Class A office space market.

Lerdo Jail – Justice Facility Expansion EIR, Bakersfield, California. *County of Kern.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker assisted with preparation of an

environmental impact report (EIR) for the Lerdo Jail – Justice Facility expansion project. The project proposes to expand the detention facility by constructing an 822-bed, 243,909-square-foot Type II (Medium-Maximum Security) facility and ancillary buildings. Key environmental issues addressed within the EIR included air quality, greenhouse gases, noise, geology and soils, cultural resources, land use, hazards, and hazardous materials.

RBF-MSA 2-9-2010. *SunEdison, LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

RBF-WinCo Noise Study_PR_2.15.13. *WinCo Foods, LLC.* Environmental Planner. Responsibilities included acoustics.

SCAG Imperial Building Blocks, Imperial, California. *Southern California Association of Governments.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared general plan element updates for the City of Imperial in this project funded by SCAG. Michael Baker had previously prepared the downtown area plan. The city wishes to build upon the progress that it has made in planning the downtown area and other areas by developing a unified approach to land use and circulation that promotes livability and a positive community identity while achieving goals for energy efficiency and conservation. The project includes public participation and outreach. The Michael Baker team interviewed major stakeholders as part of the outreach effort.

Dublin Crossing Specific Plan and Environmental Impact Report, Dublin, California. *City of Dublin.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker is currently preparing the Specific Plan and EIR for the proposed Dublin Crossing mixed-use development. The development includes up to 1,995 residential units, 200,000 square feet of commercial uses, a 30-acre community park, five acres of neighborhood parks, and a 12-acre elementary school site.

61LK 8ME, LLC Solar. *61LK 8ME, LLC.* Project Manager. Responsible for acoustical assessment.

FAR_17th St/Superior Live/Work. *City of Costa Mesa, CA.* Environmental Specialist. Responsibilities included acoustics and air quality.

Interstate 5 / Jamboree Road Interchange Improvement, Orange County, California. *City of Irvine.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a combined project study report-project report and processed the necessary federal and state environmental clearances and related studies for improvements at the I-5/Jamboree Road interchange in the cities of Irvine and Tustin. The primary improvements include widening of Jamboree Road, between Michelle Drive in the City of Irvine and El Camino Real in the City of Tustin, to provide four through-lanes in each direction. Associated interchange entrance- and exit-ramp modifications will be required. Critical design aspects include coordination of the project design with two other Caltrans improvement projects.

Interstate 405 / Jamboree Road Interchange Improvements, Irvine, California. *City of Irvine.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a permit engineering evaluation report (PEER) for the I-405/Jamboree Road Interchange southbound exit ramp widening. The existing intersection experienced congestion from the high volume of vehicles on Jamboree Road and turning volumes at the southbound I-405 ramp intersection. Project improvements were designed to widen the ramp to the outside to provide an additional left-turn lane at the intersection with Jamboree Road, construct a retaining wall along the right edge of shoulder, remove and reconstruct an overhead sign structure, modify the existing traffic signal at the intersection, make minor drainage improvements, and protect and relocate existing utilities. Michael Baker

prepared new aerial topographic mapping, traffic analysis, preliminary improvement plans, cost estimates, and environmental technical studies in support of a California Environmental Quality Act (CEQA) categorical exemption.

MSA (2 of 5 yrs.). *City of Cypress.* Environmental Planner. Responsibilities included acoustics and air quality.

Rincon Palms Hotel Air Quality/Greenhouse Gas Assessment, Goleta, California. *Huntington Hotel Group.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the air quality-greenhouse gas assessment for the proposed Rincon Palms Hotel. The study developed several ways in which the hotel would be able to reduce its emissions. Additionally, the following measures were included to reduce the project's greenhouse gas emissions by 33 percent beyond business-as-usual conditions: ensuring pedestrian connections, such as sidewalks or trails, are provided to the adjacent circulation network outside the property line; designing buildings to be energy efficient and 15 percent above Title 24 requirements; installing high-efficiency lighting and energy-efficient appliances; and installing water-efficient irrigation systems and low-flow faucets, toilets, and showers for water conservation and efficiency.

Waite Street Reservoir (1467 Pressure Zone), Lake Elsinore, California. *Elsinore Valley Municipal Water District.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided engineering services for design of a 2.5-million-gallon welded steel tank to supply water for Elsinore Valley Municipal Water District's (EVMWD) 1467 pressure zone. Design considerations included the construction of a new tank while maintaining service and capacity to an existing 500,000-gallon tank on site. The District was looking to maximize space on-site for future reservoir expansion. Due to the topography of the site, the site required a 10-foot-tall retaining wall in order to provide available space for two reservoirs in the future. The latest AWWA D-100 standard was used in determining freeboard height based upon the 134-foot diameter and 24-foot high tank. In addition, Michael Baker used and modified EVMWD's design details for inclusion into the plan set.

RBF-Moffet Place EIR. *City of Sunnyvale.* Environmental Planner. Responsibilities included acoustics and air quality.

Air Quality Guidebook for Transportation Conformity, Arizona. *Arizona Department of Transportation.* Environmental Associate. Responsibilities included air quality. Michael Baker assisted the client with simplifying the transportation conformity process and establishing a general uniformity through the development of an Air Quality Guidebook for Transportation Conformity. The guidebook was designed as a tool for technical staff and included comprehensive examples and procedures, calculation methodologies, guidance, and detailed tables and maps highlighting nonattainment and maintenance areas by criteria pollutant, Metropolitan Planning Organization (MPO), and Council of Governments (COG).

Bloomington Phase I. *Related Companies of California, LLC.* Environmental Specialist. Responsibilities included acoustics and air quality.

Transportation Oriented Development Specific Plan and Environmental Impact Report, Duarte, California. *City of Duarte.* Environmental Specialist. Responsible for acoustics and air quality. Michael Baker prepared a specific transit-oriented development (TOD) plan and environmental impact report for a 19-acre area adjacent to the Duarte Gold Line Station. The city desired a plan that is flexible with respect to land uses to respond to market conditions. The project was made possible through a Metro TOD planning grant.

S.R. 91 Westbound Widening - Final PS&E, Orange County, California. *Orange County Transportation Authority (OCTA).* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided plans, specifications, and estimates (PS&E) for the S.R. 91 widening project. The project consisted of 3.8 miles of freeway

widening to convert the westbound auxiliary lanes into through mixed flow lanes between Brookhurst Street and Euclid Street, Euclid Street and Harbor Boulevard, and Raymond Avenue and State College Boulevard. The project also added two-lane exit ramps and associated auxiliary lanes at three interchange locations at the westbound exit ramps to Raymond Avenue, Lemon Street, and Brookhurst Street.

NTP_17th and Superior Live/Wrk. *Intracorp.* Environmental Specialist. Responsibilities included acoustics and air quality.

Alamitos Park CEQA/NEPA Clearance, Long Beach, California. *City of Long Beach.* Environmental Specialist. Air Quality and Noise. Michael Baker assisted with preparation of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) clearance documentation for the Alamitos Park project. The project included roadway improvements at and surrounding the intersection of Martin Luther King Jr. (MLK) Avenue and 7th Street, within the southwestern portion of the City.

Magellan Gateway. *Magellan Acquisitions.* Environmental Specialist. Responsibilities included acoustics and air quality.

James Donlon Blvd Extensi 012. *City of Pittsburg.* Environmental Planner. Responsibilities included acoustics and air quality.

Podva Residential Development Environmental Impact Report. *Town of Danville.* Environmental Planner. Responsibilities included acoustics and air quality.

AdobeOrion Acoustical Analysis. *SunEdison, LLC.* Environmental Scientist. Responsible for acoustical assessment.

San Diego Creek Reach II Maintenance, Irvine, California. *County of Orange.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker drafted and obtained a Clean Water Act Letter of Permission through the U.S. Army Corps of Engineers (Corps) for the San Diego Creek Reach II Maintenance Project, located in the City of Irvine, Orange County. To restore the as-built flood control capacity, protect property, and increase public safety, reauthorization for routine maintenance activities will be required. Maintenance activities, as identified in the county's Operations and Maintenance Manual, will include facility inspection, routine maintenance activities, vegetation management, sediment removal, and emergency work repair. Michael Baker negotiated the terms of the permit with the Corps, which enabled the applicant to phase certain maintenance activities.

Anchor Live / Work Project 1527 Newport Boulevard IS / MND, Costa Mesa, California. *Intracorp.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared the Initial Study/Mitigated Negative Declaration for the Anchor Live/Work Project in the City of Costa Mesa. The Intracorp Socal, LLC project involves a 40-unit live/work development at 1527 Newport Boulevard.

Brookhurst Street / Adams Avenue Intersection Improvement EIR, Huntington Beach, California. *City of Huntington Beach.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an Environmental Impact Report (EIR) for the Brookhurst Street/Adams Avenue Intersection Improvements project for the City of Huntington Beach. The project proposed improvements along Brookhurst Street approximately 1,000 feet north of Adams Avenue and 800 feet south of Adams Avenue, and along Adams Avenue approximately 1,300 feet west of Brookhurst Street and 1,200 feet east of Brookhurst Street. The project also resulted in two northbound right-turn lanes, one southbound right-turn lane, one eastbound through lane, and

one westbound through lane. Approximately 31,230 square feet of right-of-way from the adjoining parcels was acquired. One bus turnout was added to an existing bus stop. The project was part of a multi-jurisdictional approach to alleviating traffic congestion along arterials in Huntington Beach, Fountain Valley, and Costa Mesa. Key environmental impact areas analyzed in the EIR included land use/planning, air quality, traffic and circulation, hazards and hazardous materials, noise, and greenhouse gas emissions.

Interstate 5 Widening - Project Report/Environmental Document (S.R. 73 to El Toro Road), Orange County, California. *Caltrans - District 12.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker, in a subconsultant role, prepared a project report and environmental document (Initial Study and Environmental Assessment) for 6.5 miles of mainline widening of I-5 from S.R. 73 to El Toro Road. The project included widening of four bridge structures; replacement of the bridge structures at Avery Parkway, La Paz Road, El Toro Overhead off-ramp, and Aliso Creek Road; retaining walls; sound walls; drainage improvements; and an extensive public outreach effort focused on gaining citizen input and community support. Michael Baker led the geometric development of the southern project segment, developed two alternatives for reconstruction of the Avery Parkway interchange, and prepared 11 structural advance planning studies. To support the environmental document, Michael Baker prepared the visual impact assessment, air quality assessment, water quality assessment, and location hydraulic study.

RBF-907.05. *City of Pittsburg.* Environmental Planner. Responsibilities included acoustics and air quality.

City of Yorba Linda Parks and Recreation Master Plan Update, Yorba Linda, California. *City of Yorba Linda.* Environmental Specialist. Responsible for acoustics and air quality. As part of the City's comprehensive General Plan update, Michael Baker in conjunction with Public Enterprise, is updating the City's Parks and Recreation Master Plan. The Parks and Recreation Master Plan is a strategic document that studies existing parks and recreation programs and provides a framework for the future parks and recreation system in the City. The City's current Master Plan of Parks dates back to 1982. The updated Master Plan will provide direction for enhancement and expansion of Yorba Linda's parks and recreation programs, services and facilities. The updated Master Plan includes a parkland inventory, program inventory, needs assessment, policy recommendations, and implementation strategies.

U.S. 221 Improvements Environmental Assessment and Preliminary Design, Rutherford and McDowell Counties, North Carolina. *NCDOT/PDEA.* Environmental Associate. Responsible for noise analysis. Michael Baker provided environmental and engineering services for the widening of 19 miles of U.S. 221 from north of Rutherfordton to NC 226. Michael Baker's services included preparation of a state environmental assessment and finding of no significant impact, development of the purpose and need statement and design options report, traffic capacity analysis, natural resources technical report, stream and wetland delineations, community impact assessment, indirect and cumulative effects assessment, hydrologic and hydraulic analysis report, traffic noise analysis report, and preparation of preliminary design plans.

E. Palm Canyon Widening. *City of Cathedral City.* Environmental Planner. Responsibilities included acoustics and air quality.

General Plan and Environmental Impact Report, Capitola, California. *City of Capitola.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker is working in partnership with The Planning Center/DC&E to prepare the Capitola General Plan Update and EIR. Four areas were identified for more focused evaluation and subsequent policy recommendations: a regional and local commercial corridor, the area around City Hall, and the Capitola Village, which is a popular tourist destination.

Trnmnt Hills TT36307 Noise St. *Pardee Homes.* Environmental Specialist. Responsible for acoustical assessment.

10th Street Industrial Park. *City of Azusa.* Environmental Specialist. Responsibilities included acoustics and air quality.

Heritage Park Environmental Impact Report, Dublin, California. *City of Dublin.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker developed an Environmental Impact Report (EIR) for the 6.6-acre Heritage Park Office Complex. The EIR included sections for existing setting, thresholds of significance, analysis of project-related impacts, and mitigation measures to avoid or reduce significant impacts. Environmental topics included aesthetics, air quality and global climate change, cultural resources, geology/soils, hazards and hazardous materials, hydrology and water quality, land use/planning, noise and vibration, public services, utilities/service systems. The document also discussed potential growth inducement and cumulative impacts. Michael Baker provided analysis of three alternatives, including the "No Project" Alternative, culminating with the selection of the environmentally superior alternative in accordance.

4480 Holt Ave AQ/GHG Study. *4480 Holt Investors, LLC.* Environmental Specialist. Responsibilities included acoustics and air quality.

Dunkin Donuts IS/MND. *City of Westminster, CA.* Environmental Specialist. Responsibilities included acoustics and air quality.

Adobe Solar Project (20MW) and Orion Solar Project (20MW), Kern County, California. *SunEdison, LLC.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker provided final civil engineering and permitting for two 160-acre photovoltaic solar sites in the agricultural region south of Bakersfield. The scope included topographic surveying; final grading, drainage, and fencing design; horizontal control; and revegetation plans. Michael Baker was also responsible for permitting the final electrical, structural, and civil plans and for preparing the environmental compliance binder for approval by the county's Planning Department. Michael Baker also updated the site development stormwater pollution prevention plan (SWPPP) to include the substation site. As a result of building key relationships with county staff, Michael Baker also was asked to support the design-build contractors responsible for the on-site collector substation for each site (high voltage) and the generation tie line for one of the sites. Support for these contractors included design surveys, grading design, environmental compliance, and construction surveying.

ATP_Brookhurst St. Res. *City of Westminster, CA.* Environmental Specialist. Responsibilities included acoustics and air quality.

Las Tunas/Mission Ave. Mixed. *LSG Las Tunas, LP.* Environmental Specialist. Responsibilities included acoustics and air quality.

Portola Center Initial Study and EIR, Lake Forest, California. *City of Lake Forest.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared an Initial Study (IS) and Environmental Impact Report (EIR) for the proposed Portola Center Area Plan 2008-01 and Tentative Tract Map nos. 15353 and 17300, which encompass approximately 195 acres in the City of Lake Forest. The Portola Center Area Plan provides a comprehensive set of guidelines, regulations, and implementation plans that govern development of the project site. Tentative Tract Map nos. 15353 and 17300 propose to subdivide the project site for the purpose of creating individual lots for residential, mixed-use, park, open space, and other land uses, in accordance with the Area Plan.

Airport/Marina Ford/Honda. *Sauers Lopez Construction.* Project Manager. Responsible for AQ/GHG technical study.

Bristol St. Widening-Phase III. *POWER Engineers, Inc.* Project Manager. Responsible for noise study report.

Bristol St. Widening-Phase IV. *POWER Engineers, Inc.* Project Manager. Responsible for noise study report.

Brooks/Ramona Industrial. *William Fox.* Project Manager. Prepared an air quality/GHG assessment.

Hyatt Place San Gabriel. *Landwin DMV, LLC.* Project Manager. Responsibilities included acoustics and air quality.

Old River One. *First Solar, Inc.* Project Manager. Responsible for Air Quality Study.

RBF-Global-4.18.2013. *Global Valley LLC.* Environmental Planner. Responsibilities included acoustics and air quality.

Rubio Village. *Landwin DMV, LLC.* Project Manager. Responsibilities included acoustics and air quality.

SCVWD Coyote Ridge Mgmt Plan. *Santa Clara Valley Water District.* Project Manager. Responsible for air quality assessment.

Tracy Crossroads. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included acoustics and air quality.

Tracy Medline. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included acoustics and air quality.

University Drive Widening Project, Irvine and Newport Beach, California. *City of Irvine.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared the initial study and Mitigated Negative Declaration and the Project Report and Environmental Document (PR/ED) for proposed improvements to University Drive. Three design alternatives were analyzed in the PR/ED that included widening the roadway from a four to six lane arterial, adding a sidewalk to improve pedestrian access to UC Irvine and the San Diego Creek Trail, improving bicycle and pedestrian connectivity, adding retaining walls along the UC Irvine property line, and improved water quality treatment. The IS/MND addressed technical issues, primarily air quality/greenhouse gas, biological resources (due to proximity to San Diego Creek), cultural resources, hazards and hazardous materials, water quality, and traffic.

Oceanaire Apartments Traffic Impact Study, Long Beach, California. *City of Long Beach.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker performed a comprehensive traffic impact analysis for the proposed development of the Oceanaire Apartments. Michael Baker's services included data collection and analysis, traffic forecasts, and recommendations for traffic improvements.

8 Lots Rancho Cucamonga. *Grand Pacific Communities, Corp.* Environmental Specialist. Responsible for acoustics and air quality.

Gas Plant CEQA MND. *Signal Hill Petroleum, Inc.* Environmental Specialist. Responsible for air quality analysis.

Temecula Creek Inn Specific Plan Environmental Impact Report, Temecula, California. *City of Temecula.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided professional services to prepare an environmental impact report for the Temecula Creek Inn Specific Plan. The plan

proposes to expand Temecula Creek Inn into a master-planned 18-hole golf course resort community. The development is on 305 acres, and the Specific Plan proposes five planning areas. The Specific Plan will require a Specific Plan for the Temecula Creek Inn, a General Plan Amendment for the Land Use and Circulation Elements, a Vesting Tentative Tract Map, and a Development Plan. This project is challenged with water, sewer, traffic, and cultural resource issues.

1467 Zone Pipeline, Phase III & Phase IV. *Elsinore Valley Municipal Water District.* Environmental Planner. Responsibilities included acoustics and air quality.

Inn at the Village Subsequent Environmental Impact Report, Mammoth Lakes, California. *Mammoth Lakes, Town of.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared an initial study and subsequent environmental impact report (SEIR) for the proposed Inn at the Village, which encompasses a seven-story hotel with rooms, food and beverage areas, spa, outdoor pool/Jacuzzis, and landscaping elements. The hotel, totaling 64,750 gross square feet of buildable floor area, will consist of a maximum lodging count of up to 67 rooms. Key environmental analyses include shade and shadow issues pertaining to aesthetics, traffic and circulation impacts, increased demands for utilities and service systems, and land use consistency with the NVSP.

Mancara at Robinson Ranch Environmental Impact Report, Santa Clara, California. *City of Santa Clarita.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared and environmental impact report (EIR) for the Mancara at Robinson Ranch project. The project is a rural residential equestrian-based community involving the development of 99 single-family residential units and open space areas within 105 lots on approximately 172 gross acres of land. The EIR analyzed several topics, including aesthetics, light, and glare; biological resources; traffic and circulation; air quality; noise; hydrology and water quality; geology; and public services and utilities.

Air Quality and Greenhouse Gas Assessments for Photovoltaic Solar Facilities, Kern County, California. *First Solar, Inc.* Environmental Planner. Responsibilities included acoustics and air quality.

NC 215 TO 11. *North Carolina Department of Transportation.* Environmental Associate. Responsible for Traffic Noise Study.

Casa Buena Peer Review. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included acoustics and air quality.

NC 215 Environmental Impact Statement, Transylvania County, North Carolina.

NCDOT/PDEA. Environmental Associate. Responsible for noise analysis. Michael Baker developed a draft environmental impact statement for proposed improvements to NC 215, from U.S. 64 to S.R. 1326 (Macedonia Church Road). As a prime consultant, Michael Baker's services included preparation of the constructibility report, a visual impacts assessment for impacts to U.S. Forest Service resources, preparation of a natural resources technical report, stream and wetland delineations, endangered species surveys, community impact assessment, indirect and cumulative effects assessment, and traffic noise analysis report. Michael Baker also developed the draft Department of Transportation Section 4(f) evaluation and led public involvement and agency coordination activities.

442 W. Ocean Blvd. Apartments. *City of Long Beach.* Environmental Specialist. Responsibilities included acoustics and air quality.

Oak Meadow Plazq. *Morgan Hill, City of.* Environmental Specialist. Responsibilities included acoustics and air quality.

Vernon Distributed Generation. *POWER Engineers, Inc.* Project Manager. Responsible for acoustical assessment.

Cabrillo Hospital Reuse. *Efekta Group Inc.* Environmental Specialist. Responsible for acoustical analysis.

Garnet Street Bridge Replacement Three Year On-Call, Mentone, California. *County of San Bernardino.* Environmental Specialist. Responsible for acoustical assessment. Michael Baker managed the preparation of wetland delineation, permitting, and compliance from environmental documents previously prepared for conformity in support a joint Initial study/categorical exclusion (IS/CE) for the Grant Street Bridge Replacement project. The County of San Bernardino intended to replace the bridge with a new state-of-the-art bridge to accommodate existing traffic volumes. The width of the old bridge was approximately 17-feet 10-inches-wide (rail-to-rail), including an approximately 16-foot 10-inch travel way. The bridge was 159-feet-long with two abutments and one center pier. The new bridge is approximately 52-feet-wide and includes the abutments and piers, with a wider travel way to accommodate modern vehicles that are wider than older models. All existing pipelines and utilities were relocated as necessary.

I-5/La Novia Interchange. *City of San Juan Capistrano.* Environmental Specialist. Responsibilities included acoustics and air quality.

Nickelodeon Office Building Initial Study/Mitigated Negative Declaration, Burbank, California. *City of Burbank.* Environmental Specialist. Responsible for CEQA document preparation. Michael Baker prepared an initial study/mitigated negative declaration (IS/MND) for the Nickelodeon Office Building (203 West Olive) Project. The project involved the construction of a five-story office building (approximately 113,760 square feet) and five-level parking garage. The proposed office building would provide office space and associated amenities (e.g., conference rooms and restrooms), allowing Nickelodeon to expand its existing campus, located to the southwest, to include the project site. Project approvals consisted of a development review permit, variance, and conditional use permit. Primary issues analyzed within the document included aesthetics, geology and soils, hazards and hazardous materials, noise, and transportation/traffic.

Sakhrani Dialysis Project, San Gabriel, California. Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker prepared the air quality and greenhouse gas emissions analysis, the noise analysis, and the shade/shadow study for the Sakhrani Dialysis Clinic. The project consisted of the demolition of the existing on-site office structure and construction of a new 12,285-square-foot, single-story dialysis clinic. The studies were included in the application package for the project and submitted to the city.

KHA_097814001.1.6. *Kimley-Horn and Associates, Inc.* Project Manager. Responsibilities included air quality and noise.

Westgate Residential IS/MND. *City of Westminster, CA.* Environmental Specialist. Responsible for acoustics and air quality.

In-N-Out091115. *In-N-Out Burger.* Environmental Specialist. Responsible for the acoustical analysis.

550 North Third Street IS/MND, Burbank, California. *City of Burbank.* Environmental Specialist. Responsibilities included acoustics and air quality. Michael Baker assisted with preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) for the 550 North Third Street Project. The project involved construction of a mixed-use

development with 97 apartment units and 1,526 square feet of retail space in a single structure consisting of six stories situated over a subterranean and semi-subterranean parking structure with 189 parking spaces, as well as bicycle rooms accommodating 128 bicycles. Key issues analyzed within the document included land use, aesthetics, and parking.

Antelope Valley Solar. *First Solar, Inc.* Environmental Planner. Responsibilities included acoustics and air quality.

Paseo del Sol Ph 4 Noise. *Cal-Paseo del Sol, LLC.* Project Manager. Responsible for Acoustical Asessment.

RBF-10.0132 15.0958.*PMC.* Environmental Specialist. Responsible for acoustical analysis.

RBF-RVA-10.2015.*Ruth Villalobos & Associates LLC.* Project Manager. Responsibilities included air quality and noise.

RBF-UCR-950545.*University of California, Riverside.* Environmental Associate. Responsibilities included acoustics and air quality.

Rezoning of Santee School Site. *Santee School District.* Environmental Associate. Responsible for air quality and GHG.

Tracy Gateway. *Kimley-Horn and Associates, Inc.* Environmental Specialist. Responsibilities included acoustics and air quality.

Nevada County Housing Element Rezone Environmental Impact Report, Nevada County, California. *County of Nevada.* Environmental Planner. Responsibilities included acoustics and air quality.

S.R. 57/Lambert Road Interchange Improvements Project, Brea, California. *City of Brea.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker led the preparation of a project report and environmental document (initial study/mitigated negative declaration) for a project to mitigate existing and forecast traffic congestion for the S.R. 57/Lambert Road interchange. Two build alternatives were engineered and evaluated: a modified tight diamond and a combined partial cloverleaf/diamond. Critical design aspects included coordination of project design with two other freeway improvement projects: the S.R. 57/Northbound Widening Project (under construction), and the S.R. 57 Northbound Climbing Lane Project (future M2 Freeway Program project). The project included the widening of two bridge structures, retaining walls, sound walls, drainage improvements, and acquisition of right-of-way.

RBF-KCD-1.2016.*KC Design Architects, Inc.* Environmental Specialist. Responsible for acoustics and air quality.

Seefried Addendum EIR.*City of Fontana.* Environmental Specialist. Responsible for peer review.

Tracy Hills Specific Plan Environmental Impact Report, Tracy, California. *Kimley-Horn and Associates, Inc.* Environmental Associate. Responsibilities included acoustics and air quality. The SEIR was required by settlement agreements entered into by the City of Tracy and the Sierra Club on the previously certified EIR for the adopted Specific Plan. Critical issues, beyond compliance with the respective settlement agreements, are coordination with the Tracy Municipal Airport/San Joaquin County Airport Land Use Commission (ALUC) with respect to the airport approach zone, compliance with California Senate Bill (SB) 610 and SB 221, securing an adequate and reliable water supply for build-out of the Specific Plan, ensuring adequate wastewater treatment capacity and storm water management, and addressing regional transportation impacts, improvements, and fees.

8th Street Safety Enhancements (J Avenue to Palm Avenue), National City, California. *City of National City.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided final design; plans, specifications, and estimates (PS&E); and public outreach for the 8th Street Safety Enhancements Highway Safety Improvement Program (HSIP) Project, which involved design of medians, curb, gutter and sidewalks, slope stabilization via retaining walls, and pedestrian crossing enhancements. Michael Baker also designed traffic calming measures, restriping, and installation of a traffic signal; provided Caltrans (DLEA) funding applications; provided surveys and mapping; and developed National Environmental Policy Act (NEPA) environmental documentation.

Gilman Springs Road. *POWER Engineers, Inc.* Project Manager. Provided acoustical analysis.

RBF-CLB-6.2015. *City of Long Beach.* Environmental Associate. Responsibilities included acoustics and air quality.

Interstate 5 / Jamboree Road Interchange Improvement, Irvine, California. *City of Irvine.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker prepared a Permit Engineering Evaluation Report (PEER) for the I-405/Jamboree Road Interchange southbound exit ramp widening. The intersection experiences congestion from the high volume of vehicles on Jamboree Road and turning volumes at the southbound I-405 ramp intersection. The proposed improvements include left-turn lane and retaining wall construction, overhead sign structure reconstruction, traffic signal modification, minor drainage improvements, and utility coordination. Michael Baker prepared new aerial topographic mapping, a traffic analysis, preliminary improvement plans, cost estimates, and environmental technical studies in support of a CEQA Categorical Exemption.

Mission Viejo Medical Center Environmental Impact Report, Mission Viejo, California. *NCA Mission Viejo, LLC.* Environmental Specialist.

Responsibilities included acoustics and air quality. Michael Baker prepared the environmental impact report (EIR) for the Mission Viejo Medical Center Project, which consists of the construction of a four-story, 110,000 square-foot medical office building and associated five-level parking structure on a 3.76-acre site currently comprising surface parking for the Shops at Mission Viejo, a portion of Shops Boulevard, and a landscaped hillside. Key project issues included aesthetics, traffic, air quality, greenhouse gas emissions, noise, geology and soils, hydrology and water quality, and public services and utilities.

I-10/Jefferson Street Int. *County of Riverside.* Environmental Planner. Responsibilities included acoustics and air quality.

RBF-NTP-9.2015. *City of Milpitas.* Environmental Specialist. Responsible for acoustics and air quality.

Grand Avenue at S.R. 57/S.R. 60 Interchange, Diamond Bar, California. *PBS&J.* Environmental Planner. Responsibilities included acoustics and air quality. Michael Baker provided environmental support for the S.R. 57/S.R. 60 confluence at Grand Avenue in Los Angeles County, within the Cities of Industry and Diamond Bar. The interchange is located approximately at the midpoint of the two-mile common alignment of the S.R. 57/S.R. 60. Michael Baker assisted in managing the preparation of technical studies anticipated to support a joint environmental impact report/environmental assessment (EIR/EA).

Paseo Del Sol PA 4. *Newland Communities.* Environmental Specialist. Responsible for acoustical assessment.

Additional Michael Baker Project Experience

Air Quality

Interstate 5 HOV Lane Extension Project Report / Environmental Document, Avenida Pico to San Juan Creek Road, Orange County, California. Environmental Analyst. Responsible for preparing the Air Quality Assessment and Air Quality Conformity Report. Michael Baker, in a subconsultant role, is working with the Orange County Transportation Authority (OCTA), Caltrans District 12 and the cities of San Clemente, Dana Point and San Juan Capistrano to prepare a Project Report and Environmental Document (IS / EA) for 5.7 miles of mainline widening of Interstate 5 from Avenida Pico to San Juan Creek Road. The project includes the widening of four bridge structures, replacement of the Avenida Pico bridge structure, retaining walls, sound walls, drainage improvements, and an extensive public outreach effort focused on gaining citizen input and community support.

Lyons Homes Technical Studies, Irvine, California. Environmental Analyst. Michael Baker prepared an Air Quality/Greenhouse Gas Assessment for the Alderwood and Vista Verde projects in the City of Irvine. Both projects involved the development residential dwelling units on of former school sites. The Alderwood project consisted of the development 48 dwelling units, while the Vista Verde project proposed 66 units with a 54-unit alternative. Each technical study included an analysis of short-term (construction), long-term operational, and cumulative impacts.

Transportation Studies in California

5th Street Widening and Improvement Project, Highland

Cabot- Camino Capistrano Bridge Improvements, Mission Viejo

College Boulevard Widening Project, Oceanside

Interstate 10 / Jefferson Street Interchange, Indio

Interstate 10 / McNaughton Parkway Interchange, Coachella

Interstate 10 / Monterey Drive Interchange, Palm Desert

Interstate 15 / State Route 79 South Interchange, Temecula

Interstate 880 Operational and Safety Improvements, Oakland

Sand Canyon Avenue Grade Separation, Irvine

State Route 57 - Northbound Widening, Orange County

State Route 62 Public Lands Highway Discretionary Fund Project, Yucca Valley

State Route 91 Environmental Revalidation/Addendum, Anaheim and Fullerton

State Route 241 Loma Segment Widening Project, Orange County

Residential Studies

Carrari Ranch, Rancho Cucamonga

Crestridge / Vellana Senior Development, Rancho Palos Verdes

Department of Water and Power Specific Plan Amendment, Seal Beach

Laurel Park at Moorpark Highlands, Moorpark

Osborne Hill, Nevada County

Salt Creek, Redding

Sandalwood Affordable Housing Project, Big Bear Lake

Serrano Summit, Lake Forest

Tesoro del Valle Phases B and C, Santa Clarita

Villa Palmera Residential Development, Coachella

The Vineyards at Menifee, Riverside County

Weber Property Residential Development, Danville

Mixed-Use and Specific Plan Studies

231-265 North Beverly Drive Project, Beverly Hills

601 North Parkcenter Drive, Santa Ana

Albright Way Development Project, Los Gatos

Butterfield Specific Plan, Banning

Cottonwood Creek Project, Riverside

Downtown Dublin Specific Plan EIR, Dublin

Dumbarton TOD Specific Plan, Newark

Historic Downtown Upland Specific Plan, Upland

Lancaster Downtown Specific Plan, Lancaster

NWC Katella Avenue and Winners Circle, Cypress

Perris Downtown Specific Plan, Perris

San Fernando Parking Lots Project, San Fernando

San Bernardino Merged Area A and B, San Bernardino

South Pasadena Downtown Revitalization Project, South Pasadena

Commercial/Institutional/Infrastructure Studies

Barstow Wastewater Reclamation Facility Upgrades Project, Barstow.

Bonita Canyon Drive Trail, Irvine.

Capistrano Bluffs / Pines Park Sewer Improvements, Dana Point.

Eagle Canyon Dam, Palm Springs and Cathedral City.

Equinix Data Center, El Segundo.

Filos Dobler Annexation EIR, Tracy.

French Valley Business Park, Riverside County.

High Tech High School, Chula Vista.

La Bahia Hotel Project, Santa Cruz.

Marymount College Facilities Expansion, Rancho Palos Verdes.

McCall Road Medical Development, Sun City.

Montage Beverly Hills Hotel, Beverly Hills.

Nash Data Center, El Segundo.

National City Costco, National City.

Pacific Edge / Vacation Village Resort Hotel Project, Laguna Beach.

Pacific Trade Center 4000 North Arden Drive, El Monte.

Poseidon Seawater Desalination Project, Huntington Beach.

The Rose Gardens at Santa Teresita Master Plan, Duarte.

Temple City Gateway Plaza Project, Temple City.

Temple Palms Business Park, El Monte.

Temporary Ocean Water Desalination Demonstration Project, Redondo Beach.

Santa Ana River Trail, Orange County.

SDG&E Bayfront Substation Project, San Diego County.

Woodland Commerce Center, Woodland.

Renewable Energy Projects

Cuyama Solar Array, Santa Barbara County.

Monte Vista Solar Array, Kern County.

Rosamond Solar Array, Kern County.

Solar Highways Pilot Project, San Jose and Morgan Hill.

Willow Springs Solar Array, Kern County.

General Plan Studies

Buena Park 2035 General Plan Update, Buena Park.

Duarte General Plan Update, Duarte.

The Fullerton Plan, General Plan Update) and Climate Action Plan, Fullerton.

Garden Grove General Plan Update, Garden Grove.

Hawaiian Gardens General Plan Update, Hawaiian Gardens.

Murrieta General Plan 2035 and Climate Action Plan, Murrieta.

Lancaster General Plan Update, Lancaster.

Los Gatos General Plan Update, Los Gatos.

South Gate General Plan Update, South Gate.

Stanton General Plan Update, Stanton.

Peer Reviews

Ayres Hotel, Orange.

Azusa Materials Recovery Facility, Azusa.

Chapman University Performing Arts Center, Orange.

Lower West Wind Energy Project, Kern County.

Climate Change

Murrieta Climate Action Plan, Murrieta, California. Environmental Analyst. As part of the General Plan Update, Michael Baker prepared the Climate Action Plan (CAP) for the City based on the proposed land use changes in the City. The initial stage involved a Citywide Greenhouse Gas (GHG) inventory, which is being prepared in collaboration with the International Council on Local Environmental Initiatives (ICLEI). The CAP included criteria for addressing subsequent developments' consistency with the CAP and a methodology for determining significance of future project climate change impacts. Implementation of the CAP is expected to reduce citywide GHG emissions by Year 2030.

Antelope Valley Area Plan Update Carbon Footprint Maps, Antelope Valley, California. Environmental Analyst. Development of the Carbon Footprint Maps involved the quantification of a GHG emissions inventory for the Antelope Valley planning area. The carbon footprint maps utilize GIS technology to indicate the magnitude of emissions under the current land use pattern and the rural smart growth strategy of each emissions inventory. The carbon footprint maps provide a GIS based geographical illustration of the emissions by each land use sector.

South Gate General Plan Update EIR and Citywide GHG Inventory / Reduction Plan, South Gate, California. Environmental Analyst. As part of the air quality and climate change analysis, Michael Baker performed an extensive greenhouse gas (GHG) inventory for the City of South Gate. Michael Baker quantified GHG emissions for existing and projected 2035 General Plan Buildout conditions. Quantified GHGs included carbon dioxide, nitrous oxide, and methane, produced from mobile and stationary sources within the City. Michael Baker quantified GHG emissions for direct and indirect emissions utilizing City land use, traffic, energy consumption, water supply, and solid waste data. Michael Baker utilized proprietary models and emission quantification software in conjunction with these data to perform GHG inventories. Michael Baker also prepared a quantified reduction plan to ensure that forecast Year 2035 GHGs fell below the targeted reductions promulgated by Assembly Bill 32.

Garden Grove Citywide GHG Inventory, Garden Grove, California. Environmental Analyst. Michael Baker performed an extensive greenhouse gas (GHG) inventory for the City of Garden Grove. Michael Baker quantified GHGs for existing and projected 2035 General Plan Buildout conditions. Quantified GHGs included carbon dioxide and nitrous oxide, produced from mobile and stationary sources within the City. Michael Baker quantified GHG emissions for direct and indirect emissions utilizing City land use, traffic, and energy consumption data. Michael Baker utilizes proprietary models and emission quantification software in conjunction with these data to perform GHG inventories.

Transportation Studies

5th Street Widening and Improvement Project, Highland.

Cabot- Camino Capistrano Bridge Improvements, Mission Viejo.

College Boulevard Widening Project, Oceanside.

Interstate 10 / Jefferson Street Interchange, Indio.

Interstate 880 Operational and Safety Improvements, Oakland.

State Route 62 Public Lands Highway Discretionary Fund Project, Yucca Valley.

State Route 241 Loma Segment Widening Project, Orange County.

Residential Studies

Carrari Ranch, Rancho Cucamonga.

Crestridge / Vellana Senior Development, Rancho Palos Verdes.

Department of Water and Power Specific Plan Amendment, Seal Beach.

Laurel Park at Moorpark Highlands, Moorpark.

Sandalwood Affordable Housing Project, Big Bear Lake.

Serrano Summit, Lake Forest.

Weber Property Residential Development, Danville.

Mixed-Use and Specific Plan Studies

Albright Way Development Project, Los Gatos.

Butterfield Specific Plan, Banning.

Downtown Dublin Specific Plan EIR, Dublin.

Dumbarton TOD Specific Plan, Newark.

Historic Downtown Upland Specific Plan, Upland.

Imperial Highway Corridor Specific Plan, La Mirada.

Lancaster Downtown Specific Plan, Lancaster.

NWC Katella Avenue and Winners Circle, Cypress.

Perris Downtown Specific Plan, Perris.

San Fernando Parking Lots Project, San Fernando.

San Bernardino Merged Area A and B, San Bernardino.

South Pasadena Downtown Revitalization Project, South Pasadena.

Commercial / Institutional / Infrastructure Studies

Eagle Canyon Dam, Palm Springs and Cathedral City.

Equinix Data Center, El Segundo.

Filos Dobler Annexation EIR, Tracy.

Marymount College Facilities Expansion, Rancho Palos Verdes.

Nash Data Center, El Segundo.

Pacific Edge / Vacation Village Resort Hotel Project, Laguna Beach.

Pacific Trade Center 4000 North Arden Drive, El Monte.

The Rose Gardens at Santa Teresita Master Plan, Duarte.

Temple City Gateway Plaza Project, Temple City.

Temple Palms Business Park, El Monte.

Santa Ana River Trail, Orange County.

Woodland Commerce Center, Woodland.

Renewable Energy Projects

Cuyama Solar Array, Santa Barbara County.

Monte Vista Solar Array, Kern County.

Rosamond Solar Array, Kern County.

Solar Highways Pilot Project, San Jose and Morgan Hill.

Willow Springs Solar Array, Kern County.

General Plan Studies

The Fullerton Plan, General Plan Update) and Climate Action Plan, Fullerton.

Buena Park 2035 General Plan Update, Buena Park.

Lancaster General Plan Update, Lancaster.

Garden Grove General Plan Update, Garden Grove.

Los Gatos General Plan Update, Los Gatos.

Acoustics

Legacy Park Project- Neighborhood G, Tustin, California. Acoustical Analyst. Neighborhood G includes a new planned residential development that incorporates related commercial uses. An Elementary School site was included adjacent to the Tustin/Irvine border. In addition, two neighborhood parks are to be incorporated into the development. The acoustical document included analyses for future build noise, stationary and mobile source noise, as well as on-site noise and architectural mitigation. Based on the acoustical modeling results, mitigation measures were then implemented to ensure that exterior and interior noise at each of the residential units would comply with the City's noise standards.

Transportation Studies

Cabot- Camino Capistrano Bridge Improvements, Mission Viejo.

College Boulevard Widening Project, Oceanside.

Interstate 15 / State Route 79 South Interchange, Temecula.

Interstate 880 Operational and Safety Improvements, Oakland.

Sand Canyon Avenue Grade Separation, Irvine.

State Route 91 Environmental Revalidation/Addendum, Anaheim and Fullerton.

State Route 241 Loma Segment Widening Project, Orange County.

Residential Studies

Amli at Spanish Hills, Camarillo.

Carrari Ranch, Rancho Cucamonga.

Campus Pointe Senior Housing Project, Fresno.

Crestridge / Vellana Senior Development, Rancho Palos Verdes.

Department of Water and Power Specific Plan Amendment, Seal Beach.

Laurel Park at Moorpark Highlands, Moorpark.

Lyon Homes Alderwood and Vista Verde Projects, Irvine.

Osborne Hill, Nevada County.

Salt Creek, Redding.

Sandalwood Affordable Housing Project, Big Bear Lake.

Serrano Summit, Lake Forest.

Villa Palmera Residential Development, Coachella.

The Vineyards at Menifee, Riverside County.

Mixed-Use and Specific Plan Studies

231-265 North Beverly Drive Project, Beverly Hills.

601 North Parkcenter Drive, Santa Ana.

Albright Way Development Project, Los Gatos.

Butterfield Specific Plan, Banning.

Cottonwood Creek Project, Riverside.

Downtown Dublin Specific Plan EIR, Dublin.

Dumbarton TOD Specific Plan, Newark.

Historic Downtown Upland Specific Plan, Upland.

Imperial Highway Corridor Specific Plan, La Mirada.

Lancaster Downtown Specific Plan, Lancaster.

NWC Katella Avenue and Winners Circle, Cypress.

Perris Downtown Specific Plan, Perris.

San Bernardino Merged Area A and B, San Bernardino.

San Fernando Parking Lots Project, San Fernando.

South Pasadena Downtown Revitalization Project, South Pasadena.

Tustin Legacy, Tustin.

Commercial / Institutional / Infrastructure Studies

Barstow Wastewater Reclamation Facility Upgrades Project, Barstow.

Bonita Canyon Drive Trail, Irvine.

Capistrano Bluffs / Pines Park Sewer Improvements, Dana Point.

Castaic Lake Water Agency Rio Vista Valve Vault Acoustical Study, Santa Clarita.

Eagle Canyon Dam, Palm Springs and Cathedral City.

Equinix Data Center, El Segundo.

Etiwanda Marketplace Acoustical Assessment, Rancho Cucamonga.

Filos Dobler Annexation EIR, Tracy.

Firestone at Soquel Canyon Crossings, Chino Hills.

French Valley Business Park, Riverside County.

Hayes Avenue Well Project, Murrieta.

High Tech High School, Chula Vista.

Irvine Ranch Water District Wells 21 and 22 Constraints Study, Irvine.

Indian Hill Well Acoustical Study, Claremont.

Jackson Avenue Soundwall Study, Temecula.

La Bahia Hotel Project, Santa Cruz.

Marymount College Facilities Expansion, Rancho Palos Verdes.

Montage Beverly Hills Hotel, Beverly Hills.

McCall Road Medical Development, Sun City.

Nash Data Center, El Segundo.

National City Costco, National City.

Pacific Edge / Vacation Village Resort Hotel Project, Laguna Beach.

Pacific Trade Center 4000 North Arden Drive, El Monte.

Poseidon Seawater Desalination Project, Huntington Beach.

The Rose Gardens at Santa Teresita Master Plan, Duarte.

Santa Ana River Trail, Orange County.

SDG&E Bayfront Substation Project, San Diego County.

Temple City Gateway Plaza Project, Temple City.

Temple Palms Business Park, El Monte.

Temporary Ocean Water Desalination Demonstration Project, Redondo Beach.

Woodland Commerce Center, Woodland.

Renewable Energy Projects

Adobe Solar Project, Kern County.

Cuyama Solar Array, Santa Barbara County.

FRV Mojave Solar Project, Kern County.

Monte Vista Solar Array, Kern County.

Newberry Springs Solar Project, San Bernardino County.

Orion Solar Project, Kern County.

Regulus Solar Project, Kern County.

Rigel Solar Project, Kern County.

Rosamond Solar Array, Kern County.

Solar Highways Pilot Project, San Jose and Morgan Hill.

Willow Springs Solar Array, Kern County.

General Plan Studies

Buena Park 2035 General Plan Update, Buena Park.

Duarte General Plan Update, Duarte.

The Fullerton Plan, General Plan Update) and Climate Action Plan, Fullerton.

Garden Grove General Plan Update, Garden Grove.

Hawaiian Gardens General Plan Update, Hawaiian Gardens.

Murrieta General Plan 2035 and Climate Action Plan, Murrieta.

Lancaster General Plan Update, Lancaster.

Los Gatos General Plan Update, Los Gatos.

South Gate General Plan Update, South Gate.

Stanton General Plan Update, Stanton.

Peer Reviews

Ayres Hotel, Orange.

Azusa Materials Recovery Facility, Azusa.

Chapman University Performing Arts Center, Orange.

Environmental Studies

The Rose Gardens at Santa Teresita Master Plan EIR, Duarte, California. Environmental Analyst. The Master Plan involved redevelopment of an existing medical facility that included demolition of an existing hospital, assisted living building, and skilled nursing center. The project involved construction of new skilled nursing facilities as well as assisted living and independent living units. Buildout of the Master Plan would increase the number of beds from the existing 169 to 360, and increase the building square footage by 229,293 square feet to 521,628 square feet, not including a potential parking structure.

Temple City Gateway Plaza Project Subsequent IS/MND, Temple City, California. Environmental Analyst. The Gateway Plaza Project involved the development of a 35,000 square foot regional supermarket, 14,500 square feet of retail uses, 14,500 square feet of office uses, and 11,000 square feet of Restaurant uses. The subsequent analysis for the project included a full greenhouse gas analysis pursuant to the requirements of California Assembly Bill 32 and Senate Bill 375.

Carrari Ranch Specific Plan EIR, Rancho Cucamonga, California. Environmental Analyst. The City of Rancho Cucamonga is in the process of analyzing a 107-unit single-family residential project within the hillsides of its northern Sphere of Influence. This controversial project requires the analysis of a range of environmental issues, including aesthetics, biology, cultural resources, traffic, and public safety, among others. The project also requires a General Plan Amendment and a Zone Change to allow for the residential density proposed for the project site.

Contra Costa Community College District, New Brentwood Campus Supplemental EIR, Brentwood, California. Environmental Studies. Assisted in preparing environmental studies for a Supplemental EIR for the new Brentwood Campus. Prepared the Air Quality / GHG sections pursuant to BAAQMD's 2010 Air Quality Guidelines.

Mission 261 Village Supplemental EIR, San Gabriel, California. Environmental Analyst. The proposed mixed-use project consisted of 74,620 square feet of development, including 30 residential condominiums, a 54-room boutique hotel, 15,160 square feet of retail and restaurant uses, and a subterranean parking structure with 227 stalls. The Supplemental EIR identified short- and long-term impacts associated with the proposed project and included analysis of changes to the Mission District Specific Plan EIR. Changes to the Mission District Specific Plan EIR included increasing the FAR from 1.0 to 1.3 and increasing the number of allowable dwelling units.

Photovoltaic Site Due Diligence, Southern California. Michael Baker is providing site due diligence studies for upwards of 30 sites in Kern, San Bernardino, Imperial, Riverside, San Luis Obispo, and Los Angeles Counties, California. The due diligence studies include analysis of topography, hydrology/geomorphology analysis, constraints (paper survey) mapping, geotechnical feasibility, site access road assessment, and off-site cost estimating for sites typically 500 to 3000 acres in size. This project is a key component in California's goal of 20 percent renewable energy by 2010.

Fox Plaza EIR, Riverside, California. Environmental Analyst. The proposed mixed-use project consisted of 532 condominium dwelling units, a 400-space parking structure, and 88,000 square feet of restaurant and retail uses. The EIR identified short- and long-term impacts associated with the proposed project, assuming construction of the proposed project in two phases.

James Donlon Boulevard Extension Environmental Impact Report, Pittsburg, California. Technical Studies. Assisted in the preparation of the air quality and noise studies for an EIR for the proposed extension of James Donlon Boulevard from Kirker Pass Road in Pittsburg to Somersville Road in Antioch. The project is a two-mile east / west limited access arterial extension in the undeveloped hills within the City of Pittsburg's Sphere of Influence in incorporated Contra Costa County. While the extension will ultimately be a four-lane divided highway, the initial project proposed the development of the ultimate configuration at the Kirker Pass intersection narrowing the road to a two-lane configuration through the hillside portion of the project to save construction costs.

Loma Rica Ranch Specific Plan Environmental Impact Report, City of Grass Valley, California. The Specific Plan proposes a mixed-use sustainable community based on the principals of new urbanism and green building that would be developed on approximately 452-acres located east of the City of Grass Valley. The Loma Rica Ranch project site is located within the City's Sphere of Influence but is not within the City limits. The project would involve annexation of the project site to the City, and an amendment to the City's General Plan that would allow development of up to 700 residential units, 364,000 square feet of light industrial and business park uses, 54,000 square feet of retail and commercial use, 314-acres of open space, including improved parks, farm land and natural open space. 2010

SDG&E Bayfront Transmission Station, Chula Vista, California. Environmental Analyst. The project proposes to construct the new Bayfront transmission substation at the existing South Bay Substation site to replace the aging and obsolete substation. The Project would demolish the existing decommissioned powerhouse and other facilities once the transition has been made from the existing substation to the proposed Bayfront Substation. The project also proposed upgrades to associated project components at three regional transmission substations. Key project issues included temporary construction-related impacts, long-term operational impacts, as well as cumulative impacts.

Equinix Data Center IS/MND, City of El Segundo. Environmental Analyst. The project proposes the renovation and expansion of the existing Douglas Technology Center. Building renovations would occur in the entrance lobbies, office space, collocation server warehouse, and service bay. To accommodate the power needs, a Southern California Edison (SCE) 50 mega-watt (MW) substation is proposed to be constructed on-site. The substation would include transformers and circuit breakers, and two overhead 66 kV sub-transmission lines, that would connect to existing above ground power lines. Major issues that arose were long-term aesthetics/lighting and glare impacts, long-term noise impacts, and short-term air quality impacts.

Nash Street Data Center IS/MND, City of El Segundo. Environmental Analyst. The project includes environmental review pursuant to CPUC requirements (due to substation construction permits). The proposal involves the renovation and expansion of an existing 82,857 square foot warehouse and office building, located on a 6.14-acre site. The project would expand the existing building from 82,857 square feet to 116,756 square feet. The project also proposes construction of a 66kv electrical substation. Michael Baker's work program for the project also includes the preparation of focused studies for traffic and air quality.

Seal Beach Townhomes IS / MND, Seal Beach, California. Environmental Analyst. Evaluated impacts for the IS / MND prepared for the development of 87 townhomes on 4.5-acres adjacent to the Boeing Specific Plan Area and the Naval Weapons Station at Seal Beach.

Interceptor Upgrades Project for the Victor Valley Wastewater Reclamation Authority IS / MND, City of Victorville, and Town of Apple Valley, California. Served as Environmental Analyst for the IS / MND prepared for the VVWRA. The project includes upgrades to the existing sewer interceptor pipeline, the rehabilitation of one pump station, and construction of a new pump station.

San Gabriel Center / Site C EIR, City of San Gabriel, California. Environmental Analyst. Evaluated impacts for the EIR, which involves the redevelopment of 39,000 square feet of commercial uses, with an 18,000 square foot, 159 dwelling unit, mixed-use project.

The Village at Redlands EIR, Redlands Mall Redevelopment Project, City of Redlands. Environmental Analyst. Evaluated the proposed impacts of 230 multi-family dwelling units and 220,000 square feet of retail. The EIR for The Village at Redlands project in downtown Redlands proposes to redevelop the entire site from commercial uses to a mixed-use development with both commercial and residential uses.

Mancara Residential Development EIR, City of Santa Clarita, California. Environmental Analyst. Evaluated impacts for the EIR, which involved the development of 108 single-family residential units and open space areas on approximately 185-acres of land.

Los Alamitos Pump Station IS / MND, County of Orange, California. Environmental Analyst. Evaluated impacts for the IS / MND prepared for the Los Alamitos Pump Station and associated Retarding Basin. The pump station would be upgraded to provide for adequate drainage, while the basin would be modified to provide a constructed wet basin / channel to achieve dry weather flow water quality treatment.

Mental Health Association Mixed-Use Housing Project Environmental Assessment, Lancaster, California. **Environmental Analyst.** Responsible for an Environmental Assessment (EA) for 2.29-acres located within the North Downtown Lancaster Neighborhood Revitalization / Transit Village Plan area. The project involved development of 111 multi-family units and over 20,000 square feet of social service space to provide affordable rental units and social service space in proximity to recreation, public transit, employment, schools, and commercial facilities. The EA was prepared in accordance with HUD guidelines in compliance with NEPA. The environmental

review included land development noise, air quality, transportation, socioeconomic, and community facilities and services.

Garvey Villas IS / MND, Monterey Park, California. Environmental Analyst. Responsible for the IS / MND prepared for the mixed-use development of an approximately two-acre site that included 98 luxury residential units and 22,000 square feet of commercial uses. Key environmental and community issues included traffic and circulation, pedestrian access, and economic development.

University of California, Riverside Student Academic Support Services Building IS / MND, Riverside, California. Environmental Analyst. Responsible for the IS / MND prepared for the development of the more than 58,000 square foot Student Academic Support Services (SASS) Building. The SASS Building would provide office and support space for core State-supported administrative services functions for students at UCR. Greater control over the management of administrative functions and the quality of service delivered to students would also be achieved.

Rialto Super Wal-Mart, Rialto, California. Environmental Analyst. Responsible for the preparation of an Environmental Impact Report analyzing the potential impacts of the development of an approximately 284,000 square foot commercial retail center anchored by a Wal-Mart Supercenter, and seven commercial parcels. Significant issues are traffic, public utilities, noise, air quality, cultural resources, and hydrology, among others.

Continuing Education/Training

Practical Air Dispersion Modeling Workshop, Trinity Consultants, July 2008

8th Annual Sound and Vibration Conference, Brel & Kjr, May 2007

Project Management Foundations Program, Michael Baker, December 2006

The Role of CEQA in Public Health, UCLA Extension, 2007

Successful CEQA Compliance, UCLA Extension, 2006

Introduction to Traffic Noise Modeling, Michael Baker, 2006

AutoCAD at a Glance, Michael Baker, 2006

CEQA Basics: Understanding the California Environmental Process, AEP Workshop, 2005

Air Quality Analysis and Modeling Techniques, Michael Baker, 2005

Rule 403 Fugitive Dust Control Class, South Coast AQMD, 2005

CEQA Basics: Understanding the California Environmental Process, AEP Workshop, 2005

Specialized Experience

Mr. Malisos has experience in all project aspects and phases, including short-term construction emissions and long-term operational emissions. Mr. Malisos also develops mitigation measures necessary to reduce or avoid project

and cumulative air quality impacts. Achilles has extensive experience in the preparation of health risk assessments, as well as air quality assessments for Caltrans and FHWA, and conformity analyses for federally funded projects.

Climate Change

Achilles prepares climate change analyses and Climate Action Plans in compliance with recent legislation such as Assembly Bill 32, Senate Bill 97, Executive Order S-3-05, and Senate Bill 375. Mr. Malisos has developed numerous greenhouse gas inventory models that calculate existing and future greenhouse gas emissions from vehicular traffic, stationary sources, electricity consumption, water consumption, wastewater treatment, and construction processes.

Acoustics

Mr. Malisos also provides a full range of noise impact analyses for public and private sector clients, in accordance with local, state and federal impact assessment criteria. Noise impact analyses are prepared as part of environmental documents or as separate studies, addressing changes in ambient and noise levels associated with vehicle traffic, rail traffic, aircraft, and stationary sources. Mr. Malisos utilizes his experience with noise monitoring using Type I rated instruments, as well as sophisticated noise modeling using FHWA-RD-77-108 and Traffic Noise Model 2.5 to develop noise barrier recommendations where necessary. Additionally, Mr. Malisos has the ability to provide integrated GIS based maps depicting roadway noise contours and sensitive receptors.

Environmental Studies

As an Environmental Analyst, Mr. Malisos focused on land use and compatibility issues as well as air quality, noise, biological resources, cultural/historic resources, and agricultural resources. The due diligence studies identified the key constraints and opportunities for each potential site.

Computer Skills

Adobe Acrobat Professional
Adobe Photoshop
AutoCAD
FHWA Traffic Noise Model (TNM)
Microsoft Excel
Microsoft Word

Instrument Proficiency

dB Sound Levels
DSLR Camera

Alex A. Pohlman, E.I.T., LEED AP

Environmental Planner

Years with Michael Baker: 8
Years with Other Firms: 1

Degrees

M.S., 2007, Environmental Engineering, National University

A.A., 2005, Biology, Fullerton College

B.F.A., 1999, Graphic Design, California State University at Fullerton

Licenses/Certifications

LEED Accredited Professional, 2008

Engineer-In-Training, California, 2011

General Qualifications

As an Environmental Planner, Mr. Pohlman prepares environmental and planning studies for public and private sector clients in accordance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Utilizing his background and understanding of environmental constraints, Mr. Pohlman provides CEQA and NEPA compliance review and environmental documentation, in addition to research, analysis, and writing. Mr. Pohlman has worked on projects in the Counties of Los Angeles, Riverside, and San Bernardino.

Mr. Pohlman previously worked as a Consultant for the Santa Ana Watershed Project Authority (SAWPA). His duties and responsibilities involved writing water quality reports, and creating maps using GIS. In addition, Mr. Pohlman was involved in the research, writing, review, and production of the 2009 Santa Ana Integrated Watershed Plan.

Experience

Avenue 50 and 52 Crossing/Eastside Dike Levee Evaluation, Coachella Valley, California. *PSAV, LLC.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared regional hydrology, hydraulic, and sedimentation analyses for the 51-square-mile watershed tributary to the Eastside Dike Levee along the Coachella Canal. The project evaluated the condition of the existing levee and identified options for two roadway crossing encroachments across the levee system. Regional hydrology was prepared for this arid region using the HEC-1 program. Flood routing and maximum water surface profiles along the dike were prepared using FLO-2D. The analysis evaluated the dispersion of flows along the dike from the 10 major drainage systems which are tributary to the system.

Bio Report for TT Map 18583. *Highland Fifth-Orange Partners, LLC.* Environmental Planner. Responsible for environmental documentation.

Biological Resources Rpt. *Lewis Operating Corporation.* Environmental Planner. Responsible for environmental documentation.

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Environmental Planner. Responsible for environmental documentation. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Date Palm Drive Bridge over Whitewater River, Cathedral City, California. *City of Cathedral City.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided

environmental documentation and final engineering for a 760-foot-long bridge project that consisted of widening from four lanes to six lanes of traffic; seismic retrofit; and roadway improvements, including pedestrian and bike lane enhancements. The original 1981 bridge consisted of nine spans, precast P/S I-girder supported on pier walls, and pile foundations. The symmetrical widening matched the existing superstructure type on a 45 degree skew. Scour protection countermeasures were used for protecting existing piles while new pile foundations were placed at sufficient depth to resist high scour conditions. Other features included retrofitting with the existing bridge with girder cable restrainers, hinge retrofit, and deck repairs. The HBR project complied with Caltrans latest 2010 Amendments, including SDC and LRFD criteria, and Local Assistance Procedures Guide in District 8.

Full-Scale Desalination Facility - Feasibility Study, Los Angeles County, California. *West Basin Municipal Water District.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided engineering, environmental, and regulatory permitting expertise related to the client's overall desalination program, including full-scale desalination plant feasibility and siting studies. Work efforts included regulatory permitting and site constraints assessments for an El Segundo site (co-located with NRG's El Segundo Generating Station), conceptual studies for additional alternative sites, and technical support on lease negotiations with potential site owners.

Don Wallace Multiuse Trail, Calabasas, California. *LA County Parks & Recreation.* Environmental Planner. Responsible for environmental documentation. Michael Baker is providing environmental and engineering services for a 1,800-foot multiuse trail along Las Virgenes Creek. Michael Baker's services include geotechnical investigation, structural analysis, hazardous materials investigation, hydrology and hydraulic analysis, preparation of a survey and property easement report, preparation of construction documents, permitting, and agency coordination.

El Camino Real Bridge and Road Widening, San Diego, California. *City of San Diego Economic Development.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits. Michael Baker assisted with preparation of an environmental assessment (EA) under the National Environmental Policy Act (NEPA) for the El Camino Real Bridge Widening Project. The project was required to correct seismic and operational deficiencies associated with the existing El Camino Real Bridge. The city proposed to reconstruct and widen the 340-foot long bridge over the San Dieguito River. The EA and supporting technical studies included preparation of a detailed biological analysis to determine potential impacts to federally listed species. In addition, the project required extensive coordination with multiple state and federal regulatory agencies. Other primary issues included aesthetics, noise, wetlands, and hydrology/water quality.

ID/IQ Planning and Civil Engineering for Civil Works Projects, W912PL-10-R-0033, USACE, Los Angeles District, California. *U.S. Army Corps of Engineers, Los Angeles District.* Environmental Planner. Responsible for environmental documentation.

Interstate 10/Jefferson Street Interchange Improvements. *County of Riverside.* Environmental Planner. Responsible for environmental documentation.

La Entrada Drainage and Hydrology Studies, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsible for environmental documentation. The project site includes seven regional conveyances and coalescing alluvial fans tributary to the Eastside Dike along the Coachella Canal. Michael Baker completed regional hydrology studies for the 50.6 square mile watershed, and 1- and 2-dimensional flood routing analyses to support the technical studies and identified the recommended improvements and project mitigation measures for the project site development. Michael Baker identified a whole fan flood hazard management program and developed the alignment and conceptual design for seven regional channels through the site.

La Entrada Specific Plan, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the Delineation of Jurisdictional Waters for the 2,200-acre La Entrada Specific Plan Project, located in the City of Coachella, California. The La Entrada Specific Plan consists of a master planned residential community will include three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan.

La Entrada Specific Plan - Regulatory, Coachella, California. *PSAV, LLC.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the delineation of jurisdictional waters for the 2,200-acre La Entrada Specific Plan Project. The development consists of a master planned residential community that includes three village areas with mixed-use community cores, significant sustainability elements, and a robust parks and open space plan. Michael Baker performed an extensive literature review and conducted multiple field surveys to document baseline conditions and map the extent of jurisdictional features within the boundaries of the project site that could pose a constraint to development. Once jurisdictional features were mapped, Michael Baker quantified project impacts and provided the client with a permitting and mitigation strategy.

North Basin Recharge Project EIR, Riverside, California. *City of Riverside.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits. Michael Baker is preparing the EIR for the Riverside Public Utilities Santa Ana River inflatable dam construction and diversion project. The project includes analysis of off-stream recharge basins and an in-stream inflatable dam that would capture 75 acre feet of water and divert 200 cfs of storm flows from the river to the recharge basins. In addition to Army Core of Engineers (ACOE) jurisdiction over the Santa Ana River embankment modifications, the project requires extensive coordination/compliance with regulatory agencies due to downstream and surrounding sensitive habitat.

Sustainability Action Plan for the National Naval Medical Center, California. *Michael Baker International, Inc.* Environmental Planner. Responsible for environmental documentation. Michael Baker and Michael Baker produced a Sustainability Action Plan for the Naval Support Activity (NSA) Bethesda, a 245-acre military installation located in Bethesda, Montgomery County, Maryland, approximately three miles north of the Washington, D.C. border. This is also the Navy hospital that serves the President of the United States. NSA Bethesda is a medical complex that includes the National Naval Medical Center (NNMC), the Uniformed Services University of Health Sciences (USUHS), and Walter Reed National Military Medical Center (WRNMMC). In addition to the medical facilities, the site includes natural forested and stream areas as a part of the Chesapeake Bay Watershed.

Orange County On-Call Regulatory Services, Orange County, California. *County of Orange.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits. Under multi-year agreements since 2003, Michael Baker has been providing environmental, regulatory, and ecosystem restoration services for a variety of projects. Generally the projects have included channel, roadway, and regional park improvements. Michael Baker's work efforts have included detailed jurisdictional delineations, resource agency coordination and negotiation, creative problem solving with project design, California Environmental Quality Act (CEQA) compliance, biological and cultural assessments, application submittals to state and federal resource agencies, and permit acquisition.

Rancho San Gorgonio SP Contract No. RSFA1030.*Rancho San Gorgonio, LLC.* Environmental Planner. Responsible for environmental documentation.

Environmental Compliance Monitoring for the Silver State North Solar Project, Primm, Nevada. *First Solar, Inc.* Environmental Planner. Responsible for environmental documentation. The Silver State North Solar Project is

a 400-acre solar project on BLM lands in Primm, Nevada. The Nevada BLM hired Michael Baker to manage all environmental compliance issues for the project on their behalf.

Terra Lago Four Seasons Project, Indio, California. *K. Hovnanian Companies of California.* Environmental Planner. Responsible for environmental documentation.

Valley Crest and Yucca Reservoirs, Apple Valley, California. *Golden State Water Company.* Environmental Planner. Responsible for environmental documentation. Michael Baker conducted a habitat assessment for the Valley Crest and Yucca Reservoirs Project, located in the Town of Apple Valley, San Bernardino County, California. In order to meet increases in demand and improve service to surrounding residents, Golden State Water Company (GSWC) is proposing to construct two 500,000 gallon above ground reservoir tanks and associated underground pipelines in order to connect both reservoirs to existing infrastructure.

Deep Creek EIR, Apple Valley, California. Environmental Planner. Prepared Biological Resources section, performed GIS data analysis, and produced GIS maps and graphic exhibits. Michael Baker was hired by the County of San Bernardino to prepare a court-ordered environmental impact report (EIR) for the Deep Creek project, which would allow the development of 202 residential lots on approximately 249 acres in the unincorporated area of the county. The EIR was required after the Deep Creek Agricultural Association challenged the County of San Bernardino for not adequately studying the project's impacts. The Court of Appeal of the State of California, Fourth Appellate District determined that the EIR must assess impacts to biological resources and traffic.

Soil Safe Property - Regulatory Services, Colton, California. *Soil Safe Incorporated.* Environmental Planner. Performed GIS data analysis and prepared GIS maps and graphic exhibits. Michael Baker prepared an environmental impact report (EIR) for the Soil Safe Project in Colton, California. The project proposed the reclamation of approximately 29 acres of land currently located within the Santa Ana River floodplain. To achieve this, the project mixed approximately 500,000 cubic yards of imported fill with Portland cement and placed this fill within the subject properties until the desired grade was achieved. Once the desired grade was achieved, the project was considered complete and all on-site equipment was removed, leaving approximately 29-acres of property that was no longer located within the 100-year flood plain of the Santa Ana River. Major environmental issues included aesthetics, biological resources, and transportation due to the truck traffic.

South Adelanto Annexation Area, Adelanto, California. *Hogle-Ireland Inc.* Environmental Planner. Produced GIS maps and graphic exhibits. Michael Baker prepared a program environmental impact report for the proposed annexation of approximately 2,832 acres of land into the southern portion of the city. The environmental issues addressed included: public controversy, traffic, air quality, noise, public services, utilities, and land use.

Southwest Industrial Park Specific Plan, Fontana, California. *Fontana, City of.* Environmental Planner. Performed GIS data analysi and produced GIS maps and graphic exhibits. Michael Baker managed the update to the existing Southwest Industrial Park Specific Plan in the City of Fontana. The original plan was composed of four project areas totaling approximately 1,863 acres within the southern portion of the City. The updated plan expanded to approximately 3,200 acres, encompassing a mixture of residential, commercial, and industrial uses recently annexed by the city. Michael Baker prepared an updated set of design guidelines as part of the plan.

Sewer Video Survey and Condition Assessment, Temecula, California. *Rancho California Water District.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided an inspection and condition assessment for one of five Rancho California Water District (RCWD) sewer service areas covering approximately 80 miles of sewer. Michael Baker provided a master plan evaluation of the assigned portion

of the sewer system and performed a land survey to determine the coordinates of the manhole covers within the area to within 0.1 foot. The pipeline inspections were performed in close coordination with the District's field crews. A thorough engineering review of the inspection data was performed to generate recommended capital and maintenance projects and to provide estimates of the construction costs. In addition, Michael Baker created an interactive internet-based GIS browser application to track the status of the project and provide an interactive problem/action form to track and resolve project issues immediately. The browser allowed the District to view inspected pipelines, watch related CCTV videos, and see logs and snapshots of field assessments as they were completed.

Hacienda at Fairview Valley EIR, San Bernardino County, California. *County of San Bernardino.* Environmental Planner. Responsible for environmental planning. Michael Baker prepared an environmental impact report for the Hacienda at Fairview Valley project, located in unincorporated San Bernardino County, near Apple Valley. The 1,557-acre site is located between the Granite and Fairview mountain ranges and is surrounded by vacant land and several larger-lot single-family residences. In addition, portions of the project site abut BLM land. The project includes the development of 3,114 residential units, 15 acres of neighborhood commercial uses and a public safety complex, and 336 acres of open space. The majority of the residential units would be deed-restricted active-adult units. Major environmental issues include aesthetics, biological resources, seismicity, traffic, public services, public utilities, and emergency access.

Whittier Narrows Dam Water Conservation Deviation Study, Los Angeles County, California. *Water Replenishment District of Southern California.* Environmental Planner. Prepared sections of the EA, and GIS maps and graphic exhibits for the EA and IS. Michael Baker prepared the environmental documentation in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for a temporary deviation from the approved water control plan for the Whittier Narrows Dam to allow an increase in water storage behind the dam from the current operating level of 201.6 feet NGVD to 205 feet NGVD. The project was a collaborative effort and required close coordination with the Water Replenishment District of Southern California (WRD), the Los Angeles County Flood Control District (LACFCD), and the U.S. Army Corps of Engineers (USACE).

Environmental Review for Potential Solar Sites, CA, AZ, and NV, California. *Granite Construction Company.* Environmental Planner. Conducted research and wrote environmental reports on multiple sites, prepared an Initial Study for Garnet Solar Power Generation Station 1, prepared entitlement information for multiple sites, and performed GIS data analysis and prepared GIS maps and graphic exhibits. Michael Baker conducted an initial environmental review of 14 sites across California, Nevada, and Arizona for their potential to support utility-scale solar photovoltaic panels that would tie into the electric transmission grid. This review included current land uses, condition of property and proposed location of the solar facilities, review of land use permits, existing EIRs, reclamation plans, environmental permits and studies, determination of general plan designation, and zoning. The research resulted in the determination of key environmental issues on each property as they related to the solar project, including water bodies, wetlands, endangered species, and visual impact concerns. The research also resulted in a preliminary determination of the required CEQA-NEPA compliance document.

Butterfield Specific Plan and EIR, Banning, California. *Pardee Homes.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for the Butterfield Specific Plan, a 1,543-acre development that includes golf course, school sites, open space, commercial uses, and up to 5,387 residential units. Critical environmental issues included aesthetics, transportation and circulation, global warming, hydrology and water quality, and biological resources.

Pre-Construction Nesting Bird Clearance Surveys, California. *R.Y. Engineering Works, Inc.* Environmental Planner. Responsible for environmental documentation.

Riverside North Aquifer and Storage Recovery Project, Riverside and San Bernardino C, California. *City of Riverside.* Environmental Planner. Prepared the CEQA Initial Study; prepared environmental sections of the EIR; performed GIS data analysis; prepared GIS maps and graphic exhibits. Michael Baker prepared an environmental impact report and provided topographic mapping and conceptual engineering support for the Riverside Groundwater Aquifer Storage and Recovery Project, to provide groundwater recharge facilities along the Santa Ana River. The project proposes the construction of an inflatable dam across the Santa Ana River, water lines, and groundwater recharge basins for capturing and recharging stormwater and imported water on the City of Riverside's Flume Well Tract.

San Bernardino International Airport TIGER Grant, Highland, California. *Tom Dodson & Associates.* Environmental Planner. Responsible for environmental documentation.

Thompson Creek, Claremont, California. *League of Women Voters Water Task Force.* Environmental Planner. Responsible for environmental planning. Michael Baker prepared a feasibility study for the Thompson Creek Spreading Grounds funded by a grant from the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy. Located in northern Claremont, the project was performed to improve conservation of stormwater for groundwater recharge, rehabilitate degraded rare habitat, and plan for trails with educational exhibits. The goal of the project was to rehabilitate native flora and fauna of the area and make this wildlife accessible to the public for education. This phase of the project included several community outreach meetings. This project won the Innovation in Green Community Planning Award of Merit at the 2011 from the Inland Empire Section California APA.

Soil Safe Colton Property, California. *Soil Safe of California, Inc.* Environmental Planner. Responsible for environmental documentation. Michael Baker performed engineering and grading design services and an EIR and accompanying technical studies for the reclamation of approximately 29 acres of land currently located within the 100-year floodplain of the Santa Ana River. To raise the elevation of the project site and provide 100-year flood protection to the property and surrounding areas, the project would import approximately 500,000 cubic yards of fill material and place it as soil cement on site until the desired grade is achieved. Issues included flood protection, hydrology and water quality, jurisdictional permitting and processing, and engineering design to accommodate future development.

San Bernardino Merged Area B Merger and Amendments Project EIR, San Bernardino, California. *City of San Bernardino.* Environmental Planner. Responsible for environmental documentation.

USS Iowa Project - Phase 1, Los Angeles, California. *Pacific Battleship Center.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an environmental impact report for the U.S.S. Iowa Project for the Pacific Battleship Center, a non-profit organization, in the Port of Los Angeles. The historic battleship was towed from San Francisco Bay, where it has remained in storage by the U.S. Navy, to the Port of Los Angeles. The battleship will be permanently moored at Berth 87 and open to the public as a tourist and educational attraction. Temporary structures will be placed at the berth for offices and restroom facilities. The second phase of the project includes construction of a permanent landside Visitors Center.

Huntington Beach Hazard Mitigation Plan Update, Huntington Beach, California. *City of Huntington Beach.* Environmental Planner. Responsible for environmental documentation. Michael Baker assisted the City with the update to its 2004 Hazard Mitigation Plan (HMP). The update included review of the existing city plans and policies, identification of critical city facilities necessary to allow city operation, prioritization of hazards,

preparation of hazard profiles that could impact the city, preparation of a risk assessment, and development of updated mitigation actions to reduce potential vulnerabilities in the future.

Wine Country Community Plan Program Environmental Impact Report, Riverside County, California. *Riverside Co. Transportation Commission.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared a programmatic EIR for the Riverside County Planning Department. Because the Temecula Valley Wine Country region was experiencing an unprecedented level of development interest, with more than 30 new projects in process with the County of Riverside, it was necessary for the county to initiate a comprehensive review of the region's vision, policies, and development standards. The proposed project objectives included goals to guide development in the Temecula Valley Wine Country region to preserve and enhance the region's viticulture potential and rural and equestrian lifestyle and to allow for appropriate levels of commercial development. The resulting Temecula Valley Wine Country Community Plan provides a blueprint for growth to ensure that future development activities will enhance the quality of life for current and future residents.

Cajon Creek Logistics Park, San Bernardino, California. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared a Delineation of Jurisdictional Waters and Biological Habitat Assessment to document baseline conditions on the Cajon Creek Logistics Park Project site. The project included development of a 1,256,820-square-foot high-cube logistic facility and a 327,610-square-foot logistic facility situated on approximately 88.87-acres. Michael Baker conducted multiple site visits and a thorough literature review to document baseline conditions and determine the jurisdictional authority. The site was also evaluated for its potential to provide suitable habitat for sensitive biological resources, including San Bernardino Kangaroo Rat, Coastal California Gnatcatcher, Burrowing Owl, Santa Ana River Wooly Star, and Slender-horned Spineflower.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Environmental Planner. Responsible for environmental documentation.

Development Agreement Program / Ellis Specific Plan EIR, Tracy, California. *City of Tracy.* Environmental Planner. Responsible for environmental documentation. Michael Baker was responsible for the preparation of a program and project level EIR for the Development Agreement Program (DAP) and 320+-acre Ellis Specific Plan, a transit-oriented, mixed-use project within the City of Tracy's Sphere of Influence. The Ellis Specific Plan provides the general vision, layout and design of a proposed mix of residential, commercial, office/professional and recreational/open space uses (including a 12-acre Swim Center within a 20-acre Community Park) with the focal point of community activities centered around the village center.

Foothill Parkway Westerly Extension, Corona, California. *City of Corona.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared 12 initial concept plans and developed a comprehensive basis of design report based upon design and environmental studies for the westerly extension of Foothill Parkway as a four-lane roadway from approximately 250 feet west of Trudy Way to Green River Road, a distance of approximately two miles. Michael Baker began a public outreach program, designed a comprehensive website, prepared illustrative communications materials, and organized a large-scale, interactive open house focused on details for the roadway extension. Michael Baker also provided engineering services for the preparation of roadway plans, bridge and retaining wall plans, right-of-way engineering, storm drain plans, roadway grading plans, traffic signal plans, landscape and irrigation plans, water line plans, and construction cost estimates.

ATP_Mountain Temple HA/BTR. *The Altum Group.* Environmental Planner. Responsible for environmental documentation.

Biological Consulting Ser. *Robinson's Ready Mix Concrete, Inc.* Environmental Planner. Responsible for environmental documentation.

Rancho California Water District, Pond Five, Murrieta, California. *K.S. Dunbar & Associates, Inc.* Environmental Planner. Responsible for environmental documentation.

Tierrasanta Biological Monitoring, Tierrasanta, California. *Tierrasanta LLC.* Environmental Planner. Responsible for environmental documentation.

Hemet General Wetlands Permit, Hemet, California. *K.S. Dunbar & Associates, Inc.* Environmental Planner. Responsible for environmental documentation. The project involved updating the regional regulatory permits.

RBF_DUNBAR_ATP3 041913.*K.S. Dunbar & Associates, Inc.* Environmental Planner. Responsible for environmental documentation.

Biological Monitoring for. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation.

Blessed Teresa of Calcutta. *Blessed Teresa of Calcutta Church.* Environmental Planner. Responsible for environmental documentation.

Copperfield Surveys. *Legacy Homes.* Environmental Planner. Responsible for environmental documentation.

Cucamonga Basin Crosswalls Maintenance, Upland, California. *Desert Consulting Group, Inc.* Environmental Planner. Responsible for environmental documentation. Michael Baker conducted a habitat assessment for the Cucamonga Basin Crosswalls Maintenance Project. The San Antonio Water Company (SAWCo) crosswall conservation facility consists of a series of rock filled gabion walls designed to collect sediment and debris from flows in Cucamonga Creek. SAWCo is proposing to remove excessive material that has accumulated behind the crosswalls.

Las Montanas Multi-Use Project Master Plan and EIR, Indio, California. *M-TO Management, LLC.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided entitlement services for a 92-acre multi-use project in Indio, California. The project included high density residential, commercial, retail, and office space uses. Michael Baker prepared a project master plan based on the approved Gateway Specific Plan, including such documents as a water supply assessment, negotiations with the Airport Land Use Committee, water and sewer master plans, drainage studies, and grading analysis.

Biological, Cultural, and Paleontological Monitoring for the Replacement of an 18-Inch Waterline, Marina Del Rey, California. *County of Los Angeles.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided biological, cultural, and paleontological monitoring for the replacement of an 18-inch water line along Admiralty Way in the City of Marina del Rey, California. Monitoring efforts included creating an iPad mapping and data collection application to enable instantaneous and accurate in-field assessment of ongoing nesting bird activities and ensure that construction activities did not disrupt nesting birds. Construction noise was also monitored to ensure it did not disrupt nesting behavior. The project site has the potential for sensitive archaeological and paleontological resources. Excavations were monitored daily by a certified archaeologist, certified paleontologist, and a Native American monitor appointed by the local Indian tribes to ensure that any sensitive resources found would be properly recorded and removed.

RBF-7-14-11. *K.S. Dunbar & Associates, Inc.* Environmental Planner. Responsible for environmental documentation.

General Plan Safety Element. *City of Camarillo.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an update to the City's General Plan Safety Element, which included updating existing conditions, developing goals and policies, and reorganization of the existing Safety Element. Michael Baker also provided peer review of the Initial Study/Negative Declaration prepared by the City.

Saratoga Safety Element Update. *Saratoga, City of.* Environmental Planner. Responsible for environmental documentation.

Trabuco Rd/Monroe Ave NEPA Clr. *City of Irvine.* Environmental Planner. Responsible for environmental documentation.

UCI Bio & Cultural Assessment. *University Of California.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Upper Narrows Pipeline Replacement, Victorville, California. *Tom Dodson & Associates.* Environmental Planner. Responsible for environmental documentation. Michael Baker assisted in developing the project description and purpose and need and identifying the necessary environmental technical studies for a project to replace pipelines underneath the Mojave River that were damaged during the winter storm event of 2010.

Upper SAR Final Conservat. *Robinson's Ready Mix Concrete, Inc.* Environmental Planner. Responsible for environmental documentation.

Vail Lake USA. *Vail Lake USA.* Environmental Planner. Responsible for environmental documentation.

SDG&E Mission Facilities Master Plan, Mission Valley, California. *Richard Yen & Associates.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided a long-range Facilities Master Plan for the Mission Control Center site in Mission Valley in San Diego. The Master Plan involved an extensive documentation and analysis of existing and planned development: physical and environmental constraints; and General Plan, Community Plan, Zoning, Development Code and other State and local regulatory, permit and approval history. The Master Plan then coordinated the existing conditions and constraints analysis with all other disciplines (architecture, structural, landscape, civil, planning, company department needs analysis and programming) to prepare a variety of short and long-range development scenarios, opportunities and strategic recommendations for implementation. The Facilities Master Plan was presented to SDG&E Executives to inform capital and facilities management and operational decisions

Hillwood Redlands Dot. Com Site. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation.

Cajon Creek. *Vulcan Materials Company.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Lincoln Avenue Bridge Widening, Anaheim and Orange, California. *County of Orange.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits. Michael Baker prepared the IS/MND for the Lincoln Avenue Widening Project, which involved the widening of Lincoln Avenue from four to six lanes between Kingsley Street and Batavia Street, including widening of the Lincoln Avenue bridge over the Santa Ana River. The project area is jointly owned by the City of Anaheim, City of Orange, and County of

Orange. The effort included the preparation of technical documentation (air quality, greenhouse gas emissions, noise, traffic, hazardous materials, biology and delineation) and the processing of regulatory permits.

Eagle Canyon Dam Environ, Cathedral City and Palm Spring, California. *Riverside Co. Flood Control.* Environmental Planner. Prepared various environmental impact report (EIR) and environmental assessment (EA) sections, including environmental justice and public services and utilities ; provided research for the socioeconomics and environmental quality sections; and produced GIS maps and graphic exhibits. Michael Baker prepared environmental documentation in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for the construction, operation, and maintenance of a dam, debris basin, and underground storm drain located in the cities of Cathedral City and Palm Springs, and in the Agua Caliente Band of Cahuilla Indians land. The Eagle Canyon Dam was needed to prevent further damage to development downstream, which had been severely damaged in the recent past.

RBF-DBESP Blessed Teresa. *Blessed Teresa of Calcutta Church.* Environmental Planner. Responsible for environmental documentation.

RBF-Hofer Ranch Bld 2.*Hillwood Investment.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Santiago Canyon Bridges Maintenance, Orange County, California. *County of Orange.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the Delineation of Jurisdictional Waters and Biological Habitat Assessment for the Santiago Canyon Bridges Maintenance Project, located in the unincorporated areas of Orange County, California. The project consists of the rehabilitation and maintenance of ten bridges that cross over Santiago Creek, Silverado Creek, and Trabuco Creek. The purpose of the project is to ensure public safety and extend the longevity of each bridge through the rehabilitation of existing pier walls, spalls, and guard railings. Project activities will also include repairing concrete voids and cracks along existing bridge infrastructure and the placement of rip rap to prevent additional scour and erosion that has occurred at many of the bridge locations.

Cajon Creek Logistics Park. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation.

Pardee Tounament Hills SWPPP.*Pardee Homes.* Environmental Planner. Responsible for environmental documentation.

Sundance PA 25 Parkside. *Pardee Homes.* Environmental Planner. Responsible for environmental documentation.

City of Colton Delhi Sands Flower-loving Fly HCP, Colton, California. *City of Colton.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared an HCP for the City of Colton to address impacts to Delhi Sands Flower-loving Fly (DSF) for the West Valley Specific Plan Area which has the largest known DSF populations north of the I-10 Freeway.

Waite Street Reservoir (1467 Pressure Zone), Lake Elsinore, California. *Elsinore Valley Municipal Water District.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided engineering services for design of a 2.5-million-gallon welded steel tank to supply water for Elsinore Valley Municipal Water District's (EVMWD) 1467 pressure zone. Design considerations included the construction of a new tank while maintaining service and capacity to an existing 500,000-gallon tank on site. The District was looking to

maximize space on-site for future reservoir expansion. Due to the topography of the site, the site required a 10-foot-tall retaining wall in order to provide available space for two reservoirs in the future. The latest AWWA D-100 standard was used in determining freeboard height based upon the 134-foot diameter and 24-foot high tank. In addition, Michael Baker used and modified EVMWD's design details for inclusion into the plan set.

RBF-Homecoming Phs 5 BUOW Survey. *Lewis Operating Corporation.* Environmental Planner. Responsible for environmental documentation.

Ogden Reservoir, Muscoy, California. *San Bernardino Municipal Water Department.* Environmental Planner. Responsible for environmental documentation.

Bloomington Phase I.*Related Companies of California, LLC.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

ATP-Wasco Sfty Element Update. *Wasco, City of.* Environmental Planner. Responsible for environmental documentation.

RBF-8-6-13.*Hillwood Investment.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Wasco Safety Element Update. *Wasco, City of.* Environmental Planner. Responsible for environmental documentation.

ATP_Focused Surveys Pac Indust. *Pacific Industrial.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

S.R. 91 Westbound Widening - Final PS&E, Orange County, California. *Orange County Transportation Authority (OCTA).* Environmental Planner. Responsible for environmental documentation. Michael Baker provided plans, specifications, and estimates (PS&E) for the S.R. 91 widening project. The project consisted of 3.8 miles of freeway widening to convert the westbound auxiliary lanes into through mixed flow lanes between Brookhurst Street and Euclid Street, Euclid Street and Harbor Boulevard, and Raymond Avenue and State College Boulevard. The project also added two-lane exit ramps and associated auxiliary lanes at three interchange locations at the westbound exit ramps to Raymond Avenue, Lemon Street, and Brookhurst Street.

Podva Residential Development Environmental Impact Report. *Town of Danville.* Environmental Planner. Responsible for environmental documentation.

Redlands 6120-Biological. *Redlands 6120, LLC.* Environmental Planner. Responsible for environmental documentation.

North Shore Salton Sea. *The Christopoulos Trust.* Environmental Planner. Responsible for environmental documentation.

IW Tennis Gardens Expansion. *Watkins Landmark Construction.* Environmental Planner. Responsible for environmental documentation.

RBF - Muscoy Groin. *Vulcan Materials Company.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Mill Creek Wetlands Permitting, Ontario, California. *Lewis Operating Corporation.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided environmental permitting services for the development of the Mill Creek Wetlands. Michael Baker's services included easement acquisition, preparation of environmental documentation and permit applications, regulatory agency coordination, and stakeholder coordination.

Highland Park IS/MND, Highland, California. *Jurupa Valley, City of.* Environmental Planner. Responsible for writing environmental documentation.

City of Yorba Linda Parks and Recreation Master Plan Update, Yorba Linda, California. *City of Yorba Linda.* Environmental Planner. Responsible for environmental documentation. As part of the City's comprehensive General Plan update, Michael Baker in conjunction with Public Enterprise, is updating the City's Parks and Recreation Master Plan. The Parks and Recreation Master Plan is a strategic document that studies existing parks and recreation programs and provides a framework for the future parks and recreation system in the City. The City's current Master Plan of Parks dates back to 1982. The updated Master Plan will provide direction for enhancement and expansion of Yorba Linda's parks and recreation programs, services and facilities. The updated Master Plan includes a parkland inventory, program inventory, needs assessment, policy recommendations, and implementation strategies.

RBF-SDSU Imperial Valley Owl Survey. *Confidential Client.* Environmental Planner. Responsible for environmental documentation.

E. Palm Canyon Widening. *City of Cathedral City.* Environmental Planner. Responsible for environmental documentation.

Local Hazard Mitigation Plan Update, Duarte, California. *City of Duarte.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the city's local hazard mitigation plan (LHMP) update. Michael Baker's project team facilitated the hazard mitigation planning process, including preparation of the updated document, coordination of hazard mitigation plan team (HMPT) meetings, assistance with plan outreach and public hearings, and processing and coordination with Cal OES and FEMA Region IX as part of the approval process.

Yucaipa Bio Services. *RVA Corporation.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

West Valley Logistics Center, Fontana, California. *Hillwood Investment.* Environmental Planner. Responsible for environmental documentation. Michael Baker was retained by Hillwood Investment Properties to perform a jurisdictional delineation of the West Valley Logistics Center project located in the City of Fontana, County of San Bernardino, California. The applicant proposed to develop seven light industrial buildings on the project site. The project site included nine parcels and one lettered lot of which eight are existing legal parcels. The seven light industrial buildings would total 214.89-acres on the 298-acre project site. Michael Baker conducted a field investigation and determined that the on-site waters and wetlands were isolated. Michael Baker then prepared a jurisdictional delineation and processed a jurisdictional determination through the U.S. Army Corps of Engineers Los Angeles District to confirm the isolated finding. An isolated waters finding would eliminate Corps jurisdiction over the project site. Michael Baker also prepared and processed State applications with the Regional Water Quality Control Board and California Department of Fish & Wildlife for impacts to isolated waters of the state. A Habitat Mitigation and Monitoring Plan was also prepared which addressed permanent impacts to the isolated surface waters located on-site. In addition, Michael Baker prepared a Habitat Assessment which inventoried

various species both present and potentially occurring within the proposed limits. According to previous biological monitoring it was discovered that the California gnatcatcher (Polioptila californica) inhabited the hills surrounding the project site.

Interstate 15 Project Study Report/Project Development Support, San Bernardino County, California. *Parsons Brinckerhoff.* Environmental Planner. Responsible for environmental documentation. Michael Baker is performing engineering, drainage, and water quality services in support of a San Bernardino Associated Governments (SANBAG) feasibility study for the addition of high-occupancy toll (HOT) lanes along I-15 for approximately 33 miles, from the San Bernardino -Riverside County border to S.R. 395. Michael Baker is responsible for Segment 2, from Sierra Avenue through the Devore Canyon, to S.R. 395. The purpose of the project is to prepare a Project Study Report / Project Development Support (PSR/PDS) for the HOT lane facilities. Additionally, the scope includes development of the overall HOT lane facility concept, ingress and egress locations, and facility operations to support the project toll and revenue analysis. Michael Baker is studying two types of HOT lane facilities: concurrent flow and reversible facilities. Michael Baker will develop preliminary engineering and identify HOT lane configurations and ingress-egress geometrics within Segment 2. Michael Baker will prepare estimates of the capital costs to support the financial feasibility study and support the preparation of the PSR/PDS report.

Garnet Street Bridge Replacement Three Year On-Call, Mentone, California. *County of San Bernardino.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits. Michael Baker managed the preparation of wetland delineation, permitting, and compliance from environmental documents previously prepared for conformity in support a joint Initial study/categorical exclusion (IS/CE) for the Grant Street Bridge Replacement project. The County of San Bernardino intended to replace the bridge with a new state-of-the-art bridge to accommodate existing traffic volumes. The width of the old bridge was approximately 17-feet 10-inches-wide (rail-to-rail), including an approximately 16-foot 10-inch travel way. The bridge was 159-feet-long with two abutments and one center pier. The new bridge is approximately 52-feet-wide and includes the abutments and piers, with a wider travel way to accommodate modern vehicles that are wider than older models. All existing pipelines and utilities were relocated as necessary.

Adaptive Management Plan. *Inland Empire Utilities Agency.* Environmental Planner. Responsible for performing GIS data analysis and producing GIS maps and graphic exhibits.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Environmental Planner. Responsible for environmental documentation. Michael Baker has been supporting San Bernardino Valley Water Conservation District with the development and implementation strategy for the Upper Santa Ana Wash Plan and Habitat Conservation Plan (HCP), including Plunge Creek, for four years. Initial efforts involved assessing the quality and quantity of flood plain habitat associated with the Santa Ana River in the foothills of the San Bernardino Mountains. The overall project site is approximately 4,400 acres with conservation occurring in approximately 1,900 acres. Michael Baker is transitioning into preparing the environmental impact statement (EIS) for the project and is continuing to support the ongoing preparation of the HCP. It is estimated that two more years will be needed to complete the project.

Deep Creek Homes Property, Hesperia, California. *County of San Bernardino.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared the Delineation of Jurisdictional Waters to determine the jurisdictional authority of the U.S. Army Corps of Engineers (USACE), the Lahontan Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) within the boundaries of the Deep Creek Homes Property, located east of Hesperia, in unincorporated San Bernardino County.

Interstate 5 / Jamboree Road Interchange Improvement, Irvine, California. *City of Irvine.* Environmental Planner. Responsible for environmental documentation. Michael Baker prepared a Permit Engineering Evaluation Report (PEER) for the I-405/Jamboree Road Interchange southbound exit ramp widening. The intersection experiences congestion from the high volume of vehicles on Jamboree Road and turning volumes at the southbound I-405 ramp intersection. The proposed improvements include left-turn lane and retaining wall construction, overhead sign structure reconstruction, traffic signal modification, minor drainage improvements, and utility coordination. Michael Baker prepared new aerial topographic mapping, a traffic analysis, preliminary improvement plans, cost estimates, and environmental technical studies in support of a CEQA Categorical Exemption.

I-10/Jefferson Street Int. *County of Riverside.* Environmental Planner. Responsible for environmental documentation.

Grand Avenue at S.R. 57/S.R. 60 Interchange, Diamond Bar, California. *PBS&J.* Environmental Planner. Responsible for environmental documentation. Michael Baker provided environmental support for the S.R. 57/S.R. 60 confluence at Grand Avenue in Los Angeles County, within the Cities of Industry and Diamond Bar. The interchange is located approximately at the midpoint of the two-mile common alignment of the S.R. 57/S.R. 60. Michael Baker assisted in managing the preparation of technical studies anticipated to support a joint environmental impact report/environmental assessment (EIR/EA).

Additional Michael Baker Project Experience

Upper Mojave River Groundwater Regional Recharge and Recovery Project (R3) EA. *Mojave Water Agency.* Environmental Planner. Responsibilities included: Acquiring $13.4 million in Title XVI funding through the preparation of an approved Feasibility Study for the Bureau of Reclamation; preparation of sections of the EA; coordination with the Bureau of Reclamation; combining the R3 EA and Oro Grande EA into a single document; and producing GIS maps and graphic exhibits. Michael Baker prepared the environmental documentation in compliance with NEPA for facility improvements necessary to increase MWA's use of its SWP allotment up to 40,000-acre-feet per year. The project consisted of construction of recharge basins, 15 miles of pipeline, pumps, a reservoir, 22 wells and six turnouts.

Eagle Canyon Dam and Debris Basin EA/EIR. *Riverside County Flood Control and Water Conservation District.* Environmental Planner. Michael Baker prepared the environmental documentation in compliance with NEPA and CEQA for the construction, operation and maintenance of a dam, debris basin and underground storm drain located in the cities of Cathedral City and Palm Springs, and in the Agua Caliente Band of Cahuilla Indians land. Mr. Pohlman performed the following project tasks: Prepared various EIR/EA sections; including *Environmental Justice* and the *PublicServices and Utilities,* provided research for Socioeconomics and Environmental Quality section, and produced GIS maps and graphic exhibits.

Riverside North Aquifer Storage and Recovery Project EIR. *Riverside Public Utilities Department.* Environmental Planner. Michael Baker prepared the EIR as well as conceptual engineering support for proposed regional recharge basins required for capturing and recharging storm water and imported water on and near Riverside's Flume Well Tract property located in the City of Colton. The project, originally conceived by SAWPA nearly 20 years ago, is an important regional water supply project to capture excess surface water flows along the Santa Ana River. Mr. Pohlman performed the following project tasks: prepared the CEQA Initial Study, prepared environmental sections of the EIR, performed GIS data analysis, and prepared GIS maps and graphic exhibits.

Deep Creek EIR, Apple Valley, California. Environmental Planner. The Deep Creek Project would allow the development of 202 residential lots on approximately 249-acres in the unincorporated area of the County of San

Bernardino. Michael Baker was hired by the County of San Bernardino to prepare a court ordered EIR after the Deep Creek Agricultural Association challenged the County of San Bernardino for not adequately studying the projects impacts. The Court of Appeal of the State of California, Fourth Appellate District determined that the EIR must assess impacts to biological resources and traffic. Mr. Pohlman performed the following project tasks: prepared Biological Resources section, and produced GIS maps and graphic exhibits.

Hacienda at Fairview Valley EIR, Fairview Valley, California. Environmental Planner. Michael Baker prepared an EIR for the Hacienda at Fairview Valley project, located in unincorporated San Bernardino County, near Apple Valley. The 1,557-acre site is located between the Granite and Fairview Mountain ranges. The project site is surrounded by vacant land and several larger lot single-family residences. In addition, portions of the project site abut BLM land. The project includes the development of 3,114 residential units, 15-acres of neighborhood commercial uses and a public safety complex, and 336-acres of open space. The majority of the residential units would be deed-restricted active adults units. Major environmental issues include aesthetics, biological resources, seismicity, traffic, public services, public utilities, and emergency access. Mr. Pohlman performed the following project tasks: prepared environmental sections of the EIR and produced GIS maps and graphic exhibits.

Soil Safe Project EIR, Colton, California. Environmental Planner. Michael Baker prepared a programmatic EIR for the reclamation of approximately 29-acres of land currently located within the Santa Ana River floodplain. To achieve this, the project proposes mixing approximately 500,000 cubic yards of imported fill with Portland cement and placing this fill within the subject properties until the desired grade is achieved. Mr. Pohlman performed the following project tasks: performed GIS data analysis and prepared GIS maps and graphic exhibits.

Southwest Industrial Park Specific Plan Amendment and EIR, Fontana, California. Environmental Planner. Michael Baker is currently managing the update to the existing Southwest Industrial Park Specific Plan in the City of Fontana. The current Plan is composed of four project areas totaling approximately 1,863-acres within the southern portion of the City. As proposed, the updated Specific Plan would expand to approximately 3,200-acres, encompassing a mixture of residential, commercial, and industrial uses recently annexed by the City. As part of this work effort Michael Baker/ UDS is preparing an updated set of Design Guidelines as part of this Specific Plan. Mr. Pohlman performed the following project tasks: performed GIS data analysis and produced GIS maps and graphic exhibits. 2009

South Adelanto Annexation EIR, Adelanto, California. *City of Adelanto.* Environmental Planner. Michael Baker is currently preparing a programmatic EIR for the South Adelanto Annexation area. The project is generally located from Cactus Road south to the City's jurisdictional boundaries and from Jonathan Street west to Lessing Avenue. The proposed annexation involves the rezoning of approximately 2,823-acres of and within the County of San Bernardino. Based on the City's proposed zoning, approximately 9,000 homes and over 300-acres of industrial and commercial development would be allowed in the Adelanto General Plan. Mr. Pohlman performed the following project tasks: produced GIS maps and graphic exhibits.

Santa Ana Regional Interceptor (SARI) Pipeline Joint Repairs - Reach IV-B, Riverside County, California. *Santa Ana Watershed Project Authority (SAWPA).* Consultant. Michael Baker prepared environmental documents and managing technical studies for SAWPA that addressed impacts associated with the joint repairs of approximately 5 miles of unlined reinforced concrete pipe upstream of the Prado Dam. The project required coordination from the U.S. Army Corps of Engineers (USACE) as the USACE will issue subsequent permits for the project. The USACE also has jurisdiction over the adjacent Prado Dam. Mr. Pohlman performed the following project tasks: prepared Section 401 Water Quality Certification, and prepared Section 1600 DFG Streambed Alteration Agreement, and prepared USACE Section 404 Permit.

Non-Michael Baker Project Experience

One Water One Watershed: Santa Ana Integrated Watershed Plan, An Integrated Regional Water Management Plan. *Santa Ana Watershed Project Authority.* SAWPA Consultant. Conducted research for IRWMP; including the *Environmental Enhancement and Habitat* and *Parks, Recreation and Open Space* chapters, contributed to the writing and review of multiple chapters; prepared GIS maps, graphic exhibits, and the cover for the IRWMP; designed layout for IRWMP; produced an electronic version of the draft report for distribution. The Santa Ana Watershed Project Authority is a Joint Powers Authority focusing on water supply and water quality. The goal of this Integrated Regional Water Management Plan was to produce a far more comprehensive plan than could be developed by a single agency. Participants from numerous agencies and organizations addressed every aspect of water management planning, integrating water supply with environmental needs, and included the environmental justice and disadvantaged communities in the integrated water solutions. The vision of the OWOW Plan is a sustainable Watershed that is drought proofed, salt-balanced, and supports economic and environmental viability. 2009

2008 Annual Report of Santa Ana River Water Quality. *Santa Ana Watershed Project Authority.* SAWPA Consultant. Conducted GIS and data analysis, and contributed to writing and review of the report. The Santa Ana Watershed Project Authority is a Joint Powers Authority focusing on water supply and water quality. This report contained water quality data required to implement the surface water monitoring program necessary to determine compliance with the nitrogen and TDS objectives of the SAR and the effectiveness of the wasteload allocations. 2008

Publications

Evaluation of the Biocriteria of Streams in the San Diego Hydrologic Region, ASCE: Journal of Environmental Engineering, Volume 136, Issue 6 (June 2010)

A Study of the effect on physical and chemical stressors on biological integrity within the San Diego hydrologic region. *Environmental Monitoring and Assessment (2012)*

Computer Skills

3D Studio Max
Adobe Acrobat Professional
Adobe Dreamweaver
Adobe Illustrator
Adobe Photoshop
ArcGIS
ArcGIS 10.1
AutoCAD Civil 3D
Esri ArcMap
Global Mapper
Microsoft Excel
Microsoft Word

Professional Affiliations

Association of Environmental Professionals (AEP), Member

Ryan S. Winkleman, C.E.

Biologist

Years with Michael Baker: 2
Years with Other Firms: 9

Degrees

Certificate, 2012, Field Ornithology, University of California at Riverside, University Ext

B.S., 2007, Ecology and Evolution, University of California at Irvine

Licenses/Certifications

Certified Ecologist, 2014

USFWS California Red-legged Frog Recovery Permit, California, 2013

CDFW Scientific Collecting Permit, California, 2013

General Qualifications

Mr. Winkleman, a wildlife biologist, has many years of experience in field and laboratory research, environmental data acquisition, construction monitoring, and regulatory compliance. His specific areas of expertise are in herpetological and ornithological ecology and identification. He has conducted field surveys and research for a wide range of transmission, solar, aqueduct, and housing projects, as well as for scientific research, to identify and inventory native species, including conducting protocol surveys for several listed species. He is experienced in conducting resource impact assessments under California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) provisions. He has prepared various sections for CEQA and NEPA environmental documents, including environmental impact statements and environmental impact reports, biological technical reports, biological assessments, biological evaluations, biological monitoring reports, and biological survey reports.

Experience

Art Gaitan's Mexico Cafe. *City of Temecula.* Biologist. Responsible for a field survey and for writing a biological report, including a Western Riverside County MSHCP Consistency Analysis.

ATP-Related-9.21.15. *Related Companies of California, LLC.* Biologist. Responsible for a field survey and for writing a biological report.

Bio Report for TT Map 18583. *Highland Fifth-Orange Partners, LLC.* Biologist. Responsible for writing a Biological Assessment pursuant to Section 7 Consultation.

Camino Sierra Road Pressure Zone Conversion, Temecula, California. *Rancho California Water District.* Biologist. Responsible for conducting a field survey and writing the biological habitat assessment report. Michael Baker provided design services for the Camino Sierra Road Pressure Zone Conversion project. The project consisted of approximately 6,400 linear feet of eight and 12-inch diameter pipeline connected to a higher pressure zone system in order to convert approximately 24 customers to a higher pressure zone.

Carbon Canyon Monitoring. *Orange County Sanitation District.* Biologist. Responsible for conducting a biological survey and writing a habitat assessment. The assessment included the potential for sensitive species to occur on-site and provided recommendations for minimizing environmental impacts during construction.

Clean Water Factory Environmental Impact Statement and Environmental Impact Report, San Bernardino, California. *City of San Bernardino.* Biologist. Biologist responsible for conducting multiple general field surveys, writing the biological habitat assessment report, writing the adaptive management plan, and leading mapping and surveying efforts for downstream impacts in the Santa Ana River. Michael Baker is preparing and processing a joint environmental impact statement and environmental impact report for the Clean Water Factory, a treated

wastewater diversion facility. Key issues include potential impacts to endangered species, impacts on groundwater quality, and potential construction-related impacts associated with the construction of the pipeline conveyance system.

Coronation Tentative Tract No. 32386, Corona, California. *RCFC Investments, LLC.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment and Western Riverside County MSHCP consistency analysis based on survey results. Michael Baker conducted a habitat assessment, delineation of state and federal jurisdictional waters, and CEQA documentation for the Coronation Tentative Tract No. 32386, which proposes to subdivide 75 acres into 52 single family residential lots under the designation of the Mountain Gate Specific Plan. The project will also include the construction of local residential streets and the preservation of natural open space. Michael Baker prepared application packages for the U.S. Army Corps of Engineers (USACE) Section 404 Nationwide Permit, Regional Water Quality Control Board (Regional Board) Water Quality Certification, and California Department of Fish and Wildlife (CDFW) Section 1602 Streambed Alteration Agreement.

Country Club Village, Calimesa, California. *Country Club Village Management, LLC.* Biologist. Responsible for conducting a field survey and writing a biological habitat assessment report. Michael Baker provided civil design and environmental planning services for the 30-acre mixed-use Country Club Village project. Located north of Champions Drive and west of Desert Lawn Drive, the proposed project consists of senior housing units, a living/wellness center, a hotel, medical offices, retail space, and restaurants. Michael Baker's scope included a traffic study, tentative mapping, storm drain water quality management plans, preliminary infrastructure plans, and environmental technical studies in support of the city's initial environmental study.

Cucamonga Crosswalls HA. *The Altum Group.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

Deer Canyon Estates Tentative Tract No. 16440, Anaheim, California. *Stonegate Anaheim I, LLC.* Biologist. Responsible for conducting protocol surveys for the state and federal endangered least Bell's vireo (*Vireo bellii pusillus*). Michael Baker provided regulatory and environmental services for the Deer Canyon Estates Tentative Tract No. 16440. Michael Baker conducted new site visits and prepared a Habitat Assessment and Delineation of Jurisdictional Waters. The project was ruled not likely to affect sensitive species or adversely modify critical habitat. The delineation identified the U.S. Army Corps of Engineers (USACE), Santa Ana Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife's (CDFW) jurisdictional authority within the project site with six unnamed drainages and one wetland. Michael Baker concurrently applied for the Section 404 Nationwide Permit (USACE), Section 401 Water Quality Certification (Regional Board) and the 1602 Streambed Alteration Agreement (CDFW) on behalf of the applicant.

Full-Scale Desalination Facility - Feasibility Study, Los Angeles County, California. *West Basin Municipal Water District.* Biologist. Responsible for writing a biological report. Michael Baker provided engineering, environmental, and regulatory permitting expertise related to the client's overall desalination program, including full-scale desalination plant feasibility and siting studies. Work efforts included regulatory permitting and site constraints assessments for an El Segundo site (co-located with NRG's El Segundo Generating Station), conceptual studies for additional alternative sites, and technical support on lease negotiations with potential site owners.

Enroachment Enforcement Prog. *City of Chino Hills.* Biologist. Responsible for conducting a field assessment of nearly 200 properties that had encroached upon property owned by the City of Chino Hills. Encroachments were analyzed against significant biological impacts and the results were provided to the City in a report describing potential biological impacts related to the encroachment properties.

Ervin "Magic" Johnson Recreation Master Plan, Los Angeles, California. *LA County Parks & Recreation.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment report of the survey results. The Earvin "Magic" Johnson Recreation Master Plan (EMJ) is approximately a 120-acre recreation area located within a disadvantaged urban community known as South Central-Willowbrook area where the community consists of 58% Hispanic or Latino and 35% African-American residents. The Project is a community-based and needs-based preliminary design of a state-of-the-art recreational facility in the EMJ Recreation Area. Given the project location consisting of minority and underserved residents, the project required developing and implementing an Outreach Strategic Plan that would consist of stakeholder meetings, special interest/ small group interviews, (3) community workshops and a final County Public Hearing. Michael Baker was contracted to provide development of a conceptual design alternatives plan for recreation facilities such as a bicycle and pedestrian trails, exercise stations, children play areas, picnic areas, and other public use areas. Michael Baker will prepare baseline conditions data such as mapping, demographic trends for parks & recreation needs, traffic study, title search material, CEQA (including Air/GHG/Noise, Jurisdictional Delineation, Biology, and Cultural Resources), and a regulatory compliance strategy & permit plan. Michael Baker will be apply County codes and be familiar with the necessary restrictions and processes to prepare the Final Recreation Master Plan and phasing plan.

ID/IQ Planning and Civil Engineering for Civil Works Projects, W912PL-10-R-0033, USACE, Los Angeles District, California. *U.S. Army Corps of Engineers, Los Angeles District.* Biologist. Responsible for a field survey and for writing a biological report.

Jeffrey/I-5 Bicycle and Pedestrian Bridge and Jeffrey Open Space Trail (JOST) Project, Irvine, California. *City of Irvine.* Biologist. Responsible for a field survey and for writing a biological report, including an Orange County Coastal Subsection NCCP/HCP Consistency Analysis. Michael Baker provided a project study report/project development support (PSR/PDS) for improvements that included a Class I bicycle trail and rest area. Concurrently, Michael Baker prepared a project report (PR) for a proposed bicycle/pedestrian crossing of the Jeffrey Open Space Trail over Interstate 5.

Kirkwood Ranch Tentative Tract, Beaumont, California. *MDM Investment Group.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results, including a consistency analysis of the project against the Western Riverside County Multiple Species Habitat Conservation Plan. Michael Baker delineated the project site for The Kirkwood Ranch Tentative Tract Map No. 27357. The site was approved for an initial phase of 71 lots to be situated with views over three drainage courses toward the San Gorgonio Mountains to the north and the Badlands and Mount San Jacinto to the south. Michael Baker documented the jurisdictional authority of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW); completed a thorough habitat; and submitted applications for a USACE Section 404 Nationwide Permit, Regional Board Section 401 Water Quality Certification, and CDFW Section 1602 Streambed Alteration Agreement.

La Pata Bird Surveys. *County of Orange.* Biologist. Responsible for conducting nesting bird clearance surveys in advance of construction-related mechanical disturbance.

La Pata Mit Year 1. *County of Orange.* Biologist. Responsible for weekly pre-construction nesting bird clearance surveys.

Little Corona Beach Infiltration Project - Engineering and Environmental Services, Newport Beach, California. *City of Newport Beach.* Biologist. Responsible for a field survey and for writing a biological report, including an Orange County Coastal Subsection NCCP/HCP Consistency Analysis. Michael Baker provided planning,

design, and permitting for the construction of a surface water runoff diversion and infiltration system on Little Corona Beach. The project will include the construction of a surface water diversion and subsurface infiltration system to capture the flows at the canyon mouth above the beach, convey the water to a pre-treatment facility, and infiltrate the water through a subsurface gallery under the beach. The diversion system at the canyon mouth will include an innovative design to trap and flush sediment transported by Buck Gully to avoid clogging and increased maintenance of the infiltration system. Michael Baker provided services for final engineering and design, California Environmental Quality Act (CEQA) compliance, and regulatory permitting.

Lytle Creek Levee Repair. *CEMEX.* Biologist. Responsible for construction monitoring in habitat with Santa Ana River Woollystar. Michael Baker is providing biological and regulatory support for repairing a levee in Lytle Creek that was damaged by flood water. Specific efforts include conducting a habitat assessment, focused surveys for SBKR and sensitive plants, a jurisdictional delineation, and the preparation and processing of Wetland Permits and endangered species Individual Take Permits.

McFarland GPA EIR. *City of McFarland.* Biologist. Responsible for writing a programmatic habitat assessment to inform the client of what issues could come up in the future. Michael Baker International prepared a traffic impact study to analyze forecast traffic conditions associated with the proposed McFarland General Plan Amendment. The City of McFarland is located within the Central Valley, approximately 20 miles north of Bakersfield, within the northeastern portion of Kern County. The City proposes a General Plan Amendment (GPA) to amend the Land Use Element to add two new land use designations, establish new policies and objectives associated with the new land use designations and other development within the planning area, and amend the Land Use Map to assign land uses to specific areas within the sphere of influence and change existing land use designations for several properties within the City boundaries. The "proposed project" evaluated herein refers to buildout of the proposed Land Use Map and baseline Circulation Element for the study area.

North Basin Recharge Project EIR, Riverside, California. *City of Riverside.* Biologist. Responsible for writing a habitat assessment and revising an Environmental Impact Report section for Biological Resources. Michael Baker is preparing the EIR for the Riverside Public Utilities Santa Ana River inflatable dam construction and diversion project. The project includes analysis of off-stream recharge basins and an in-stream inflatable dam that would capture 75 acre feet of water and divert 200 cfs of storm flows from the river to the recharge basins. In addition to Army Core of Engineers (ACOE) jurisdiction over the Santa Ana River embankment modifications, the project requires extensive coordination/compliance with regulatory agencies due to downstream and surrounding sensitive habitat.

NTP Marina Del Rey Waterline. *Los Angeles County, Department of Public Works.* Biologist. Responsible for conducting a nesting bird clearance survey and writing the survey report.

NTP_Morongo Creek Channel Dsgn. *Messenger Investment Company.* Biologist. Responsible for a field survey and for writing a biological report, including a Coachella Valley MSHCP Consistency Analysis.

OC-44 Pipeline Rehabilitation/Replacement Project, Orange County, California. *Mesa Water District.* Biologist. Responsible for conducting protocol surveys for the state and federal endangered least Bell's vireo (*Vireo bellii pusillus*). Also conducted a field survey of the project site and wrote a biological habitat assessment of the survey results. Mesa Water District recently selected Michael Baker to complete a Rehabilitation/Replacement Evaluation and Cathodic Protection Study for the OC-44 Pipeline. The OC-44 pipeline runs approximately 8.6 miles through Orange County. Michael Baker will provide a comprehensive plan to investigate the condition of the existing pipeline, evaluate repair and/or replacement strategies, and identify

permitting and follow-on technical studies required to implement the recommended strategy. The contract value for the study is nearly $200,000, and work is underway to meet the requested May delivery date.

Orange County On-Call Regulatory Services, Orange County, California. *County of Orange.* Biologist. Responsible for providing biological support on various projects. Under multi-year agreements since 2003, Michael Baker has been providing environmental, regulatory, and ecosystem restoration services for a variety of projects. Generally the projects have included channel, roadway, and regional park improvements. Michael Baker's work efforts have included detailed jurisdictional delineations, resource agency coordination and negotiation, creative problem solving with project design, California Environmental Quality Act (CEQA) compliance, biological and cultural assessments, application submittals to state and federal resource agencies, and permit acquisition.

Park Place Extension EIR/EA, El Segundo, California. *City of El Segundo.* Biologist. Responsible for conducting a field survey and writing a Caltrans Natural Environment Study documenting the survey results. Michael Baker prepared the required National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) clearance documentation for the Park Place Extension and Railroad Grade Separation Project. The project involves extending Park Place between Allied Way and Nash Street and grade separating the extension from the Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe (BNSF) Railway tracks. The environmental analysis thoroughly discussed the existing conditions for each environmental issue area and evaluated the short- and long-term environmental impacts associated with project construction and operation (both individual and cumulative). Key issues associated with the project included hazardous materials, air quality, noise, land use/right of way impacts, and traffic and circulation.

Pilgrim Creek Rehabilitation, Oceanside, California. *City of Oceanside.* Biologist. Responsible for conducting a biological survey and writing a habitat assessment and MHCP consistency analysis. The analysis incorporated information pertaining to the California Environmental Quality Act, on-site streams, vegetation, wildlife, and assessed the potential for sensitive biological resources to be on-site. Michael Baker provided planning, preliminary engineering, design, and permitting services for the Pilgrim Creek Vector Habitat Remediation Project. The current conditions of Pilgrim Creek brought human population in close contact with mosquito breeding habitat, thus increasing the risk of vector borne diseases. The solution included removal of low water crossings, clogged culverts, gradual slopes, reed monocultures, and exotic species and construction of an open water system with sleep slopes, bridge crossings, and native riparian species. By restoring the creek to proper flood conveyance, vector habitat is eliminated. Michael Baker prepared a comprehensive topographic survey and hydraulic studies for a design feasibility study, along with an initial study/environmental checklist to support the California Environmental Quality (CEQA) clearance process.

RBF-CCSD-09-215-15, Cambria, San Luis Obispo County, California. *Cambria Community Services District.* Biologist. Responsible for writing a Biological Resources Technical Report. This project was under a significant time constraint in order to construct and begin operating a new emergency water facility at the San Simeon well field. The new water facilities provided an emergency water supply to citizens and businesses within the unincorporated community of Cambria, San Luis Obispo County, California.

RBF-D13-008. *County of Orange.* Biologist. Responsible for conducting a nesting bird clearance survey.

RBF-SACC Golf Course. *Santa Ana Country Club.* Biologist. Responsible for providing nesting bird clearance surveys in advance of tree removal.

RBF-Temecula-10.2015. *City of Temecula.* Biologist. Responsible for a field survey and for writing a biological report, including a Western Riverside County MSHCP Consistency Analysis.

RBF-Town of Apple Valley. *Director of Projects.* Biologist. Responsible for a field survey and for writing a biological report.

Ridge One Addendum EIR. *City of Fontana.* Biologist. Responsible for peer reviewing an existing biological report from a different firm.

Salt Creek Trail Bio. *POWER Engineers, Inc.* Biologist. Responsible for peer reviewing biological and jurisdictional reports written by another company.

Sky Park at Santa's Village. *Sky Park at Santa's Village.* Biologist. Responsible for assisting with researching sensitive species that could occur on the project site.

SMWD Tesoro Res & Piplns. *Santa Margarita Water District.* Biologist. Responsible for writing a biological resources construction plan for a construction project on Rancho Mission Viejo.

Sun City Tentative Tract Map No. 31456, Sun City, California. *Stonegate Development Co., LLC.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment and Western Riverside County MSHCP consistency analysis based on survey results. Michael Baker prepared a literature review, delineation of jurisdictional waters, and biological habitat assessment and acquired resource agency permits from the U.S. Army Corp of Engineers Section 404 Nationwide Permit and California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement for the Sun City Tentative Tract Map No. 31456. Michael Baker also coordinated the project mitigation, through the appropriate in-lieu fee program.

The Brookside. *Alpine Pointe Development, Inc.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

Upper SAR Wash Plan EIS. *San Bernardino Valley Water Conservation District.* Biologist. Responsible for compiling numerous biological reports into one cohesive document, as well as incorporating information from an existing HCP.

VA Cemetery - Phoenix. *HDR Engineering, Inc.* Biologist. Responsible for a field survey and for writing a biological report.

Valley Crest and Yucca Reservoirs, Apple Valley, California. *Golden State Water Company.* Biologist. Responsible for construction monitoring in occupied desert tortoise habitat. Michael Baker conducted a habitat assessment for the Valley Crest and Yucca Reservoirs Project, located in the Town of Apple Valley, San Bernardino County, California. In order to meet increases in demand and improve service to surrounding residents, Golden State Water Company (GSWC) is proposing to construct two 500,000 gallon above ground reservoir tanks and associated underground pipelines in order to connect both reservoirs to existing infrastructure.

Valley Crest Reservoir. *Golden State Water Company.* Biologist. Responsible for construction monitoring in occupied desert tortoise habitat.

San Jacinto CLS Survey. *Riverside County Flood Control Water Conservation.* Biologist. Responsible for conducting a nesting bird clearance survey.

Pac Industrial CLX Surveys. *Pacific Industrial.* Biologist. Responsible for conducting a survey to monitor the status of previously-recorded active bird nests.

Barren Bridge CRLF Survey. *POWER Engineers, Inc.* Biologist. Responsible for conducting protocol California red-legged frog (*Rana draytonii*) surveys within one mile of a proposed transmission line project.

Slover Ave. H.A-Boruchin. *Law Office of Kevin F. Gillespie, A Professional C.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

H.A. SWIP-Fontana. *CRP Oakmont Poplar, LLC HA.* Biologist. Responsible for conducting a field survey and writing a biological habitat assessment report.

Caspers Park Surveys. *County of Orange.* Biologist. Responsible for conducting a preconstruction nesting bird clearance survey.

Talbert Post Fire Surveys. *County of Orange.* Biologist. Responsible for conducting a biological field survey.

Pier 1 MBTA CLX Survey. *Sares-Regis Group.* Biologist. Responsible for providing burrowing owl (*Athene cunicularia*) clearance surveys and a survey report.

Santa Barbara Fresh Water Pond. *Lewis Operating Corporation.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment of the survey results.

Waterman Logistics H.A. *Hillwood Investment.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

BUOW CLX_Redlands 37.*Hillwood Investment.* Biologist. Responsible for conducting two preconstruction burrowing owl (*Athene cunicularia*) clearance surveys.

Carmel Mountain Golf Course-HA. *Lewis Operating Corporation.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results, including a consistency analysis of the project with the San Diego County Multiple Species Conservation Program.

Jurupa Valley HA DSF.*KR Land Company.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results.

Carbon Canyon Lake. *County of Orange.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment of the survey results.

El Cajon H.A-Boruchin. *Law Office of Kevin F. Gillespie, A Professional C.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

Peer Review-Jurupa Facility. *City of Fontana.* Biologist. Responsible for conducting a field survey of the project site and then providing a third-party review of an existing biological habitat assessment.

Sierra Ave. H.A-Boruchin. *Law Office of Kevin F. Gillespie, A Professional C.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

HA & DSF-Bloomington. *Thrifty Oil Company.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

Freeway Trail Lighting Project. *City of Irvine.* Biologist. Responsible for conducting a biological survey and writing a Caltrans Natural Environmental Study (NES). The NES analyzed the on-site habitat and potential for sensitive species to occur and provided recommendations to minimize environmental impacts during construction.

Peters Canyon Trail Lighting. *City of Irvine.* Biologist. Responsible for conducting a biological survey and writing a Caltrans Natural Environmental Study (NES). The NES analyzed the on-site habitat and potential for sensitive species to occur and provided recommendations to minimize environmental impacts during construction.

West Valley Logistics Center, Fontana, California. *Hillwood Investment.* Biologist. Responsible for writing a Habitat Mitigation and Monitoring Plan (HMMP). The HMMP recommended various measures to restore and preserve a large adjacent area of Riversidean sage scrub, construct a small wildlife corridor for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), and provide for a long-term monitoring program. Michael Baker was retained by Hillwood Investment Properties to perform a jurisdictional delineation of the West Valley Logistics Center project located in the City of Fontana, County of San Bernardino, California. The applicant proposed to develop seven light industrial buildings on the project site. The project site included nine parcels and one lettered lot of which eight are existing legal parcels. The seven light industrial buildings would total 214.89-acres on the 298-acre project site. Michael Baker conducted a field investigation and determined that the on-site waters and wetlands were isolated. Michael Baker then prepared a jurisdictional delineation and processed a jurisdictional determination through the U.S. Army Corps of Engineers Los Angeles District to confirm the isolated finding. An isolated waters finding would eliminate Corps jurisdiction over the project site. Michael Baker also prepared and processed State applications with the Regional Water Quality Control Board and California Department of Fish & Wildlife for impacts to isolated waters of the state. A Habitat Mitigation and Monitoring Plan was also prepared which addressed permanent impacts to the isolated surface waters located on-site. In addition, Michael Baker prepared a Habitat Assessment which inventoried various species both present and potentially occurring within the proposed limits. According to previous biological monitoring it was discovered that the California gnatcatcher (Polioptila californica) inhabited the hills surrounding the project site.

MA 14128 HA MSHCP.*Specialty Flooring.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment of the survey results.

RBF-PSA 2-26-15.*SLPR, LLC.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results, including a consistency analysis of the project against the Western Riverside County Multiple Species Habitat Conservation Plan.

L.A. B&H Berm Monitoring. *Los Angeles County, Department of Public Works.* Biologist. Responsible for providing construction compliance monitoring to protect the federally threatened species western snowy plover (*Charadrius nivosus nivosus*).

San Simeon Well Field Emergency Water Supply Facilities, Cambria, California. *Cambria Community Services District.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results. Conducted focused mark-recapture surveys for the federally threatened species California red-legged frog (*Rana draytonii*). Also wrote a Biological Assessment, Adaptive Management Plan, and Biological Technical Report for the project. Michael Baker provided environmental services for the construction and operation of emergency water facilities at the San Simeon well field. Michael Baker's services included an initial study and mitigated negative declaration, preparation of a coastal development permit application, and federal and state agency consultation.

Borrego Canyon Restoration. *County of Orange.* Biologist. Responsible for conducting protocol surveys for the state and federal endangered least Bell's vireo (*Vireo bellii pusillus*).

RBF-NTP 3-20-15 Victorville. *Southwest Gas Corporation.* Biologist. Responsible for a field survey and for writing a biological report.

Fontana Tire Shop HA T05. *City of Fontana.* Biologist. Responsible for conducting a field survey and overseeing the development of the written habitat assessment report.

Wheeler Canyon Road Bridge Improvements, Santa Paula, California. *County of Ventura.* Biologist. Responsible for conducting a biological survey. Michael Baker provided a bridge condition analysis, advanced planning study (APS) report, and supporting HBP funding documents to assess the existing Wheeler Canyon Road Bridge and developed plans, specifications, and estimates (PS&E) for repairs. The 30-foot-long bridge (County Bridge No. 109) was constructed in 1937 is a concrete T-beam superstructure cast monolithically with the abutments and concrete channel lining protecting abutment footings. Bridge maintenance reports indicated cracking in the existing concrete structure and heavy scouring of the channel at the abutment wingwalls.

RBF-PSA 8-3-15. *Stantec Consulting Inc.* Biologist. Responsible for field surveys and mapping and subsequent biological report supporting an update of the City of Fontana's General Plan Conservation Element.

I-5/La Novia Interchange. *City of San Juan Capistrano.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results.

Lizards Trail. *County of Orange.* Biologist. Responsible for conducting a field survey and writing a biological habitat assessment report.

Gilbert St Improvements. *County of Orange.* Biologist. Responsible for conducting a nesting bird clearance survey.

Hickory Creek Habitat Mitigation, Chino Hills, California. *City of Chino Hills.* Biologist. Responsible for conducting focused western pond turtle surveys. Michael Baker provided planning, engineering, and landscape architecture services for the restoration of Hickory Creek. The project included approximately 0.5 miles of stream length and provided habitat restoration of over two acres. Michael Baker completed detailed hydrologic, hydraulic, and sediment transport analyses for the watershed and stream reach. Michael Baker also prepared a biological; developed preliminary designs and graphics; completed final, grading, landscape planting, and irrigation plans; provided review for environment compliance and permit approvals; and provided services during the bid and award phase of the project.

Rancho Del Oro Detention Basin Flood Control Improvement Project, Oceanside, California. *City of Oceanside.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results, including a consistency analysis of the project with the San Diego North County Multiple Habitat Conservation Program. Michael Baker delineated the project site and prepared a biological technical report for the Rancho Del Oro Detention Basin Flood Control Improvement Project, which created two detention basins to help detail the 100-year storm flow and increase the flood protection to downstream development, public roads, and rail facilities. The biological technical report provided the results from a habitat assessment that documented all plant and wildlife species and habitats occurring on the project site and addressed multiple habitat conservation plans and the Oceanside Subarea Habitat Conservation Plan requirements. Michael

Baker also prepared biological focus surveys for the southwestern willow fly catcher, least Bell's vireo, and coastal California gnat catcher.

Calexico Gran Plaza CEQA Mitigation and Regulatory Services, Calexico, California. *The Charles Company.* Biologist. Responsible for conducting a burrowing owl (*Athene cunicularia*) clearance and mapping survey. Michael Baker was responsible for a multi-disciplinary team to implement CEQA mitigation measures and regulatory agency permit conditions associated with the construction of a proposed commercial development adjacent to the U.S./Mexico International Border in Calexico. Key services included: pre-construction nesting bird surveys identifying active nests of the sensitive western burrowing owl (BUOW); jurisdictional delineation in the area of an existing bridge crossing of 2nd Street over the New River adjacent to the east of the project to determine impacts and mitigation for proposed bridge widening; monitoring of biological, cultural, and paleontological resources during project construction; preparation of a Passive Relocation and Monitoring Plan for project impacts to the Burrowing Owl (BUOW) and coordination with the California Department of Fish and Wildlife (CDFW) to obtain plan approval; installation of artificial burrows as mitigation for project impacts to BUOW; passive relocation of the affected owls prior to site grading; and long-term monitoring of BUOW use of artificial burrows at the mitigation sites.

San Mateo Road Culvert Crossing, Camp Pendleton, California. *EPC Corporation.* Biologist. Responsible for conducting a nesting bird clearance survey. Michael Baker biologists conducted preconstruction nesting bird surveys for storm drain improvements at the San Mateo Road culvert crossing within MCB Pendleton, and provided biological monitoring during construction activities to ensure no impacts to sensitive biological resources.

March Inland Port Airport Auth. *Hillwood Investment.* Biologist. Responsible for conducting a field survey and a jurisdictional delineation and for writing a biological report, including a Western Riverside County MSHCP Consistency Analysis, as well as a jurisdictional delineation report.

Tesoro Water Facilities, Orange County, California. *Santa Margarita Water District.* Biologist. Responsible for writing a Biological Resources Construction Plan. Michael Baker provided design for 23,000 feet of 24-inch domestic water and 20-inch recycled water transmission mains. Pipeline alignments and associated grading were evaluated along with appurtenances and cathodic protection facilities. Design was also provided for one 3.0-MG domestic water reservoir and one 2.0-MG recycled water reservoir on a combined site. The project also required relocation of a portion of the 18-inch Coto de Caza Trunk Sewer and development of a phasing plan to maintain sewer flows at all times.

Iron Horse Hills Residential Development Project, Colton, California. *Distinguished Homes.* Biologist. Responsible for conducting a field survey of the project site and writing a biological habitat assessment of the survey results. Michael Baker provided regulatory services for the Iron Horse Hills Residential Development Project (Tract No. 16798), which is proposed to develop a comprehensive neighborhood consisting of a combination of residential housing, open space, recreational facilities, and associated roadways and infrastructure. Michael Baker conducted a site visit and prepared a Sensitive Plant Survey and Delineation of Jurisdictional Waters. The Sensitive Plant Survey was conducted during the flowering periods of the sensitive plant species known to occur in the general vicinity, but none were observed on site. The delineation of jurisdictional waters identified the U.S. Army Corp of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife jurisdictional authority within the project site.

Palm Springs CC EIR Peer Revie. *City of Palm Springs.* Biologist. Responsible for providing a peer review of a third party biological habitat assessment report.

Preserve Sewer ISMND. *RVA Corporation.* Biologist. Responsible for conducting a biological field survey and writing a habitat assessment based on survey results.

Seefried Addendum EIR. *City of Fontana.* Biologist. Responsible for peer reviewing an existing biological report from a different firm.

Tracy Hills Specific Plan Environmental Impact Report, Tracy, California. *Kimley-Horn and Associates, Inc.* Biologist. Responsible for peer reviewing several biological reports written by a different firm. The SEIR was required by settlement agreements entered into by the City of Tracy and the Sierra Club on the previously certified EIR for the adopted Specific Plan. Critical issues, beyond compliance with the respective settlement agreements, are coordination with the Tracy Municipal Airport/San Joaquin County Airport Land Use Commission (ALUC) with respect to the airport approach zone, compliance with California Senate Bill (SB) 610 and SB 221, securing an adequate and reliable water supply for build-out of the Specific Plan, ensuring adequate wastewater treatment capacity and storm water management, and addressing regional transportation impacts, improvements, and fees.

Park Avenue Over Grand Canal Bridge Replacement Project, Newport Beach, California. *City of Newport Beach.* Biologist. Responsible for a field survey. Michael Baker provided design services for the Park Avenue over Grand Canal Bridge Replacement project. Michael Baker developed preliminary design options for replacing the deteriorating bridge, built in 1930, which is the only link (besides watercraft) between Balboa Island and the small adjacent island known as "Little Balboa." Michael Baker also provided roadway design, regulatory permitting, community outreach, and constructibility evaluation.

Non-Michael Baker Project Experience

Barren Ridge Renewable Transmission Project, Angeles National Forest, Antelope Valley, and Mojave Desert, California. *Los Angeles Department of Water and Power.* Biologist. Responsible for surveys of California red-legged frog, arroyo toad, California spotted owl, and western yellow-billed cuckoo, as well as riparian conservation area mapping surveys, transmission line avian risk surveys, and avian use point-count surveys. Assisted with preliminary jurisdictional delineations and regulatory permit applications. Also responsible for development of the avian risk assessment, avian protection plan, and nesting bird management plan and co-author of the biological technical report, biological assessment, biological evaluation, several biological survey reports, and the biological sections of the joint environmental impact statement/environmental impact report. The project would provide the City of Los Angeles with access to wind- and solar-generated power in the Tehachapi Mountain and Mojave Desert areas of southern California. It would improve system reliability and help the City meet its Renewable Portfolio Standard obligations mandated by the State of California and the City of Los Angeles. The project includes new and upgraded double circuit lines over a distance of 200 miles. 2008 to 2014

Castaic Power Plant Sediment Removal, Castaic, California. *Los Angeles Department of Water and Power.* Lead biologist. Responsible for arroyo toad surveys, construction compliance monitoring and enforcement of mitigation measures required by a biological opinion, trapping and relocation of a USFS-sensitive species, and co-authoring a species protection plan and a biological assessment. Ongoing maintenance requirements at Castaic Power Plant require three check-dam basins in adjacent Castaic Creek to be periodically cleared of all sediment to maintain clean water flow into Elderberry Forebay and Castaic Lake. 2009 to 2013

Terminal Hill Saddle Removal, Sylmar, California. *Los Angeles Department of Water and Power.* Lead Biologist. Conducted a preconstruction clearance survey and advised the client on future environmental concerns. The project involved excavating and removing cement saddles from a hillside. The saddles were previously used to anchor the

Los Angeles Aqueduct in place, but were left in place after the aqueduct was re-routed to a more earthquake-safe location. 2013

Bouquet Reservoir Outflow Reduction, Angeles National Forest, California. *Los Angeles Department of Water and Power.* Lead Biologist. Responsible for researching and advising the client on environmental concerns, particularly related to the unarmored threespine stickleback. The project involved reducing the outflow from the Bouquet Reservoir to reduce the incidence of hazardous road conditions from water overflow onto Bouquet Canyon Road. 2013

Southern Owens Valley Solar Ranch, Owens Valley, California. *Los Angeles Department of Water and Power*. Lead Biologist. Responsible for writing the biological resources section of the project's environmental impact report. The project involved the construction of a 200 megawatt solar photovoltaic facility in the Owens Valley in the northwestern Mojave Desert. Field work was conducted by LADWP biological staff; POWER wrote the EIR section based on this work. 2013

Cathodic Protection Anode Groundbeds Installation Project, Santa Clarita, Antelope Valley, Mojave Desert, and Owens Valley, California. *Los Angeles Department of Water and Power*. Biologist Responsible for conducting a wildlife habitat assessment and preconstruction surveys at different areas of the Los Angeles Aqueduct, as well as coordinating biological monitoring for desert tortoise. The project involved the installation of deep and shallow cathodic protection anode groundbeds at different locations along the Los Angeles Aqueduct in order to prevent aqueduct corrosion. 2013

Gilman Springs Curve Realignment Project, Moreno Valley, California. *Riverside County Transportation Department.* Biologist. Responsible for conducting a wildlife habitat assessment and determining the potential for special-status wildlife species to occur within the project site. The project involves realigning a portion of Gilman Springs Road to reduce the risk of accidents at high speeds. 2013

Riverside Transmission Reliability Project, Riverside, California. *Riverside Public Utilities.* Biologist. Responsible for assisting in preparation of the biological technical report and identifying appropriate habitat for focused surveys for the burrowing owl, as well as assisting in protocol burrowing owl surveys. The project involves a major upgrade to the City of Riverside's electric delivery system through the construction of 230 kV and 69 kV transmission lines. 2013

Palo Verde Mesa Solar Project, Blythe, California. *Renewable Resources Group*. Biologist. Responsible for conducting a general wildlife habitat assessment, assisting with a general biological survey report, leading protocol burrowing owl surveys, and writing a burrowing owl survey report. The project involves the construction of photovoltaic solar panels outside of Blythe, CA, along with two substations and a gen-tie line that will connect to the Blythe Mesa Solar Project. 2012 to 2013

Line 1901 Pipeline Replacement, Ford City, California. *Kinder Morgan.* Biologist. Responsible for conducting and reporting on a wildlife habitat assessment and determining the potential for special-status wildlife species to occur within the project site, writing several resource reports in compliance with Federal Energy Regulatory Commission requirements, and co-writing a biological assessment. The project involves replacing two portions of an existing pipeline in the San Joaquin Valley. 2013

Celilo-Sylmar 500 kV DC Transmission Line NERC Clearance Issue, Sylmar, Antelope Valley, Mojave Desert, and Owens Valley, California. *Los Angeles Department of Water and Power.* Biologist. Responsible for focused desert tortoise surveys, determination of special-status wildlife potentials to occur, preparation of a survey report,

relocation of on-site cactus species, construction compliance monitoring, and revegetation efforts. Due to the publication by the North American Electric Reliability Corporation of updated ground-to-conductor clearance requirements on transmission lines, LADWP was required to mitigate insufficient clearance distances at 23 sites along the Celilo-Sylmar 500 kV DC Transmission Line. The project involved excavating areas that were in violation of the new standards or increasing the height of existing transmission towers to raise the conductors. 2012 to 2013

Jackrabbit-Big Sky 161 kV Transmission Line, Gallatin National Forest, Montana. *NorthWestern Energy.* Biologist. Responsible for conducting northern goshawk surveys along the transmission line and drafting several environmental impact statement sections. The project involved a rebuild and upgrade of an existing 69 kV transmission line in Gallatin County, Montana. 2012

Teckla-Osage-Rapid City 230 kV Transmission Line, **Thunder Basin National Grassland, Wyoming**. *Black Hills Power*. Biologist. Responsible for leading special-status amphibian surveys and assisting with bird use count surveys and raptor nest surveys. The project involved a new 230 kV transmission line from eastern Wyoming to Rapid City, South Dakota. 2012

Blythe Mesa Solar Project, Blythe, California. *Renewable Resources Group.* Biologist. Responsible for assisting in focused botanical surveys, wildlife habitat assessment surveys, preparation of biological technical report, and biological survey reports. The project involves the construction of photovoltaic solar panels, three substations, two operations and maintenance buildings, and a 4.3 mile long, 230 kV transmission line.

Swarthout Canyon Calnev Pipeline Long Term Exposure Prevention Project, Cajon Wash, California. *Kinder Morgan.* Biologist. Responsible for conducting a wildlife habitat assessment and assisting with a botanical and wildlife survey report. The project involves mitigation of pipeline exposures just south of the San Bernardino National Forest in a tributary to Cajon Creek. Proposed work includes constructing two "Arizona" stream crossings and protecting the pipeline with cemented Submar mats. 2012

Haiwee DC/AC Tower Repair, Owens Valley, California. *Los Angeles Department of Water and Power.* Biologist. Responsible for construction mitigation monitoring for the replacement of 12 transmission towers that collapsed during strong winds south of the Owens Lake in CA, as well as for coordination of post-construction restoration. This project was originally conducted in 2010 and was repeated to a lesser extent at the same site in 2012 when strong winds caused a single tower to collapse and further damage two additional towers. 2010 and 2012

Rose Valley First Los Angeles Aqueduct Old Top Removal, **Coso Junction, California.** *Los Angeles Department of Water and Power.* Biologist. Responsible for biological surveys and construction compliance monitoring to support LADWP in replacing the deteriorating original top surface of the First Los Angeles Aqueduct with a new surface in the Rose Valley area south of the Owens Lake. The original top surface of the First Los Angeles Aqueduct is deteriorating and is gradually being removed and replaced along its length. Project activities also involved removing aqueduct-related spoil piles and maintaining the aqueduct access roads at grades consistent with the top of the aqueduct. 2012

Vista-Pahrump 230 kV Transmission Line, Pahrump, Nevada. *Valley Electric Association.* Biologist. Responsible for surveys and protection/avoidance of desert tortoise during construction. The project consisted of the construction of a new 230 kV transmission line in the Mojave Desert. 2012

Vantage-Pomona Heights 230 kV Transmission Line, Yakima, Washington. *PacifiCorp.* Biologist. Responsible for conducting aerial sage-grouse surveys, ground level sage-grouse habitat assessments, and botanical surveys.

The project involves the construction of a 60-mile transmission line crossing federal, military, and private lands in eastern Washington. 2010 to 2011

Coso Substation, Coso Junction, California. *Southern California Edison.* Biologist, responsible for environmental compliance monitoring during construction. The project involved the construction of a new substation south of the Haiwee Reservoirs to help facilitate the transmission of electrical energy to southern California. Project duration 2010.

Castaic-Olive Transmission Line Tower 247/5 Streambed Realignment, Sylmar, California. *Los Angeles Department of Water and Power.* Biologist. Responsible for construction compliance monitoring for a streambed and culvert sediment removal and streambed diversion. The project involved the cleanout of a 96-inch culvert and upstream and downstream portions of the streambed to allow water to sufficiently flow through the creek. Water was previously unable to flow through the culvert at a sufficient rate due to excessive sediment buildup, causing erosion along the side of a transmission tower footing and threatening the tower's stability. The historically-altered streambed was temporarily diverted to its original course to further prevent any erosion at the tower footing. 2009 to 2010

Lytle Creek Transmission Line Road Repair, San Bernardino National Forest, California. *Los Angeles Department of Water and Power*. Biologist. Responsible for assisting in a general biological resources survey of the project site, assisting in identifying sensitive wildlife species and their potentials to occur within the project area, and assisting in habitat assessments arroyo toad and San Bernardino kangaroo rat. The project involved the proposed reconstruction of an eroded and storm-damaged transmission line access road in the San Bernardino National Forest. 2008 to 2010

Pacoima Canyon Access Road Repairs, Angeles National Forest, California. *Los Angeles Department of Water and Power.* Biologist. Assisted with a habitat assessment and co-author of the biological assessment for the project. Also provided environmental compliance monitoring during emergency construction. The project consisted of a transmission line access road repair following damage from above-average rainfall. However, after the project area was burned in the Station Fire and the transmission line was shut down, the project was granted emergency status to reestablish electrical connectivity. 2008 to 2010

Power Plant No. 2 Tailings Removal, Angeles National Forest, California. *Los Angeles Department of Water and Power.* Biologist. Responsible for biological assessments and construction mitigation monitoring, as well as co-authoring a joint biological assessment/biological evaluation. The project involved the removal of tailings from LADWP's generation facilities in the Sierra Pelona Mountains. The tailings were left from the construction of the First Los Angeles Aqueduct in circa 1910. 2008 to 2009

Yreka-Weed 115 kV Transmission Line Mitigation Monitoring and Compliance, Weed, California. *PacifiCorp*. Biologist. Provided daily on-site monitoring of sensitive environmental resources and mitigation compliance including wetland construction, sensitive plant and wildlife avoidance and minimization effort, erosion control, aesthetic landscape design and installation, cultural resource protection, and air quality. The project consisted of upgrading an existing transmission line to help meet increasing energy demands in the surrounding area. 2007 to 2008

Previous Work History

POWER Engineers, Inc., Biologist, 2007-2014

University of California, Irvine, Department of Ecology, Laboratory Technician and Independent Researcher, 2005-2007

Continuing Education/Training

Santa Ana Sucker Training, Riverside-Corona Resource Conservation District, Riverside, California, 2016

Desert Flora, University of California Riverside Extension, Palm Desert, California, 2015

Basic Wetland Delineation, Wetland Training Institute, San Diego, California, 2015

Southwestern Willow Flycatcher Survey Training Workshop, Southern Sierra Research Station, Lake Isabella, California, 2013

NEPA/CEQA Training, Northwest Environmental Training Center, San Diego, California, 2012

Learning California Bird Sounds, Sea & Sage Audubon Society, Huntington Beach, California, 2012

Field Ornithology Specialized Study Program, University of California at Riverside Extension, Riverside, California, 2012

Avian Power Line Interaction Committee Short Course/Workshop, Avian Power Line Interaction, Santa Monica, California, 2012

Western Pond Turtle Workshop, Elkhorn Slough Coastal Training Program, Watsonville, California, 2011

Flat-tailed Horned Lizard Workshop, Bureau of Land Management and California Department of Fish and Wildlife, El Centro, California, 2010

California Red-legged Frog Workshop, Alameda County Conservation Partnership, Livermore, California, 2010

Herpetology, Eastern Oregon University, Online, 2010

Rare Pond Species Workshop, Laguna de Santa Rosa Foundation, Santa Rosa, California, 2009

Authorization for Survey of Arroyo Toad, United States Department of the Interior, Ventura, California, 2009

CEQA Basics Workshop, Association of Environmental Professionals, Orange, California, 2008

Introduction to Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, Ridgecrest, California, 2008

Honors and Awards

Excellence in Research, University of California at Irvine, 2007

Honors in Biological Sciences, University of California at Irvine, 2007

Campus Wide Honors, University of California at Irvine, 2007

Presentations

Winkleman, Ryan; Nitrogen Fertilization and Species Loss Affect Soil Properties and Microbial Enzyme Activity of the Alpine Tundra; Undergraduate Research Symposium; University of California at Irvine; 2007

Publications

Suding, K.N., I.W. Ashton, H. Bechtold, W.D. Bowman, M.L. Mobley, and R. Winkleman. 2008. Plant and Microbe Contribution to Community Resilience in a Directionally Changing Environment. In Ecological Monographs 78(3): 313-329

Winkleman, R. 2007. Nitrogen Fertilization and Species Loss Affect Soil Properties and Microbial Enzyme Activity of the Alpine Tundra. In University of California, Irvine Journal of Undergraduate Research in the Biological Sciences 37: 1055-1066

Research

Nitrogen Fertilization and Species Loss Affect Soil Properties and Microbial Enzyme Activity of the Alpine Tundra; University of California at Irvine; Independent Researcher. This project investigated the potential correlation between levels of carbon and nitrogen in the soil and the effects on native plant species composition.

Seminars/Conferences

Wildlife Society Western Section Annual Conference, Wildlife Society Western Section; Ontario, California, 2011

Ecological Society of America Annual Conference, Ecological Society of America, Memphis, Tennessee, 2006

Specialized Experience

Bird banding experience

eBird Regional Reviewer, Orange County, California

Computer Skills

Bluebeam Revu
Canon Digital Cameras
Google Chrome
Google Earth Professional
Microsoft Excel
Microsoft Power Point
Microsoft Word

Instrument Proficiency

Flow Meters
GPS

Professional Affiliations

Ecological Society of America (ESA), Member, 2006 - 2015, 128172

Society for the Study of Amphibians and Reptiles (SSAR), Member, 2012-2013
The Wildlife Society (TWS), Member, 2012

Ruben D. Salas Puente

Environmental Associate

Years with Michael Baker: 3

Degrees

M.U.R.P., 2015, Urban and Regional Planning, California State Polytechnic University, Pomona

B.A., 2012, English Languages and Literatures, California State Polytechnic University, Pomona

General Qualifications

Mr. Salas is an Environmental Associate Planner within Michael Baker's Environmental/Land Planning Department, where he is involved in the day-to-day CEQA/NEPA document writing. His experience reaches outside of environmental planning and into transportation planning which has provided Mr. Salas with a wide understanding in the relationship between environmental and transportation issues. Mr. Salas has been involved in the planning and execution process of various projects such as the Enhanced Mobility and Complete Streets Transition Plan, Erving "Magic" Johnson Recreation Master Plan, (SCAG) Valley Boulevard Corridor Specific Plan Health & Wellness Element, and the Los Angeles County Healthy Community Unfunded Bikeway. Mr. Salas has earned a B.A. in English, Literature & Language and a Master's in Urban and Regional Planning M.R.U.P.

Experience

ATP-On Call Survey. *Pardee Homes.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Engineering Design and Support Services for Road and Flood Control Construction Projects, Los Angeles County, California. *Los Angeles County, Department of Public Works.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker has been providing as-needed, task order engineering design and support services for various public works projects. Services include project identification, development, management, design, scheduling, and delivery. All work is performed in conformance with the client's policies, procedures, and standards as well as all pertinent federal, state, city, and county guidelines and standards. Typical task order projects include investigations and rehabilitation for pavement and flood control facilities; investigation and inventory of existing road and flood control facilities; and traffic congestion relief studies, including road widenings, grade separations, truck-impacted intersections, parkway improvements, intelligent transportation systems (ITS), traffic calming, pedestrian safety, landscaping, Americans with Disabilities Act (ADA) compliance, and traffic signals/control.

Ervin "Magic" Johnson Recreation Master Plan, Los Angeles, California. *LA County Parks & Recreation.* Environmental Planner. Involved in the day-to-day public comments gathering which took place at the project site. The project site was heavily utilized and was depended upon for community members routine exercise and healthy living which made the comment gathering portion of this project a critical component in the park redesign. Given the large Latino demographic population, it was essential, for proper communication, that I communicated in Spanish and that project design proposal ideas were well understood. The Earvin "Magic" Johnson Recreation Master Plan (EMJ) is approximately a 120-acre recreation area located within a disadvantaged urban community known as South Central-Willowbrook area where the community consists of 58% Hispanic or Latino and 35% African-American residents. The Project is a community-based and needs-based preliminary design of a state-of-the-art recreational facility in the EMJ Recreation Area. Given the project location consisting of minority and

underserved residents, the project required developing and implementing an Outreach Strategic Plan that would consist of stakeholder meetings, special interest/ small group interviews, (3) community workshops and a final County Public Hearing. Michael Baker was contracted to provide development of a conceptual design alternatives plan for recreation facilities such as a bicycle and pedestrian trails, exercise stations, children play areas, picnic areas, and other public use areas. Michael Baker will prepare baseline conditions data such as mapping, demographic trends for parks & recreation needs, traffic study, title search material, CEQA (including Air/GHG/Noise, Jurisdictional Delineation, Biology, and Cultural Resources), and a regulatory compliance strategy & permit plan. Michael Baker will be apply County codes and be familiar with the necessary restrictions and processes to prepare the Final Recreation Master Plan and phasing plan.

Los Angeles County Healthy Community Unfunded Bikeway, Los Angeles, California. *Los Angeles County, Department of Public Works.* Transportation Planner. Involved in the data collection process which consisted in walking the corridors in which the bikeways would be implemented. Utilizing a Multi-modal analysis software, the bikeway system was analyzed and results were assessed for adequacy and consistency with goals. Michael Baker evaluated 15 corridors within the county to determine their feasibility for the installation of either Class II or Class III bicycle routes. The county had made preliminary recommendations but wanted an independent evaluation with the utilization of more creative approaches to implementing bicycle facilities in dense urban corridors. Michael Baker was responsible for data collection, site evaluation, traffic analysis, and conceptual design recommendations for the proposed bicycle facilities.

Malibu Bluffs Parkland Master Plan and EIR, Malibu, California. *Malibu, City of.* Transportation Planner. Managed MetroQuest data regarding public input on the proposed project alternatives. Utilizing Excel, managed raw MetroQuest data and translate it into graphs that could be utilized for decision making purposes, more specifically regarding how alternatives ranked among city residents. Michael Baker is preparing a park master plan and environmental impact report (EIR) for the Malibu Bluffs Parkland project. The project site consists of three parcels totaling nearly 95 acres of land overlooking the Pacific Ocean. A portion of the project area contains an existing park, while the majority of the site is undeveloped open space containing coastal sage scrub habitat. Michael Baker is helping the city explore the potential of the Parkland to provide new recreational opportunities for the Malibu community to meet the city's current and future recreation needs.

Murrieta Hills Specific Plan Amendment, Murrieta, California. *Pulte Homes.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Murrieta Hills Traffic 2.*Pulte Homes.* Planner. Responsibilities included the collection of existing conditions data, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

South Campus Specific Plan Environmental Impact Report, El Segundo, California. *City of El Segundo.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker prepared the environmental impact report for the El Segundo South Campus Specific Plan, including a multi-jurisdictional, multi-phase traffic impact analysis. Michael Baker's services included a wide range of detailed technical studies, including air quality, noise, and traffic, for four development alternatives and a no-development alternative.

Baker Rch 30 AC Traffic. *Baker Ranch Properties, LLC.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Speed, Traffic, and Engineering Surveys, Monterey County, California. *Monterey County.* Planner. Responsibilities included the collection of existing conditions data and field work assessment. Also responsible for transportation planning support; road segments surveying throughout the Monterey County; and data collection of road conditions, speed limits, driver visual impediments, hazards, etc. Michael Baker coordinated speed surveys and performed traffic and engineering surveys for various roadway segments within Monterey County to evaluate traffic speed, volume, and user safety. Michael Baker used the survey data to develop reports in compliance with California Vehicle Code Section 637, Engineering and Traffic Survey.

Bloomington Phase I. *Related Companies of California, LLC.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Transportation Oriented Development Specific Plan and Environmental Impact Report, Duarte, California. *City of Duarte.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker prepared a specific transit-oriented development (TOD) plan and environmental impact report for a 19-acre area adjacent to the Duarte Gold Line Station. The city desired a plan that is flexible with respect to land uses to respond to market conditions. The project was made possible through a Metro TOD planning grant.

Burn Site Traffic. *City of Laguna Beach.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Laguna Canyon Road Corridor Improvement Assessment (El Toro Road to Canyon Acres Drive), Laguna Beach, California. *City of Laguna Beach.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker developed a conceptual plan for Laguna Canyon Road between the intersections of El Toro Road and Canyon Acres Drive. As a primary gateway into the city, this highly visible area has an eclectic mix of land uses, a natural character, and is the only corridor for travel through Laguna Canyon. The project aims to create a multimodal corridor that improves access and safety for all modes of transportation (pedestrians, cyclists, motorists, and transit). It is important to residents and visitors that the project also improves emergency vehicle response time and air quality, while retaining the semi-rural character of the roadway. Michael Baker staff analyzed varying roadway geometries and intersection control types, including signalized and roundabout controlled intersections. In addition, staff presented Synchro/SimTraffic simulations to the city and Caltrans as part of fully exploring the conceptual design recommendations.

Vantis Apartments. *Shea Homes LP, So Cal Div.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

NTP_17th and Superior Live/Wrk. *Intracorp.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Kaleidoscope Exterior and Interior Renovation Initial Study/Mitigated Negative Declaration, Mission Viejo, California. *Crown Valley Holdings, LLC.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker prepared the initial study/mitigated negative declaration for the Kaleidoscope Exterior and Interior Renovation Project, which consists of adding 3,441 square feet of gross leasable space to the existing center entitlements of 247,541 square feet, of which 238,679 square feet are currently built-out, and 3,000 square feet of patio space to the interior of the existing Kaleidoscope Mall structure. Exterior modifications include revised parapet details, entry feature, and signage; and a new exterior paint scheme. New lighting associated with the glass curtain wall, lifestyle graphics, and entry feature is also proposed.

NTP-Dexia Revised Traffic Anls. *Interwest Consulting Group.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Hilton Garden Inn TIA. *S3 Hospitality, LLC.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Japan Food Corp Traffic. *JFC International, Inc.* Planner. Responsibilities included the collection of existing conditions parking data, and minimum parking requirements from the City. Assisted in the analysis in the parking utilization analysis and write-up.

Santa Fe Trail Plaza Traffic. *Santa Fe Trail Holdings, LLC.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Engineering & Traffic Surveys. *Los Angeles County, Department of Public Works.* Planner. Responsibilities included the overall speed survey data collection of existing conditions of road segments in the unincorporated areas of Los Angeles County.

El Monte Media Ctr Traffic. *Asia Pacific California, Inc.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Enhanced Mobility and Complete Streets Transition Plan, Laguna Beach, California. *City of Laguna Beach.* Transportation Planner. Responsibilities included the collection of all existing conditions data including public opinions, sidewalk widths, location of sidewalk gaps, on-street and off-street parking, transit stops, transit data, identification of bicycle facilities, transit data management and translation, research regarding Complete Streets, and project write-up assistance. Michael Baker prepared a Complete Streets transition plan that will provide the policy framework for the city to implement physical and operational changes to the roadway network to improve conditions for all users including bicycles, pedestrians, transit and motor vehicles. As part of the project, Michael Baker conducted an extensive analysis of the existing facilities in Laguna Beach that support or hinder mobility including sidewalk locations, street grades, and speed limits. Extensive community outreach, including an online survey, walk audit, and bike audit, resulted in community identification of issues and opportunities. The final plan included recommendations to improve mobility citywide.

Meridian Building Parking. *Huff Properties.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Trnmt Hills PA 15 & 16 SPA. *Pardee Homes.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Optimus Logistics Ctr Traffic. *Optimus Group.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

RBF_Optimus013114. *Optimus Group.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Wagon Wheel Access Assessment. *Oakwood Communities, Inc.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Nickelodeon Office Building Initial Study/Mitigated Negative Declaration, Burbank, California. *City of Burbank.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker prepared an initial study/mitigated negative declaration (IS/MND) for the Nickelodeon Office Building (203 West Olive) Project. The project involved the construction of a five-story office building (approximately 113,760 square feet) and five-level parking garage. The proposed office building would provide office space and associated amenities (e.g., conference rooms and restrooms), allowing Nickelodeon to expand its existing campus, located to the southwest, to include the project site. Project approvals consisted of a development review permit, variance, and conditional use permit. Primary issues analyzed within the document included aesthetics, geology and soils, hazards and hazardous materials, noise, and transportation/traffic.

OLC II Traffic. *Optimus Group.* Planner. Responsibilities included the collection of existing conditions data, field work assessment, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance.

Valley Boulevard Corridor Specific Plan Health and Wellness Elements, San Bernardino County, California. *Southern California Association of Governments.* Environmental Planner. Responsibilities included the collection of community members' opinions/responses regarding the wellness elements projects proposed through the community outreach component. Michael Baker provided planning services to incorporate a health and wellness focus into the specific plan for the Valley Boulevard Corridor. Michael Baker's services included vision development, corridor planning, and recommendations.

Mission Viejo Medical Center Environmental Impact Report, Mission Viejo, California. *NCA Mission Viejo, LLC.* Planner. Responsibilities included the collection of existing conditions data, all project illustrations including maps and volumes, Traffix network set-up, and partial report draft write-up assistance. Michael Baker prepared the environmental impact report (EIR) for the Mission Viejo Medical Center Project, which consists of the construction of a four-story, 110,000 square-foot medical office building and associated five-level parking structure on a 3.76-acre site currently comprising surface parking for the Shops at Mission Viejo, a portion of Shops

Boulevard, and a landscaped hillside. Key project issues included aesthetics, traffic, air quality, greenhouse gas emissions, noise, geology and soils, hydrology and water quality, and public services and utilities.

Research

Comparison of Station Access Quality Rating and Travel Behavior: An Examination of Orange County, California Commuter Rail Stations Non-motorized Access #15-5546 - Transportation Research Board (TRB). Department of Urban and Regional Planning, California State University, Pomona. Student Research. This research analyzes existing ways of assessing non-motorized transportation infrastructure and the way these are graded for adequacy. The research finds that although important variables are being utilized in assessing non-motorized transportation infrastructure adequacy, there are a number of other variables being considered in other parts of the world where non-motorized infrastructure is a major focus and source of transportation. Ultimately, it was found that a wider range of variables such as transportation/mobility options to and from non-motorized infrastructure, safety, density, and urban grid/street geometry should be variables that are considered in assessing how non-motorized transportation really scores considering the utilization it is given.

Computer Skills

Adobe Illustrator
ArcGIS
Google Earth Professional
Google Sketchup
Highway Capacity Software (HCS)
Microsoft Excel
Microsoft Power Point
Microsoft Word
Synchro (Trafficware)
TIGER (US Census Street files)
Traffix

Professional Affiliations

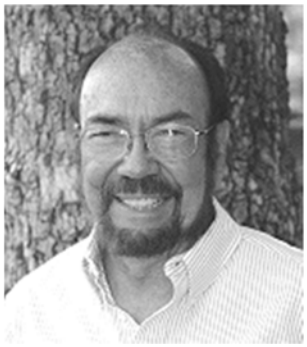
American Planning Association (APA), Member
Orange County Traffic Engineering Council (OCTEC), Orange County, Member
Transportation Research Board (TRB), Public Involvement Transportation Planning Sub-committee member

Kunzman Associates, Inc.

Over 40 Years of Excellent Service

William Kunzman, P.E.

Principal



Education

University of California at Los Angeles, B.S., Engineering

Yale University, Bureau of Highway Traffic, Certificate in Traffic Engineering

Federal Highway Administration, 18 Month Highway Engineering Training Program

University of California at Irvine, Guest Lecturer

California State University at Fullerton, Class Instructor

American Planning Association, Guest Speaker

Professional Engineer Registration

Registered Professional Traffic Engineer in the State of California, TE0056

Professional History

County of Los Angeles, Assistant Traffic Engineer

Wilbur Smith Associates, Assistant Traffic Engineer

Federal Highway Administration, Policy Planning

County of Riverside, Assistant Traffic Engineer

Lampman Associates, Traffic Engineer Associate

City of Irvine, Transportation Planning Engineer

Weston Pringle and Associates, Traffic Engineer Associate

Kunzman Associates, Inc., Principal

Overview

William Kunzman, P.E., has worked professionally in traffic engineering and transportation planning since 1967 in both the public and private sectors. Bill is an expert witness in traffic engineering involving highway accidents (automobile, truck, bus, pedestrian, bicycle, and motorcycle). Bill has extensive knowledge of governmental agency procedures, design, geometrics, signs, traffic controls, parking, and maintenance. Bill is highly skilled in presenting findings and recommendations to elected officials, municipal commissions community groups, the Courts, and the general public.

Honors and Awards

- Received fellowship and living stipend to attend Yale University from the Insurance Institute for Highway Safety, 1967-1968.
- Elected Class President of Yale University Bureau of Highway Traffic, 1967.
- Recipient of the 1978 Institute of Transportation Engineers Past Presidents' Award. This is the most prestigious award granted by the Institute of Transportation Engineers to persons 35 years old or younger. It is given annually to one person on a worldwide basis.
- Received from Institute of Transportation Engineers, Southern California Section, “Young Traffic Engineer of the Year Award” in 1979.

Professional Publications

- "Irradiation and Halation", Traffic Engineering Magazine, December 1968.
- "Accuracy of Computer Program BMD02R, Stepwise Regression" Highway Planning Technical Report Number 17, Federal Highway Administration, Washington, D.C., April, 1970.
- "A Simplified Procedure to Determine Factors for Converting Volume Counts to ADT's", Traffic Engineering Magazine, October 1976.
- "Annual Vehicle Miles Traveled per Family as a Function of Primary Wage Earner's Work Trip Mileage", Institute of Transportation Engineers Technical Notes, March 1978.
- "Another Look at Signalized Intersection Capacity", ITE Journal, August 1978. This article was submitted in competition for the 1978 Institute of Transportation Engineers Past President Award and won the award.
- "Urban Development and Circulation Systems - A Critical Balance", ITE Compendium of Technical Papers, August 1980.

CARL BALLARD, LEED GA

PRINCIPAL

EDUCATION

California State University, Fullerton: B.S., Mathematics, with emphasis in Probability and Statistics

University of California Institute of Transportation Studies Certificate

Institute of Transportation Engineers Professional Development Seminar Certificates

California State University, Fullerton, University Extended Education Services Certificate

PROFESSIONAL HISTORY

RKJK & Associates, Inc., Partner

Urban Crossroads, Inc., Partner

Kunzman Associates, Inc., Partner

AFFILIATIONS

American Planning Association (APA)
Past Board of Directors

Association of Environmental Professionals (AEP)
Past Board of Directors

Institute of Transportation Engineers (ITE)

Orange County Traffic Engineering Council (OCTEC)

Business Development Association (BDA)

Building Industry Association of Southern California (BIA)

OVERVIEW

Carl Ballard has been involved in transportation planning and traffic engineering since 1982 and has completed numerous traffic studies in the States of California, Arizona, Colorado, Missouri, and Nevada. Carl has also been a partner in transportation planning firms within Southern California.

Carl is involved in many aspects of the profession, including: site access evaluation, intersection capacity analysis, traffic forecasting, circulation planning, traffic impact studies, and transportation demand management plans.

Transportation projects completed range from focused site-specific traffic studies to area wide circulation studies. Carl has written many traffic studies throughout the eight Southern California counties. He has managed and performed the technical efforts for general plan circulation elements, redevelopment plans, specific plans and environmental impact reports for public and private clients.

HIGHLIGHTS OF EXPERIENCE

Carl has served as Project Manager on the following projects in the Bloomington area of San Bernardino County:

- **Cedar/Bloomington Commercial Project Traffic Study**
  The project site is located north of Valley Boulevard, east of Cedar Avenue, and south of Bloomington Avenue in the County of San Bernardino. The approximately 6 acre project site I s proposed to be developed with 57,927 square feet of commercial retail land use. Access to the site will be via Bloomington Avenue, Vine Street, and Valley Boulevard. The traffic report contains documentation of existing traffic conditions, trips generated by the project, distribution of the project trips to roads outside the project, and an analysis of future traffic conditions.

- **Bloomington 167 Traffic Impact Analysis**
  The proposed development is located along the south side of 7th Street between Locust Avenue/Armstrong Road and Linden Avenue in the County of San Bernardino. The project site is proposed to be developed with 167 single-family detached residential dwelling units. Three accesses will be provided to 7th Street. This report analyzes traffic impacts for the anticipated opening date with full occupancy of the development in Year 2020, at which time it will be generating trips at its full potential.

ROBERT KUNZMAN

PRINCIPAL ASSOCIATE

EDUCATION

California State University, Fullerton: Certificate in Urban & Regional Planning

Institute of Transportation Engineers Professional Development Seminar Certificates

Trafficware, Ltd. NV Synchro Studio Training Course: Completion of Synchro & SimTraffic Programs

PROFESSIONAL HISTORY

Kunzman Associates, Inc., Engineering Assistant

Kunzman Associates, Inc., Associate

Kunzman Associates, Inc., Senior Associate

AFFILIATIONS

American Planning Association (APA)

Association of Environmental Professionals (AEP)
Past Board of Directors

Institute of Transportation Engineers (ITE)

Building Industry Association of Southern California (BIA)

Orange County Traffic Engineering Council (OCTEC)

OVERVIEW

Robert Kunzman has completed 200+ traffic impact analyses, trip generation analyses, and parking studies that include various residential, commercial and industrial projects in Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Robert's familiarity with traffic engineering methodologies and procedures is based upon work in the public and private sectors over the last 10 years.

Robert's involvement in site access evaluation, intersection capacity analysis, traffic forecasting, circulation planning, traffic impact studies, parking studies, parking demand analysis, and parking management plans make him an asset to the firm. Completed transportation projects range from focused site-specific traffic studies to areawide circulation studies. Robert utilizes the TRAFFIX, SYNCHRO, and WEBSTER programs for intersection analyses, the PATHPRO program for ADT-to-peak hour volume calculations, ROADPLAN software for ICU and delay evaluations, and the ULI spreadsheets in shared parking analyses.

HIGHLIGHTS OF EXPERIENCE

Robert has served as Project Manager on the following projects in the Bloomington area of San Bernardino County:

- **Valley Boulevard Raised Median Traffic Impact Analysis**
  The proposed project includes the construction of a raised median along Valley Boulevard between Locust Avenue and Spruce Avenue in the County of San Bernardino. The raised median will restrict access at the unsignalized intersections of the study area and will result in the redistribution of existing and future traffic volumes. All intersections along Valley Boulevard between Locust Avenue and Spruce Avenue which will be affected by the construction of the proposed median are included in this analysis. Turning movements which will be restricted by the raised median were redistributed to the nearest full access intersection along Valley Boulevard for with project conditions. In general, redistributed traffic was routed to follow the shortest path available in the original direction of travel. Midblock traffic between Locust Avenue and Linden Avenue was redistributed to a left/u-turn at the Locust Avenue/Valley Boulevard or Linden Avenue/Valley Boulevard intersection. The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with California Environmental Quality Act authorizing legislation. This report analyzes traffic impacts for the anticipated completion date of the raised median project in Year 2013 and for the Year 2035.

Linda Archer

Environmental Specialist

Linda Archer is an environmental specialist and project manager with 16 years' experience providing natural resource and regulatory compliance consulting services, specializing in the integration of natural resource and Clean Water Act (CWA) issues within the planning process, as well as application of the Rapanos Guidance. Ms. Archer's has experience preparing and providing quality assurance/quality control review for documents in compliance with the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), biological technical reports and natural environment studies, and biological assessments.

Ms. Archer advises clients on the regulatory permitting process, obtaining permits under the CWA Sections 404 and 401, California Porter-Cologne Act, state and federal Endangered Species Acts (ESAs), and California Fish and Game Code Sections 1600–1616, as well as from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

Ms. Archer has extensive experience managing projects in Riverside and San Bernardino counties, particularly complying with the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and the Coachella Valley MSHCP. She performs jurisdictional delineations, general and directed surveys for federally and state-listed plants, locally important plant species identification, mitigation and construction monitoring, data collection for field studies and development of restoration plans, and oak tree assessments.

Ms. Archer has experience managing large biology teams, and maintains open communication with clients and among team members throughout the project process, enabling efficient collaboration and allocation of resources where needed to manage workload.

EDUCATION

University of Rochester
BS, Biology, Ecology, and Evolution, 1996

CERTIFICATIONS

Wetland Training Institute

- Plant Identification for Coastal Southern California, June 2007
- Advanced Hydric Soils, April 2005
- Wetland Delineation, March 2002

Southern California Coastal Water Research Project: CRAM 1-day workshop, 2008

Society for Ecological Restoration (SERCAL): Planned Grazing in the Management of Native Grasslands, 2003

California Native Grass Association (CNGA): Native Grassland Restoration, 2002

PROFESSIONAL AFFILIATIONS

American Planning Association, Los Angeles Chapter

California Native Plant Society

CNGA

SERCAL, California Chapter

Project Experience

Development

Specific Plan, Benchmark Pacific Corp, Hemet, California. Served as task leader for biological and regulatory compliance services and as an assistant project manager on the EIR for a specific plan in Hemet. Natural resource issues included compliance with the Western Riverside County MSHCP, conservation of vernal pools, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board.

Eagle Valley Development, Rose Investments, Inc., Lake Mathews, California. Served as biology and permitting task leader for the 800-acre master planned community located north of Lake Mathews in the sphere of influence of the City of Corona. Work efforts for this project included constraints analysis of

multiple access roads connecting the project site to Cajalco Road to the south and La Sierra Avenues to the east. Biology and permitting issues included MSHCP consistency analysis including HANS review, determination of biologically equivalent or superior preservation for riparian/riverine habitat, focused surveys for special-status species, jurisdictional delineation for 15 drainages, and consultation with the associated agencies.

Mine Expansion, Justice Associates, Coachella Valley Aggregates, Riverside County, California. Served as project manager for two mine expansion projects (180 acres and 400 acres) located in Coachella Valley in Riverside County, California. Oversaw technical studies including biological resource surveys, focused desert tortoise surveys, Coachella Valley MSHCP compliance, jurisdictional delineation, and cultural resource surveys.

CEQA Biological Study and Assorted Surveys, Trimark Pacific Homes, Victorville, California. Project manager for several projects for Trimark Pacific Homes in the Victorville area. Scope of the projects consisted of cultural resources assessment, focused Mohave ground squirrel (*Spermophilus mohavensis*) surveys, focused burrowing owl surveys (Athene cunicularia), focused desert tortoise surveys, CEQA-level general biological technical report, jurisdictional delineation, and 404, 401, and 1602 permit compliance. Managed efforts of staff biologists and subconsultants, coordinated with regulatory agencies, and assured environmental compliance of the projects. Conducted the general biological field survey, the jurisdictional delineations, and obtained the 404, 401, and 1602 permits.

ESA Compliance and Regulatory Services, Century Vintage Homes, San Bernardino, California. Project manager for a 280-acre site in Devore area of San Bernardino designated for residential development. Efforts included a jurisdictional delineation, regulatory advisory services, and ESA compliance.

Resource Management Plan for Planned Community, Aera Energy, LLC, Los Angeles and Orange Counties, California. Prepared a Restoration Management Plan for an approximately 3,000-acre master planned community in Los Angeles and Orange counties. Utilized GIS to incorporate existing resources, soils, aspect, slope, and wildlife movement corridors in the development of the plan. Worked closely with the California Department of Fish and Game, the Los Angeles County Fire Department, and the Orange County Fire Authority to develop unique mitigation strategies to maximize on-site opportunities. Additionally, analyzed baseline conditions to determine impacts to special-status biological resources and develop mitigation strategies for the project and alternatives.

Resource Management Plan for Planned Community, Ahmanson Land Company, Ventura County, California. Provided input to the Resource Management Plan for an approximately 3,000-acre master planned community in Ventura County. Contributions to the Resource Management Plan included management of special-status plant resources, a coastal sage scrub restoration plan, and a native grassland restoration plan. Conducted research on the state-listed San Fernando Valley spineflower and participated in an oak tree inventory that documented over 3,000 trees on the site.

Education

Glen Mor 2 Student Housing EIR, University of California, Riverside, Riverside, California. Project involved preparation of an EIR and associated technical studies for a University of California, Riverside (UCR) student housing community on approximately 21 acres of university-owned property. The project is covered in the University 2005 Long-Range Development Plan's (LRDP's) Land Use Plan. Ms. Archer was responsible for preparing the biological resources and jurisdictional delineation technical reports

supporting the EIR. Primary resource issues include an Arroyo within the project site, which is defined as naturalistic open space in the LRDP. The technical report included a consistency analysis of the project with the LRDP, and avoidance and mitigation measures for potential impacts to the Arroyo. The proposed project also occurs within the Western Riverside County MSHCP area. UCR is not a permittee under the Western Riverside County MSHCP; however, to address CEQA provisions related to consistency with habitat conservation plans and natural community conservation plans, the impact assessment and proposed mitigation measures were conducted and developed in accordance with the Western Riverside County MSHCP and associated implementation guidance.

Energy

Tehachapi Renewable Transmission Line Project, Biological Consulting, Southern California Edison, California. Ms. Archer served as the biological monitor manager on an approximately 174-mile transmission project that traverses from Antelope Valley through the Angeles National Forest to Chino Hills in the Los Angeles Basin. In the role of biological monitor manager, Ms. Archer was responsible for the compliance program related to biological resources during construction activities, including understanding all permit conditions related to biological resources (including CEQA mitigation measures, water permit conditions, and ESA permit conditions), providing consistency in biological monitoring and reporting across all segments, ensuring adequate staffing levels for biological monitors (up to 45 monitors per day), developing and implementing a training program for all biological monitors, and taking corrective actions for underperforming monitors.

On-Call Biological Services, Southern California Gas, California. Ms. Archer served as project manager for an on-call contract with Southern California Gas to provide biological and permitting support for operations and maintenance activities. Ms. Archer was the project manager for 12 task orders, which included biological reports (habitats assessments, plant survey, and Western Riverside County MSHCP consistency review) for the Evans Road gas pipeline installation, desert tortoise monitoring and pre-construction surveys, biological documentation (National Forest Biological Assessment/Evaluation) for the Lake Elsinore Microwave Station, and California newt (Taricha torosa) surveys and monitoring. Task orders frequently required mobilizing biologists in less than 24 hours to respond to emergency maintenance needs.

Municipal

Mockingbird Canyon to Harford Springs Regional Trail, Riverside County Regional Park and Open Space District, Riverside County, California. The County of Riverside Regional Park and Open Space District is developing and implementing a multi-use regional trail. As project manager, Ms. Archer oversaw completion of a constraints analysis to determine the best route for the trail and technical studies in support of a CEQA document. The constraints analysis included stakeholder and public meetings to compile trail goals and selection criteria, review of existing data to identify constraints, determination of selection criteria, use of GIS to prepare several alternative routes, and analysis of the routes to select a preferred alternative. Primary resource issues included biological resources, consistency with the Western Riverside MSHCP, and cultural resources.

San Bernardino County Department of Public Works On-Call, San Bernardino County Department of Public Works, San Bernardino County, California. Linda has been the client liaison for the County of San Bernardino Department of Public Works for approximately 6 years, managing work under an on-call contract including jurisdictional delineations, permitting, biological surveys, and CEQA compliance.

Resource Management

Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, San Bernardino Valley Water Conservation District, San Bernardino County, California. The project consisted of preparation of a Habitat Conservation Plan for implementation of the Upper Santa Ana River Wash Plan. Ms. Archer served as the biologist responsible for estimating take and compiling avoidance, minimization, and mitigation measures for the potentially affected special-status plant species, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Transportation

Alabama Street Bridge Culvert Replacement Project, Lim and Nascimiento Engineering, Redlands, California. Served as project manager for a culvert replacement project at Alabama Street in the City of Redlands. Work included focused surveys for special-status plant species, completion of a Natural Environment Study for Caltrans, jurisdictional delineation, a biological assessment for San Bernardino kangaroo rat (*Dipodomys merriami parvus*) in compliance with the ESA, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board.

Boulder Street Bridge Replacement Project, Lim and Nascimiento Engineering, Highland, California. Served as task leader for regulatory compliance services for a bridge replacement project in the City of Highland. Work efforts included jurisdictional delineation, focused plant surveys, and obtainment of 404, 401, and 1600 permits. The 404 permit included a Section 7 consultation for San Bernardino kangaroo rat and Santa Ana River woollystar.

Pepper Street Bridge Plant Surveys, City of Rialto, California. Conducted focused plant surveys, which included mapping an extensive population of Santa Ana River woollystar. Assisted with the Biological Assessment, which covered Santa Ana River woollystar and San Bernardino kangaroo rat, in compliance with Section 7 of the ESA.

LAX Master Plan Supplement to Environmental Impact Statement (EIS)/EIR—Los Angeles, California. Worked on the team that drafted the biological communities, wetlands, and threatened and endangered species sections of the LAX Master Plan Supplement to the draft EIS/EIR and final EIS/EIR. Researched scientific literature and solicited input from experts to complete an impact analysis to biological resources resulting from air, light, and noise impacts.

Water/Wastewater

Mojave River Maintenance Permit, San Bernardino County Department of Public Works, San Bernardino County, California. The San Bernardino County Flood Control District (District) performs maintenance activities in accordance with the Floodplain Maintenance Plan within 35 miles of an approximately 65-mile stretch of the Mojave River. Ms. Archer oversaw the completion of the jurisdictional delineation of the subject reaches of the Mojave River. The delineation included a review and analysis of available data to determine jurisdiction based on the river having a significant nexus to a navigable feature or to interstate commerce. The Mojave River watershed is the primary watershed in the desert regions of San Bernardino County and the jurisdiction of the Mojave River has long been contested due to its ephemeral nature. Guidance from the Environmental Protection Agency and the U.S. Army Corps of Engineers issued in 2007 resulting from court cases, "Rapanos Guidance," provides a basis for determining jurisdiction based on navigability, perennial waters, and a significant nexus to such waters or to interstate

commerce. The delineation report reviewed the Mojave River in light of this guidance to determine if it still qualifies as jurisdictional for the U.S. Army Corps of Engineers.

Lake Machado and Wilmington Drain Ecosystem Rehabilitation Project, CDM, Los Angeles, California. Ms. Archer served as the project manager on this highly public project coordinating with the Los Angeles Department of Public Works Bureau of Engineering and Bureau of Sanitation, Los Angeles Recreation and Parks, and team engineers. This project is a Proposition O-funded project that includes improving the water quality within Machado Lake in the City of Los Angeles. Linda coordinated with the client (engineer) and the City (applicant), provided technical oversight on all work efforts, and participated in the jurisdictional delineation and California Rapid Assessment Method (CRAM). Work efforts included baseline biological studies, jurisdictional delineation, CRAM, development of permit strategy, pre-application consultation with agencies, restoration plan, and obtainment of permits from the Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board. Biological studies included focused surveys for least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*), focused surveys for special-status plants, population mapping of southern tarplant (*Centromadia parryi* ssp. *australis*), plant community mapping, and tree inventory. The project site includes approximately 40 acres of freshwater marsh and 53 acres of riparian forest. CRAM was completed on all wetland and riparian areas with a total of 18 assessment areas.

Relevant Previous Experience

ICF International

3/2008–9/2011: Southern California Biology Team Leader – Senior Project Manager

Michael Brandman Associates

3/2004–3/2008: Project Manager/Regulatory Team Leader

Sapphos Environmental Inc.

9/2001–03/2004: Biologist/Project Manager

Jessica Self

Biologist

Jessica Self is a biologist with 5 years' professional experience specializing in botanical and wildlife surveys and inventory. Her extensive experience and knowledge of California fauna and flora combined with proficiency using geographic information system (GIS) software and handheld devices makes her an asset in the field and the laboratory, where she has supervised technicians and undergraduates of varying skill levels. Her teaching experience equips her to clearly communicate scientific information in both written and oral form to industry professionals, clients, and the public. A strong background in biology, chemistry, and habitat restoration allows her to bring a unique understanding of the relationship between plant and wildlife species and their habitats to enhance environmental studies and reports. She has successfully collaborated with federal, state, local, and private agencies and excels at keeping the lines of communication open. Ms. Self has a history of successful team coordination, using data management, record keeping, and technical tools for coordination and conducting meetings.

EDUCATION

Georgia Southern University
MS, Biology, 2012

Western Washington University
BA, Biology, Chemistry Minor, 2009

CERTIFICATIONS/TRAINING

CDFW Rare Plant Voucher Collection
Permit No. 2081(a)-15-011-V

USFWS, Survey Permit:

- Fairy shrimp (submitted)
- Casey's June beetle (passed exam May 2015; permit being processed)

First Aid and CPR Certified

PROFESSIONAL AFFILIATIONS

Desert Tortoise Council (2014–2015)

CNPS (2013–2015)

Project Experience

Energy

Coles Levee Habitat Conservation Plan (HCP), Aera Energy LLC, Kern and Fresno Counties, California. As project biologist, conducted general biological reconnaissance surveys in Belridge, Lost Hills, and Coalinga. Conducted focused surveys for blunt-nosed leopard lizards (*Gambelia sila*) as the PASSPORT Training certified person in charge for all sites.

Nesting Bird Surveys, Blythe Solar Power, Blythe, California. As project biologist, conducted nesting bird surveys.

McCoy Solar Energy Nesting Bird Surveys, First Solar Electric Inc., Blythe, California. As project biologist, conducted nesting bird surveys and wrote nesting bird final reports.

Wind Energy Project Biological Technical Report, Confidential Client, Riverside, California. As project biologist, conducted general biological survey and vegetation mapping and wrote technical report.

Municipal

Warm Creek Conservation Basins Species Mitigation Plan, County of San Bernardino, Flood Control District, San Bernardino, California. Served as project biologist, wrote the Warm Creek Species Mitigation Plan for burrowing owl (*Athene cunicularia*) and nesting birds.

Tequesquite Creek Project Nesting Bird Survey Services, City of Riverside-Department of Public Works, Riverside, California. As project biologist, conducted a jurisdictional delineation and vegetation mapping in Tequesquite Creek/box springs channel. Also wrote proposal and final report.

Transportation

I-215 Keller Road Interchange Project, California Department of Transportation (Caltrans), Murrieta, California. As project biologist, conducted fairy shrimp (*Branchinecta spp.*) surveys, rare plant surveys, burrowing owl surveys, and general biological surveys. Currently writing natural environmental study report.

Water/Wastewater

North Norco Stage 11 Channel Improvements, Riverside County Flood Control and Water Conservation District, Norco, California. Wrote/constructed permit applications for Section 401 water quality certification, Clean Water Act Section 404 permitting, and streambed alteration agreement for North Norco channel improvements.

Operations and Maintenance (O&M) On Call Environmental Services Project Jurisdictional Delineation, County of San Bernardino-Flood Control District, San Bernardino, California. As project biologist, delineated jurisdictional waters for all water basins within the County of San Bernardino using ArcMap.

System Infrastructure Protection Program Environmental Impact Report (PIER), Metropolitan Water District of Southern California, Orange, California. As project biologist and biological monitor, conducted preconstruction nesting bird surveys and biological monitoring for geotechnical studies. Communicated with construction staff regarding avoidance measures and safety hazards in the area.

Biological Services for EIR Project Sensitivity Ranking System Development, County of San Bernardino-Flood Control District, San Bernardino, California. As project biologist, conducted biological sensitivity ranking for water facilities in the desert and mountain regions of San Bernardino County using ArcMap.

As-Needed Storm and Surface Water Permitting Services for Bena Landfill, Kern County Waste Management, Bakersfield, California. As project biologist, wrote an impact analysis for the Bena Landfill and assisted in the applications for the State Water Resources Control Board Section 401 water quality certification and California Department of Fish and Wildlife streambed alteration agreement permits for this project.

Relevant Previous Experience

Various Projects, ISCA Technologies Inc., Riverside, California. As project manager for all internal and external research and development projects for ISCA Technologies, reared multiple species of Coleoptera, Drosophila, Lepidoptera, and Hymenoptera and conducted laboratory and field experiments on these subjects. Wrote Small Business Innovation Research (SBIR) grants funded by the U.S. Department of Agriculture, the U.S. Department of Defense, the National Science Foundation, the National Institute of Health, and the Bill & Melinda Gates Foundation (funding up to $1 million per grant). Wrote monthly, quarterly, semiannual, and final reports for grants and privately funded research projects. Supervised biologists and interns. Scheduled, organized, prepared, and conducted meetings with collaborators, federal agencies and funding agencies. Provided updates to, assisted, and corresponded with research collaborators worldwide. Developed, planned, conducted, and analyzed laboratory and field experiments. Developed and implemented laboratory safety protocols. Edited grants, manuscripts, and reports. Registered new products with federal and state Environmental Protection Agencies.

Various Projects, U.S. Forest Service, Stanislaus National Forest, Sonora, California. As biological science technician for the Stanislaus National Forest, acted as crew leader for the wildlife crew (seven crew members) during the 2012 field season and for the botany crew (four crew members) during the 2012 and 2013 field seasons. Led and supervised the botany crew during threatened and sensitive plant surveys and habitat restoration projects. Led and supervised the wildlife crew during California spotted owl (*Strix occidentalis*), northern goshawk (*Accipiter gentilis*), and carnivore surveys. Conducted quality checks on wildlife and sensitive plant data survey forms, as well as conducting sensitive plant and wildlife surveys, inventories, and monitoring in support of ecological restoration and resource management projects. Collected, interpreted, and supervised data collection conducted with a high standard protocol of quality control.

Planned and developed sensitive plant and wildlife surveys, inventories, and monitoring studies. Using GIS, the California Natural Diversity Database (CNDDB), and Natural Resource Information System (NRIS), conducted prefield review analysis. Entered sensitive plant and wildlife surveys and occurrences as well as legacy data into Microsoft Access Database, GIS, CNDDB and NRIS. Interpreted aerial photos using GIS.

Followed all applicable rules, regulations, and protocols to perform tests, analyses, and surveys. Using adaptive management techniques identified appropriate alterations when needing to adjust protocols or work methods in order to resolve problems or unforeseen situations. Established equipment requirements for projects and informed crew of any changes in required equipment. Conducted conflict resolution discussions among coworkers when necessary and focused on maintaining positive crew dynamics. Led relevant safety meetings, created crew work schedules, and ensured that all crewmembers were conducting surveys efficiently while following all U.S. Forest Service safety protocols. Organized field and lab equipment and ordered supplies.

Wrote literature reviews, grants, and data summaries. Translated technical scientific data and concepts into easy-to-interpret format, using graphs, charts, tables, and presentations. Reformatted/updated survey and occurrence forms, developed and updated protocols, and created a working herbarium. Participated in outreach opportunities and developed partnerships within the community; organized and led volunteer workdays.

Research in Alvord Basin, Oregon, Georgia Southern University, Statesboro, Georgia. As graduate assistant, conducted literature reviews and authored and submitted grants. Wrote and edited multiple manuscripts for publication. Supervised three undergraduates in the field and laboratory over the course of two years. Created publishable-quality experimental designs, gaining professional knowledge of experimental procedure and design. Performed precise record keeping and data collection. Digitized habitat, morphology, performance, and kinematic data in MATLAB and Microsoft Excel. Created research presentations using Microsoft PowerPoint for lecture and poster presentation. Attended and presented at research seminars and research symposiums. Formulated feasible hypotheses and designed statistical sampling and analytical approaches. Analyzed data using multivariate statistical analyses in JMP 10.0 software. Captured lizards, measured their morphological features, and conducted experiments on the subjects in the field while following strict animal husbandry protocols. Filmed with high-speed digital cameras.

Georgia Southern University Herpetology Collection, Statesboro, Georgia. As curatorial assistant, Identified and digitized terrestrial and aquatic reptile and amphibian specimens including whole body organisms, bones, skin and eggs using Specify software. Identified all specimens at the species level. Organized legacy data.

Field Studies, Alvord Basin, Oregon. As field technician, provided field assistance while characterizing the evolution of habitat use, morphology and sprinting performance in desert lizards. Duties included capturing, conducting field experiments and releasing hundreds of lizards in the field while following strict animal husbandry protocols. Identified invertebrate species in lizard fecal samples. Collected extensive vegetation data. Performed precise record keeping and data collection.

Principles of Biology I, Georgia Southern University, Statesboro, Georgia. As lab instructor, implemented laboratory coursework, created and graded exams, and created and conducted lectures. Supervised one weekly section with 25 biology major undergraduates. Ensured proper laboratory safety and attire. Coursework focused on scientific method, microscopy, mitosis, solutions, dilutions, spectrophotometry, enzymes and catalysts, paper chromatography, DNA isolation, agarose gel electrophoresis, DNA fingerprinting, and PCR amplification.

Environmental Biology, Georgia Southern University, Statesboro, Georgia. As lab instructor, implemented laboratory coursework, created and graded exams, and created and conducted lectures. Supervised four weekly sections with 100 non-major undergraduates each semester. Ensured proper laboratory safety and attire. Coursework focused on scientific measurement, scientific investigation, allelopathy, sustainability, environmental microscopy, invasive species and biological control, lichens as bioindicators, population dynamics, and aquatic ecology. Independently identified and taught students how to identify microbes, aquatic species (including fish, macroinvertebrates, and microinvertebrates), lichens, plants, and various fungi using taxonomic keys and microscopes.

Ecological Field Methods and Research in Reptile Ecology, Alvord Basin, Fields, Oregon, Western Washington University. As teaching assistant, tracked desert horned lizards (*Phrynosoma platyrhinos*) using radio telemetry. Supervised 15 undergraduates. Trained students in plant and invertebrate identification and surveys. Maintained camp (repaired tools, cleaned and organized supplies, and cleaned camp). Trained students how to maintain a field notebook. Weighed, measured, and tagged captured lizards.

AmeriCorps Education, Georgia Sea Turtle Center, Jekyll Island, Georgia**.** Instructed and designed outreach programs, field trips, and adult educational programs directed toward sea turtle (Chelonioidea) anatomy, conservation, and rehabilitation. Assisted the husbandry department with surgeries, patient feedings, distributing medications, and physical therapy. Assisted with preparations for the release of sea turtles after rehabilitation. Duties include attachment of satellite tracking devices and insertion of microchips and flipper tags.

Specialized Training

- Successful CEQA Compliance – University of California, Los Angeles, Extension Center, December 2014
- Desert Tortoise Workshop – Ridgecrest, California, November 2014
- California Fairy Shrimp and Tadpole Identification – February 2015

Publications

Collins, C.E., R.E. Anderson, R.A., J.D. Self, and L.D. McBrayer. 2013. "Rock-Dwelling Lizards Exhibit Less Sensitivity of Sprint Speed to Increases in Substrate Rugosity." *Zoology* 116(3): 151–158.

Self, J.D., C.E. Collins, and L.D. McBrayer. In press. "Hurdling for Stability: Lizards Negotiate Obstacles by Altering Locomotor Posture, Kinematics, and Behavior." *Biological Journal of the Linnaean Society*.

Self, Jessica D. 2012. "The Effects of Locomotor Posture on Kinematics, Performance, and Behavior during Obstacle Negotiation in Lizards." Master's thesis; Georgia Southern University, Jack N. Averitt College of Graduate Studies, Department of Biology. *Electronic Theses & Dissertations*, Paper 10. http://digitalcommons.georgiasouthern.edu/etd/10.

Conference Presentations

"Biological Survey Methods." April 2015. Educational outreach presentation for California State University, San Diego undergraduates at 2015 Association of Environmental Professionals California Environmental Quality Act (CEQA) Practicum.

"Sprint Performance and Running Behavior of Obstacle Crossing in the Lizards Crotaphytus bicinctores, Gambelia wislizenii, Aspidoscelis tigris, and Sceloporus occidentalis." March 2012. Paper presented with L.D. McBrayer at Georgia Southern University Graduate Research Symposium. Statesboro, Georgia.

"Sprint Performance and Running Behavior of Obstacle Crossing in the Lizards Crotaphytus bicinctores, Gambelia wislizenii, Aspidoscelis tigris, and Sceloporus occidentalis." 2012. Paper presented with L.D. McBrayer at Society for Integrative and Comparative Biology, Annual Meeting. Charleston, South Carolina. January 2012.