DRAFT
ENVIRONMENTAL IMPACT REPORT
SCH No. 2008111009

HACIENDA AT FAIRVIEW VALLEY SPECIFIC PLAN PROJECT

LEAD AGENCY:

COUNTY OF SAN BERNARDINO
385 North Arrowhead Ave.
San Bernardino, CA 92415-0182
Contact: Doug Feremenga, Ph.D, AICP, LEED AP, Senior Planner
(909) 387-4147

CONSULTANT:

RBF CONSULTING
3300 E. Guasti Road, Suite 100
Ontario, CA 91761
Contact: John Gifford
Project Manager
(909) 974-4900

November 2009

TABLE OF CONTENTS

EXECUTIVE SUMMARY **S.1**
S.1 Introduction and Background S-1
S.2 Project Goals S-1
S.3 Project Overview S-1
S.4 Summary of Alternatives Evaluated S-2
S.5 Project Impacts and Mitigation Measures S-4
S.6 Cumulative Impacts S-39
S.7 Significant Unavoidable Adverse Environmental Effects S-40

Chapter 1 INTRODUCTION AND PURPOSE **1-1**
1.1 Purpose of the EIR 1-1
1.2 Compliance with CEQA 1-1
1.3 Scope of the EIR 1-2
1.4 Content of the EIR 1-4
1.5 Use and Organization of the EIR 1-4
1.6 Public Scoping Process 1-6
1.7 Terminology Used in the EIR 1-7
1.8 Incorporation By Reference 1-9

Chapter 2 PROJECT DESCRIPTION **2-1**
2.1 Project Location 2-1
2.2 Environmental Setting 2-1
2.3 Background and History 2-2
2.4 Project Objectives 2-11
2.5 Project Description 2-11
2.6 Project Phasing 2-40
2.7 Required Permits and Approvals 2-40

Chapter 3 ENVIRONMENTAL ANALYSIS **3-1**
3.0 Environmental Analysis 3-1
3.1 Aesthetics 3.1-1
3.2 Air Quality 3.2-1
3.3 Biological Resources 3.3-1
3.4 Cultural Resources 3.4-1
3.5 Geology, Soils, and Seismicity 3.5-1
3.6 Hazards and Hazardous Materials 3.6-1
3.7 Hydrology, Drainage, and Water Quality- 3.7-1
3.8 Land Use and Planning 3.8-1
3.9 Noise 3.9-1

3.10 Public Services and Utilities 3.10-1
3.11 Population and Housing 3.11-1
3.12 Transportation and Circulation 3.12-1

Chapter 4 GROWTH INDUCING EFFECTS 4-1
4.1 California Environmental Quality Act Guidelines 4-1
4.2 Growth-Inducing Impacts 4-1
4.3 Obstacles to Growth 4-2
4.4 Tax Existing Community Service or Facilities 4-3
4.5 Conclusion 4-3

Chapter 5 ALTERNATIVES TO THE PROPOSED ACTION 5-1
5.1 California Environmental Quality Act Requirements 5-1
5.2 Project Objectives 5-1
5.3 Significant and Unavoidable Impacts of the Proposed Project 5-2
5.4 Alternatives to the Proposed Project 5-2
5.5 Project Alternatives 5-4
5.6 Alternatives Rejected From Further Consideration 5-29
5.7 Environmentally Superior Alternative 5-29

Chapter 6 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES 6-1

6.1 California Environmental Quality Act Requirements 6-1
6.2 Project Impacts 6-1

Chapter 7 EFFECTS FOUND NOT TO BE SIGNIFICANT 7-1
7.1 Agricultural Resources 7-1
7.2 Biological Resources 7-2
7.3 Geology, Soils, and Seismicity 7-2
7.4 Hazards and Hazardous Materials 7-2
7.5 Land Use and Planning 7-2
7.6 Noise 7-3
7.7 Population and Housing 7-3
7.8 Traffic and Circulation 7-4

Chapter 8 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS 8-1
8.1 Project Impacts 8-1

Chapter 9 ORGANIZATIONS AND PERSONS CONSULTED 9-1

9.1 Lead Agency 9-1
9.2 Project Applicant 9-1
9.3 Consultants 9-1

Chapter 10 BIBLIOGRAPHY 10-1

APPENDICES

A Notice of Preparation, Public Comment Letters, and Initial Study
B Air Quality Analysis
C Focused Biological Survey and Jurisdictional Delineation
D Focused Biological Survey and Jurisdictional Delineation for Offsite Improvements
E Joshua Tree Survey Report and Management Plan
F Geotechnical Evaluation
G Phase I Environmental Site Assessment-Fairview Creek and Granite Valley
H Drainage Study
I Noise Analysis
J Public Services and Utilities Letters
K Water Supply Assessment and Water Resources Study
L Traffic Impact Analysis

LIST OF TABLES

S-1 Comparison of Alternatives....S-2
S.2 Summary of Impacts and Mitigation Measures S-5
2.0-1 Land Use Summary Table....2-13
2.0-2 Requested Approvals....2-40
3.2-1 Local Air Quality Monitoring Summary 3.2-3
3.2-2 Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases 3.2-6
3.2-3 Ambient Air Quality Standards 3.2-10
3.2-4 2008 Estimated Emissions Inventory for the MDAMQMD 3.2-12
3.2-5 Attainment Status....3.2-13
3.2-6 Emissions Thresholds 3.2-21
3.2-7 Phase 1 Construction Emissions Summary (Without Mitigation) 3.2-25
3.2-8 Phase 2 Construction Emissions Summary (Without Mitigation) 3.2-26
3.2-9 Phase 3 Construction Emissions Summary (Without Mitigation) 3.2-27
3.2-10 Phase 4 Construction Emissions Summary (Without Mitigation) 3.2-28
3.2-11 Phase 1 Construction Emissions Summary (With Mitigation) 3.2-29
3.2-12 Phase 2 Construction Emissions Summary (Pounds per Day) (With Mitigation) 3.2-29
3.2-13 Phase 3 Construction Emissions Summary (With Mitigation) 3.2-30
3.2-14 Phase 4 Construction Emissions Summary (With Mitigation) 3.2-31
3.2-15 Summary of Interim Peak Operational Emissions (Without Mitigation) 3.2-36
3.2-16 Summary of Buildout Peak Operational Emissions (With Mitigation) 3.2-37
3.2-17 Summary of Interim Peak Operational Emissions (With Mitigation) 3.2-46
3.2-18 Summary of Buildout Peak Operational Emissions (With Mitigation)....3.2-47
3.2-19 California Greenhouse Gas Emissions 3.2-55
3.2-20 Construction Greenhouse Gas Emissions 3.2-57
3.2-21 Interim 2020 Total Greenhouse Gas Emissions 3.2-60
3.2-22 Buildout 2030 Total Greenhouse Gas Emissions....3.2-60
3.2-23 Project Compliance with Applicable 2006 CAT Report Greenhouse Gas Emissions Reduction Strategies....3.2-62
3.2-24 Existing and Proposed State Measures Greenhouse Gas Emissions Reductions (Interim 2020)....3.2-65
3.2-25 Project Mitigation Measures Greenhouse Gas Emissions Reductions (Interim 2020)....3.2-66
3.2-26 Existing and Proposed State Measures Greenhouse Gas Emissions Reductions (Buildout 2030)....3.2-69
3.2-27 Project Mitigation Measures Greenhouse Gas Emissions Reductions (Buildout 2030)....3.2-70
3.3-1 Special Status Plant Species Occurring On-Site and Off Site 3.3-7
3.3-2 Special Status Wildlife Species Occurring On-Site....3.3-16
3.3-3 Special Status Wildlife Species Occurring Off-Site 3.3-17
3.4-1 Eligible Cultural Resources....3.4-3
3.5-1 Active Earthquake Faults in the Project Area....3.5-2
3.6-1 Historic Topographic Map Review....3.6-5
3.7-1 Existing Hydrology 3.7-2
3.7-2 Peak Flow Rates....3.7-33

3.8-1 Surrounding Land Uses 3.8-2
3.8-2 General Plan Consistency Analysis 3.8-12
3.9-1 Existing (Ambient) Noise Level Measurements 3.9-6
3.9-2 Existing Conditions Noise Contours 3.9-9
3.9-3 Noise Standards for Adjacent Mobile Noise Sources 3.9-11
3.9-4 Noise Standards for Other Sources 3.9-12
3.9-5 Residential Uses Impacted by Construction Related Noise 3.9-19
3.9-6 Phase 1 Construction Related Noise Impact Levels 3.9-20
3.9-7 Phase 2 Construction Related Noise Impact Levels 3.9-21
3.9-8 Phase 3 Construction Related Noise Impact Levels 3.9-22
3.9-9 Phase 4 Construction Related Noise Impact Levels 3.9-23
3.9-10 Year 2020 Off-Site Project Related Traffic Noise Impacts 3.9-27
3.9-11 Year 2030 Off-Site Project Related Traffic Noise Impacts 3.9-28
3.9-12 Location of Exterior Noise Level Contours (dBA Ldn) 3.9-30
3.9-13 Cumulative Traffic Noise Impacts 3.9-32
3.10-1 Student Generation Rates 3.10-3
3.10-2 Natural Gas Consumption Factors 3.10-5
3.10-3 Estimated Electricity Usage Rates 3.10-5
3.10-4 Existing Water Supply Sources 3.10-8
3.10-5 Alto Subarea Verified Annual Production 3.10-9
3.10-6 Apple Valley Ranchos Annual Production 3.10-10
3.10-7 Students Generated by the Proposed Project 3.10-23
3.10-8 Proposed Project Natural Gas Consumption 3.10-29
3.10-9 Proposed Project Electricity Consumption 3.10-31
3.10-10 Proposed Project Estimated Water Service Demands 3.10-33
3.10-11 Peak Drainage Flow Rates 3.10-44
3.10-12 Projected Solid Waste Generation at Buildout 3.10-47
3.11-1 Population Trends (Estimate 1990 & 2000-2008) With 2025 Projection 3.11-2
3.11-2 Town of Apple Valley Housing Stock 3.11-3
3.11-3 Regional Housing Needs Allocation Plan 3.11-4
3.11-4 Occupation of Apple Valley Town Residents 3.11-5
3.11-5 Occupation of San Bernardino County Residents 3.11-5
3.11-6 Commuting Times of Apple Valley Town Residents 3.11-7
3.11-7 Workplace Location of Apple Valley Town Residents 3.11-7
3.11-8 Existing and Proposed Project Population Projections 3.11-10
3.12-1 Existing Conditions Intersection Level of Service 3.12-2
3.12-2 Definitions of Level of Service for Uninterrupted Flow 3.12-14
3.12-3 Levels of Service in Terms of Average Total Delay per Vehicle 3.12-16
3.12-4 Project Trip Generation Summary 3.12-18
3.12-5 Other Development Trip Generation Summary 3.12-28
3.12-6 Local Intersection Mitigation Summary for Interim Year (2020) With Project Scenarios 3.12-52
3.12-7 Regional Intersection Mitigation Summary for Interim Year (2020) and Horizon Year 2030 With Project Scenarios 3.12-66
3.12-8 2030 Without Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions 3.12-82
3.12-9 With Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions 3.12-85

3.12-10 Cumulative Improvements – General Plan Buildout (Post 2030) Roadway Off-Site Improvement Summary 3.12-88
3.12-11 Cumulative Onsite Improvements..... 3.12-93
5.0-1 Project Objectives Consistency Analysis 5-3
5.0-2 Comparison of Alternative Project Impacts to the Proposed Project 5-5

LIST OF EXHIBITS

2.0-1 Regional Location Map 2-3
2.0-2 Project Vicinity Map 2-5
2.0-3 Site Aerial Photograph 2-7
2.0-4 General Plan Land Use Designation Map 2-9
2.0-5 Conceptual Land Use Plan 2-15
2.0-6 Conceptual Open Space, Parks, and Trails Plan 2-19
2.0-7 Conceptual Circulation Plan 2-25
2.0-8 Street Sections 2-27
2.0-9 Conceptual Water Plan 2-31
2.0-10 Conceptual Wastewater Plan 2-33
2.0-11 Conceptual Storm Drain and Basin Plans 2-37
2.0-12 Conceptual Grading Plan 2-41
3.1-1a Visual Simulation 1-View North East From Laguna Seca Drive 3.1-9
3.1-1b Visual Simulation 2-View East From Cahuilla Road 3.1-11
3.1-1c Visual Simulation 3-View South From Oldenburg Road 3.1-13
3.1-1d Visual Simulation 4-View West From Cahuilla Road 3.1-15
3.1-1e Visual Simulation 5-View South From Chicago Road 3.1-17
3.3-1a Jurisdictional Delineation Map 3.3-21
3.3-1b Jurisdictional Delineation Map 3.3-23
3.3-2 San Bernardino County Corridor Locations 3.3-25
3.6-1 Project Study Area 3.6-3
3.6-2 Airport Safety Review Map 3.6-39
3.8-1 Existing General Plan Land Use Designation 3.8-9
3.9-1 Sound Levels and Human Response 3.9-3
3.9-2 Noise Monitoring Locations 3.9-7
3.9-3 Noise Sensitive Clusters 3.9-15
3.12-1 Existing Average Daily Traffic (ADT) 3.12-3
3.12-2 Intersection Analysis Locations 3.12-5
3.12-3 Interim Year (2020) Project Trip Distribution 3.12-21
3.12-4 2030 Project (Commercial) Trip Distribution 3.12-23
3.12-5 2030 Project (Residential) Trip Distribution 3.12-25
3.12-6 Interim Year (2020) Project Only Average Daily Traffic (ADT) 3.12-29
3.12-7 2030 Project Only Average Daily Traffic (ADT) 3.12-31
3.12-8 Other Development Location Map 3.12-33
3.12-9 Other Development Only Average Daily Traffic (ADT) 3.12-35
3.12-10 Interim Year (2020) Without Project Average Daily Traffic (ADT) 3.12-37
3.12-11 Interim Year (2020) With Project Only Average Daily Traffic (ADT) 3.12-41
3.12-12 2030 With Project Only Average Daily Traffic (ADT) 3.12-43
3.12-13 Conceptual Mobility Plan 3.12-79
5.0-1 Alternative to Site Plan 5-15

ACRONYMS AND ABBREVIATIONS

§.....Section
ACOE.....U.S. Army Corps of Engineers
BMP ..... Best Management Practice
Caltrans .....California Department of Transportation
CDFG.....California Department of Fish and Game
CEQA.....California Environmental Quality Act
CESA..... California Endangered Species Act
CNDDB .....California Natural Diversity Database
CNPS .....California Native Plant Society
County.....County of San Bernardino
DEIR .....Draft Environmental Impact Report
du ..... dwelling units
e.g.....for example
EIR ..... Environmental Impact Report
Fire Department..... Apple Valley Fire Protection District
General Plan.....County of San Bernardino General Plan
HCP ..... Habitat Conservation Plan
I .....Interstate (Highway)
i.e.....that is
MBTA .....(Federal) Migratory Bird Treaty Act
MMRP .....Mitigation Monitoring and Reporting Program
msl ..... mean sea level
NCCP .....Natural Communities Conservation Plan
NOC..... Notice of Completion
NOI .....Notice of Intent
NOP .....Notice of Preparation
PRC..... Public Resources Code
Project.....Hacienda at Fairview Valley Specific Plan Project
ROW .....right-of-way

CHAPTER S

EXECUTIVE SUMMARY

S.1 INTRODUCTION AND BACKGROUND

According to Section 15121 of the State California Environmental Quality Act (CEQA) Guidelines, an Environmental Impact Report (EIR) is an informational document that is written to inform public agency decision-makers and the public of the significant environmental effects of a proposed project. The purpose of this project-level Draft Environmental Impact Report (Draft EIR) for the proposed Hacienda at Fairview Valley Specific Plan ("project") is to review the existing conditions at and in the vicinity of the project site, identify and analyze the potential environmental impacts, and suggest feasible mitigation measures to reduce significant adverse environmental effects. The potential impacts include both temporary construction-related effects and the long-term effects of buildout of the proposed project.

S.2 PROJECT GOALS

The proposed project includes the following:

- A master-planned residential community with equestrian, family-oriented, and active adult (55+) lifestyles;
- 1,557 acres of residential, commercial, and open space uses;
- A total of 3,114 residential units, a majority of which would be deed restricted active adult uses;
- Supporting land uses such as retail/commercial, parks, recreation, open space, public safety, and public facilities; and
- Two overlay districts: Equestrian Overlay and Golf Course Overlay.

S.3 PROJECT OVERVIEW

The proposed Hacienda at Fairview Valley project site is located in western San Bernardino County, within the Fairview Valley area in the sphere of influence of the Town of Apple Valley, which is immediately west of the proposed project site. The City of Barstow is located approximately 25 miles north of the project site, and the City of San Bernardino is located approximately 35 miles south of the project site. Lucerne Valley is approximately15 miles to the east of the project site. The Town of Apple Valley is located two (2) miles west of the project site. The project site is located within the Town of Apple Valley's Sphere of Influence. State Route 18 (SR-18) and Interstate 15 (I-15) provide regional access to the project site. Cahuilla Road connects the southwestern corner of the project site at Laguna Seca Drive.The Hacienda at

Fairview Valley Specific Plan proposes a master-planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units (2,815 active adult units and 299 single family units), 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trails and pedestrian paths, parks, greenbelts, water features, and natural open space. In addition, the Specific Plan supports the use of solar energy, recycling, building energy efficiency standards, and water conservation. The design of the proposed project is meant to retain the area's aesthetic quality by preserving the natural topographic features that surround the valley. The proposed project is designed to incorporate the existing desert terrain by blending development in through the use of transitional landscape programs such as parkway landscaping, edge treatments along residential properties, and preserving natural drainages. The majority of the existing Joshua trees are also envisioned to be retained and become a component of the master landscape

S.4 SUMMARY OF ALTERNATIVES EVALUATED

This is a summary of project alternatives described in Section 5.0, *Alternatives to the Proposed Action*, which contains a detailed discussion. The project alternatives identified within Table S-1, *Comparison of Alternatives*, have been designed to alleviate identified environmental impacts, or were specifically requested for consideration during the preparation of the EIR.

Table S-1:
Comparison of Alternatives

Topic	Alternative 1: No Project Alternative	Alternative 2: Joshua Tree Conservation Alternative	Alternative 3: No Neighborhood Commercial Alternative
Aesthetics	<	NC	NC
Air Quality	<	>	>
Biological Resources	<	<	NC
Cultural Resources	<	<	<
Geology, Soils, and Seismicity	<	<	<
Hazards and Hazardous Materials	<	<	<
Hydrology, Drainage, and Water Quality	>	NC	NC
Land Use and Relevant Planning	<	NC	NC
Noise	<	>	<
Public Services and Utilities	<	>	>
Population and Housing	<	NC	NC
Transportation and Circulation	<	+/-	>

Notes:
> = Greater impact than that of the proposed project

< = Decreased impact from that of the proposed project
+/– = Greater impact with regard to some aspects of impact and decreased impact in other aspects
NC = No Substantial Change in impact from that of the proposed project

S.4.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

The No Project Alternative would not involve the development of the proposed project on the project site. The existing desert landscape would remain unchanged with the implementation of this alternative and no development would occur. A Specific Plan would not be adopted with the implementation of Alternative 1. The Amendment to the *General Plan* would not occur under Alternative 1. However, this alternative does not preclude future development on this site. The project site is currently zoned Rural Living (RL)-5, RL-20, and RL-40. Therefore, with the implementation of Alternative 1, the project site has the potential to be developed under the aforementioned zones in the future which would allow development of up to 210 single-family residential units.

Implementation of the No Project Alternative would reduce potential impacts when compared to the proposed project, because fewer residences would be constructed. However, the No Project Alternative would not meet the majority of the project's objectives, including establishing a long-term master planned community, implementing green and sustainable principles that are socially responsible, establishing a "green" community for the high desert, providing accessibility and services to the community, providing a variety of recreational opportunities incorporating a comprehensive trail system, park, and recreation center; and diversifying housing product types to serve a range of lifestyles and market demands.

S.4.2 ALTERNATIVE 2: JOSHUA TREE CONSERVATION ALTERNATIVE

The Joshua Tree Conservation Alternative would include the development of up to 2,318 active adult residential units and 585 single-family large lot units for a total of 2,903 residential units. This represents a reduction of 211 residential units (7 percent) when compared to the proposed project. Projects similar in nature and within the project vicinity were studied to identify an average range of dwelling units. It was determined that similar active adult community projects ranged in size from 600 dwelling units and up to 3,200 dwelling units. Thus, both the proposed project and the Joshua Tree Conservation Alternative fall within the average range. The Joshua Tree Conservation Alternative would include 306 acres of Open Space Conservation and 29 acres of Open Space Recreation for a total of 352 acres of open space. This represents an increase of 16 acres of open space (5 percent) when compared to the proposed project.

The Joshua Tree Conservation Alternative also includes the shifting of land uses in order to avoid the largest concentrations of Joshua trees. The Joshua Tree Conservation Alternative would reduce the number of impacted Joshua trees by 12 percent when compared to the proposed project. The purpose of the Joshua Tree Conservation Alternative is to reduce density while increasing the amount of conserved open space in an effort to reduce impacts to large

concentrations of Joshua trees. Additionally, the Neighborhood Commercial uses would remain at 15 acres, but the maximum allowable building area would be reduced to 150,000 square feet (compared with the proposed project's maximum of 200,000 square feet). The location of the Neighborhood Commercial land use designation would be relocated to the corner of Cahuilla Road and Sutton Way.

When compared to the proposed project, implementation of the Joshua Tree Conservation Alternative would result in greater impacts to public services and utilities, traffic, noise, and air quality. However, the Joshua Tree Conservation Alternative would result in reduced impacts to biological resources, cultural resources, geology, soils and seismicity, and hazards. The Joshua Tree Conservation Alternative would meet the majority of the project objectives.

S.4.3 ALTERNATIVE 3: NO NEIGHBORHOOD COMMERCIAL ALTERNATIVE

The No Neighborhood Commercial Alternative would include the development of up to 3,114 residential units (2,815 active adult and 299 single-family) and open space. The No Neighborhood Commercial Alternative would not include the development of the 15-acre Neighborhood Commercial uses at the corner of Laguna Seca Road and Cahuilla Road. This area would remain as open space to provide an additional buffer for the existing residences along Laguna Seca Road and Cahuilla Road. All other uses identified in the Specific Plan would be developed as part of this alternative, with the exception of the Neighborhood Commercial uses.

When compared to the proposed project, implementation of the No Neighborhood Commercial Alternative would result in greater impacts to air quality (GHG emissions), public services and utilities, and traffic. The No Neighborhood Alternative would result in reduced impacts to cultural, soils and seismicity, hazards, and noise. The No Neighborhood Commercial Alternative would meet the majority of the project objectives, with the exception of providing services to the community.

S.5 PROJECT IMPACTS AND MITIGATION MEASURES

Table S-2, *Summary of Impacts and Mitigation Measures*, lists the potentially significant project impacts identified in this Draft EIR, the mitigation measure(s) required to minimize, avoid or reduce the level of significance for each significant impact, and the significance of impacts after mitigation.

Table S-2:
Summary of Impacts and Mitigation Measures

IMPACT	MITIGATION MEASURE
3.1 AESTHETICS, LIGHT, AND GLARE	
Scenic Vistas 3.1-1 Implementation of the proposed project may have a substantial adverse effect on the scenic vista. Level of Significance: **Significant and Unavoidable Impact.**	AES-1: Visual impacts associated with the water storage tanks shall be minimized through the incorporation of one or more of the following design standards: height limitations, ridgeline protection, existing or manufactured landforms, rock groupings, screening, tank surface color, or other appropriate standards, as approved by County.
Visual Character 3.1-2 Implementation of the proposed project may substantially degrade the existing visual character or quality of the site and its surroundings. Level of Significance: **Significant and Unavoidable Impact.**	AES-2: With submittal of a tentative tract map application, the Project Applicant shall show the clustering of construction equipment in staging areas within the project site through the duration of construction. These areas shall be clustered in order to minimize visual impacts during construction.
Light and Glare 3.1-3 Implementation of the proposed project may create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. Level of Significance: **Significant and Unavoidable Impact.**	No Mitigation is Feasible
3.2 AIR QUALITY	
Construction Emissions 3.2-1 Short-term Construction activities associated with the proposed project may result in significant air pollutant emission impacts. Level of Significance: **Significant and Unavoidable Impact.**	AQ-1: The applicant shall comply with the following: a. All on-site equipment and vehicles (off-road/ on-road), shall comply with the County Diesel Exhaust Control Measures [County Development Code §83.01.040 (c)]. b. Signs shall be posted requiring all vehicle drivers and equipment

IMPACT	MITIGATION MEASURE
	operators to turn off engines when not in use. c. All engines shall not idle more than five (5) minutes in any one (1)-hour period on the project site. This includes all equipment and vehicles. d. Engines shall be maintained in good working order to reduce emissions. e. Electric, Compressed Natural Gas (CNG) and gasoline-powered equipment shall be substituted for diesel-powered equipment, where feasible. f. On-site electrical power connections shall be made available, where feasible. g. During maintenance, precautions (e.g., regular maintenance of equipment, fuel logs, etc.) shall be taken to ensure that fuel is not leaked onto the ground. Equipment maintenance records and equipment design specification data sheets shall be kept onsite during construction and subject to inspection by the MDAQMD or public works director. As a conservative measure, no reduction was taken in this analysis for the use of properly timed and tuned equipment. AQ-2: Prior to grading or land disturbing activity, the project proponent shall provide a Fugitive Dust Control Plan (DCP) in compliance with MDAQMD Rule 403.2 that describes the application of Best Management Practices (BMPs) to control fugitive

IMPACT	MITIGATION MEASURE
	dust during construction and a signed letter agreeing to include in any construction contracts/ subcontracts a requirement that project contractors adhere to the requirements of the DCP. BMP's in compliance with MDAQMD Rule 403.2 shall include but should not be limited to: a. The applicant shall use periodic watering for short-term stabilization of disturbed surface area and unpaved haul roads to minimize visible fugitive dust emissions. Watering, with complete coverage, shall occur at least three (3) times a day, preferably in the mid-morning, afternoon and after work is done for the day. Implementation of this measure is estimated to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 61 percent. b. During high wind conditions (i.e., when wind gusts exceed 25 miles per hour or, on an hourly average when wind speeds exceed 15 mph), areas with disturbed soil shall be stabilized hourly and activities on unpaved surfaces shall cease until wind speeds no longer meet the high wind conditions. c. Storage piles that are to be left in place for more than five (5) working days shall be stabilized either by spray with a non-toxic soil binder covered with plastic or revegetated. d. Storm water control systems shall be installed to prevent off-site mud

IMPACT	MITIGATION MEASURE
	deposition. e. All trucks hauling dirt away from the site onto publicly maintained paved surfaces shall be covered. f. Construction vehicle tires shall be cleaned, prior to leaving the project site. g. Rumble plates shall be installed at construction exits from dirt driveways. h. Paved access driveways and streets shall be cleaned and swept daily when there are visible signs of dirt track-out. i. Street sweeping shall be conducted daily when visible soil accumulations occur along site access roadways to remove dirt dropped or tracked-out by construction vehicles. Site access driveways and adjacent streets shall be cleaned daily, if there are visible signs of any dirt track-out at the conclusion of any workday and after street sweeping. j. Pre-watering of soils prior to clearing and trenching; and k. The applicant shall stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions.

IMPACT	MITIGATION MEASURE
	AQ-3: Contractor shall ensure use of ultra low-sulfur diesel fuel in construction equipment as required by the County per County Development Code § 83.01.040 (c)(2)(I) (diesel fuel with sulfur content of 15 ppm by weight or less). Prior to the issuance of grading permits, the applicant shall provide documentation to the County that verifies that certain equipment are exempt; that an ultra low-sulfur diesel supply has been secured; and that the construction contractor is aware that the use of ultra low-sulfur diesel is required. As a conservative measure, no reduction was taken in this analysis for the use of low-sulfur diesel fuel.
	AQ-4: Contractor shall ensure that all off-road heavy-duty construction equipment utilized during construction activity would be CARB Tier II Certified or better (to the maximum extent feasible). Prior to the issuance of grading permits, the applicant shall provide documentation to the County that verifies that certain equipment is not available as CARB Tier II certified; that applicable CARB Tier II certified equipment has been secured; and that the construction contractor is aware that the use of CARB Tier II Certified equipment is required. Implementation of this measure is estimated to reduce emissions of VOCs, NOX, PM10, and PM2.5 by approximately 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.
	AQ-5: Contractor shall utilize existing power sources (e.g., power poles) or clean-fuel generators rather than temporary power

IMPACT	MITIGATION MEASURE
	generators where feasible. AQ-6: During construction of the proposed project, only low-volatile organic compound (VOC) paints and coatings as defined in the Mojave Desert Air Quality Management District (MDAQMD) Rule 1113 shall be used. Prior to the issuance of building permits, the applicant shall provide documentation to the County that verifies coatings as defined in MDAQMD Rule 1113 have been secured; and that the construction contractor is aware that the use of low-VOC paints and coatings is required.
Operational Emissions Impacts 3.2-2 Long-term operation of the proposed project may result in significant air pollutant emissions impacts. Level of Significance: **Significant and Unavoidable Impact.**	AQ-7: The following shall be adhered to during operations of the proposed project: ▪ All transportation refrigeration units (TRU's) shall be provided electric connections, when parked on-site; and ▪ The Homeowners Association shall include a policy restricting commercial delivery truck idling to three minutes or less in the covenants, codes, and restrictions.
Air Quality Management Planning 3.2-3 Development associated with the proposed project would be consistent with regional plans. Level of Significance: **Significant and Unavoidable Impact.**	No Mitigation is Feasible
Cumulative Impacts 3.2-4 Development associated with the proposed project and related cumulative projects may result in significant air quality impacts. Level of Significance:	No Mitigation is Feasible

IMPACT	MITIGATION MEASURE
Significant and Unavoidable Impact.	
3.3 BIOLOGICAL RESOURCES	
Sensitive Species 3.3-1 Implementation of the proposed project may have substantial adverse effects, either directly or through habitat modification, 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 (CDFG) or U.S. Fish and Wildlife Service (USFWS). Level of Significance: **Less Than Significant With Mitigation.**	BIO-1: At least 30 days prior to the start of any land disturbance activities, a qualified biologist shall survey the site to determine if tortoise or burrowing owls are present. If tortoise or burrowing owls are encountered, land disturbance activities shall not commence until the biologist has implemented appropriate measures required by CDFG and USFWA to clear the site for construction. BIO-2: A biologist/monitor shall be present at the site during all land disturbance activities. BIO-3: All personnel associated with construction on the site will attend a worker education class. This class will include information regarding the Mohave ground squirrel, desert tortoise, burrowing owl, and relevant Federal and State laws and worker responsibilities (e.g. avoid touching of animals; biologist notification; etc.) when working in the Mojave Desert. BIO-4: The biologist/monitor shall remain on-call during construction activities. If desert tortoise or burrowing owls are encountered during construction, construction activities shall halt in the vicinity of the find and the biologist/monitor will be called to the site. The contractor will implement the recommendations of the biologist/monitor. BIO-5: To avoid an illegal take of active bird nests, any grubbing, brushing, or tree removal will be conducted outside the

IMPACT	MITIGATION MEASURE
	State identified nesting season (February 15 through September 1). Alternatively, the site will be evaluated by a qualified biologist prior to any ground disturbance activities to determine the presence or absence of nesting birds. If an active nest is located in the project construction area, it will be flagged and a 300 foot buffer will be placed around it. No activity will occur within the 300 foot-buffer until the birds have fledged the nest. BIO-6: The Home Owners Association shall review and approve landscape plans for residential lots and park landscape located within 100 feet of natural areas to regulate invasive plant species selection within these areas.
Riparian and Sensitive Habitat 3.3-2: Implementation of the proposed project may have 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 U.S. Fish and Wildlife Service. Level of Significance: **Less Than Significant With Mitigation.**	BIO-7: All project activities will be limited to a well-defined area to contain construction activity and ground disturbance. Prior to grading and construction activities, a qualified biologist shall clearly mark the limits of disturbance will be clearly marked with flagging, stakes, or fencing. BIO-8: Impacts to the desert dry washes or springs will require CDFG Streambed Alteration Agreement under Section 1603 and the California Fish and Game Code. BIO-9: Impacts to the desert dry washes or springs will require USACE 404 permit. BIO-10: Impacts to the desert dry washes or springs will require RWQCB 401 Certification including agency required performance standards. BIO-11: Permanent impacts to jurisdictional waters will be mitigated at a 1:1 ratio, credits may be purchased from a mitigation bank approved by the

IMPACT	MITIGATION MEASURE
	USACE, CDFG and RWQCB. BIO-12: Temporary impacts to jurisdictional waters will be mitigated in a 1:1 ratio through on site habitat restoration.
Wetlands 3.3-3: Implementation of the proposed project may have 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. **Level of Significance: Less Than Significant With Mitigation.**	Refer to Mitigation Measures BIO-7 through BIO-12. BIO-13: Delineation surveys shall be conducted for offsite improvements in early spring to determine the boundaries of offsite wetland habitat. If it is determined that wetland habitat is located within the boundaries of offsite improvements, detention basins and water tank sites would be designed to avoid any wetland habitat. In addition, if wetland habitat is found within the boundaries of the offsite improvements, the Project Applicant would be required to obtain permits from CDFG and RWQCB which would reduce impacts.
Wildlife Movement 3.3-4: Implementation of the proposed project may 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. Level of Significance: **Less Than Significant With Mitigation.**	Refer to Mitigation Measures BIO-1, BIO-3, and BIO-5.
Conflict with Adopted Plans 3.3-5: Implementation of the proposed project may conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance: **Less Than Significant With Mitigation.**	BIO-14: A County Tree Removal Permit shall be required for the removal of a Joshua tree or other regulated desert native plant. BIO-15: Joshua tree survey and report and a Joshua Tree Management Program shall be completed and submitted with a land use application for Tentative Tract Map. BIO-16: A land use application for Final Tract Map shall also include a Joshua tree

IMPACT	MITIGATION MEASURE
	survey and report. BIO-17: The required Joshua tree survey and report will be prepared by a Desert Native Plant Specialist and will include a field inventory of Joshua trees throughout the site, indicating their approximate height, age, health rating, transferability, and whether they are a clone or single-trunked tree. The report will include a plot plan showing the on-site locations of all Joshua trees and will identify any regulated desert native plants.
3.4 CULTURAL RESOURCES	
Paleontological Resources 3.4-1 Implementation of the proposed project may have a substantial adverse change in the significance of a paleontological resource or site or unique geologic feature. Level of Significance: **Less Than Significant with Mitigation**.	CUL-1: In accordance with the paleontological resource impact mitigation program (PRIMP) prepared for this proposed project , a trained paleontological monitor, working under the supervision of a qualified paleontologist, shall be present during ground-disturbing activities within the proposed project area in sediments determined likely to contain paleontological resources. The monitoring for paleontological resources shall be conducted on a half-time basis. If after a reasonable amount of excavation is done, and it is determined, by the qualified paleontologist, that the sediments in question are not fossiliferous, or have low potential to contain fossils the monitoring can be reduced. If paleontological resources are located within the proposed project, the monitoring program will increase to full-time. The monitor shall be empowered to temporarily halt or redirect construction activities to ensure avoidance of adverse impacts to

IMPACT	MITIGATION MEASURE
	paleontological resources. The monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, if fossiliferous sediments are found samples shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains. CUL-2: Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques. CUL-3: All fossils collected during the proposed project shall be prepared to a reasonable point of identification by a qualified paleonotogist. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the San Bernardino County museum repository along with the specimens. CUL-4: A report documenting the results of the monitoring and salvage activities and the significance of the fossils will be prepared and submitted to County Museum for review and approval. CUL-5: All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in the County Museum repository for permanent curation and storage.
Archaeological Resources 3.4-2 Implementation of the proposed project may have a substantial adverse change in the significance of an archaeological	CUL-6: Prior to the issuance of a grading permit, an archaeological resource monitoring plan shall be developed by a qualified archaeologist and submitted to

IMPACT	MITIGATION MEASURE
resource as defined in §15064.5. Level of Significance: **Less than Significant with Mitigation.**	County Museum for review and approval. This plan shall include a grading observation schedule to be maintained when grading occurs on and offsite in upper soils to identify and further evaluate cultural resources that may be discovered in the proposed project area. A qualified archaeologist shall be retained to attend pregrade meetings and to monitor earth moving activities, including clearing, grubbing, cutting, and trenching at the site. The archaeologist shall carefully inspect these areas to assess the potential for significant prehistoric or historic remains. If potential archaeological and historical resources are uncovered, the construction contractor shall cease grading operations in the vicinity of the find until further evaluation is undertaken to assess the discovery. Further subsurface investigation may be needed if the resource is determined unique or important for its prehistoric or historic information.
	CUL-7: For the sixteen cultural resource sites that are potentially eligible for the California Register, Phase II archaeological test excavation will be necessary: CA-SBR-725, CA-SBR-2134, CA-SBR-3401H, CA-SBR-6969, CA-SBR-6970, CA-SBR-6971, CA-SBR-6972, CA-SBR-6973, CA-SBR-6978, CA-SBR-6979, CA-SBR-12680, CA-SBR-12681, CA-SBR-12682, CA-SBR-12683, CA-SBR-12690H, CA-SBR-12691H. The first task of Phase II is to prepare a formal research design that will guide the excavation and analysis. At a minimum, the Phase II program shall include a research design, historic research, archaeological excavation, artifact collection and analysis, and a curation plan. If the

IMPACT	MITIGATION MEASURE
	Phase II excavations determine that the site contains important information, appropriate preservation options shall be implemented. CUL-8: If any of the 16 sites are determined to contain important information and preservation is not feasible (as determined by the project archaeologist), then Phase III archaeological data recovery excavation and analysis would be required. This would be a larger excavation sample and a more detailed analysis and report. Curation of all artifacts at the County Museum repository is warranted.
Historical Resources 3.4-3 Implementation of the proposed project may have a substantial adverse change in the significance of a historical resource as defined in §15064.5. Level of Significance: **Less than Significant with Mitigation.**	Refer to Mitigation Measures CUL-6 and CUL-7.
Human Remains 3.4-4 Implementation of the proposed project may disturb any human remains, including those interred outside of formal cemeteries. Level of Significance: **Less than Significant With Mitigation.**	CUL-9: If human remains are encountered on or offsite, 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

IMPACT	MITIGATION MEASURE
	NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. State *CEQA Guidelines* Section 15064.5 shall also apply if human remains are found to determine the significance of impacts on historical and unique archaeological resources.
3.5 GEOLOGY, SOILS, AND SEISMICITY	
Surface Fault Rupture 3.5-1: Implementation of the Hacienda at Fairview Valley Specific Plan may expose people or structures to potential adverse effects from surface fault rupture. Level of Significance: **Less than Significant with Mitigation.**	GEO-1: Prior to County approval of tentative tract maps within Villages C or D, a detailed Fault Hazard Investigation shall be conducted to identify potential effects of surface rupture within the project site. The Fault Hazard Investigation will determine whether previously mapped strands of the Helendale Fault are located onsite, and if they represent potential surface fault rupture hazards to future development. The Fault Hazard Investigation shall include mitigation to reduce potential impacts, including, but not limited to, a certified geologist reviewing grading plans prior to finalization and building setbacks.
Seismic Ground Shaking 3.5-2: Implementation of the proposed project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure. Level of Significance: **Less than Significant Impact**	Refer to Mitigation Measure GEO-1
Settlement & Collapse 3.5-3: Implementation of the Hacienda at Fairview Valley Specific Plan may expose people or structures to potential	GEO-2: All structures will be supported on proper foundations (and determined by a geotechnical engineer), bearing either entirely in bedrock or entirely on newly

IMPACT	MITIGATION MEASURE
substantial adverse effects from ground failure, including settlement, and collapse. Level of Significance: **Less than Significant with Mitigation**	placed engineered fill. To provide uniform support beneath foundations and mitigate the variable surficial soils and/or collapsible soils, a minimum of the upper four (4) to eleven (11) feet of existing soils will be excavated, well blended, and properly compacted as an engineered fill. Where building pads transition from alluvium to bedrock, bedrock will be over-excavated so that all foundations are underlain by a minimum of three (3) feet of engineered fill. Where removal and recompaction is conducted, the excavation will extend laterally a minimum distance of five (5) feet beyond the building footprint area or for a distance equal to the depth of fill below the foundation, whichever is greater. GEO-3: Prior to issuance of grading permits, a Design Level Geotechnical Analysis of the project site shall be performed. This analysis will provide additional analysis and refine the following preliminary recommendations: A. Foundations for small outlying structures, such as property line walls or trash enclosures, which will not be tied-in to the proposed structures, will be supported on foundations (deemed appropriate by a geotechnical engineer) bearing in properly compacted fill, competent native soils, or bedrock. Proper drainage must be maintained adjacent to foundations to minimize settlements in the soils and any foundations supported therein. B. Where engineered fill is to be placed, grading will begin with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as

IMPACT	MITIGATION MEASURE
	wood, tree stumps, and thick roots shall be exported from the site and shall not be mixed with the fill soils. Asphalt and concrete will not be mixed with the fill soils without approval by the Geotechnical Engineer. All existing underground improvements planned for removal will be completely excavated and the resulting depressions properly backfilled. C. All excavated site soils will be thoroughly blended and moisture conditioned prior to placement and compaction. All fill and backfill soils will be placed in horizontal loose layers approximately six (6) to eight (8) inches thick, moisture conditioned to at or slightly above optimum moisture content, and compacted to at least 90 percent relative compaction, as determined by ASTM Test Method D 1557-02. Where the total depth of fill exceeds 10 vertical feet, all fill below a depth of ten (10) feet should be compacted to at least 95 percent relative compaction. D. All imported fill shall be observed, tested, and approved by a qualified geologist prior to use in the building pad areas. Rocks larger than six (6) inches in diameter will not be used within the upper five (5) feet of the engineered fill pad, and rock larger then 12 inches will not be used in any engineered fill. Minimum Resistivity, pH, Chloride and Water-Soluble Sulfate testing will be required for import soils designated for use in the building footprint areas. Import soils, if used in the building area, must be placed uniformly across the building pad.

IMPACT	MITIGATION MEASURE
	E. The surficial soil has a potential for hydro-consolidation. The remedial grading of the loose dry soil and the use of an appropriate foundation system (deemed appropriate by a geotechnical engineer) will mitigate the potential for hydro-consolidation. These recommendations shall be verified, refined, and approved by the County Geologist prior to approval of grading plans and issuance of grading permits for the project.
Soil Erosion 3.5-5: Implementation of the Hacienda at Fairview Valley Specific Plan may result in substantial wind or water soil erosion or the loss of topsoil, either on- or off-site. Level of Significance: **Less than Significant with Mitigation**	GEO-4: All manufactured slopes shall be planted, drained and maintained to reduce erosion. Due to the very granular nature of the majority of the site soils, consideration shall be given to landscaping to reduce the potential for surficial erosion per landscape standards of County Ordinance 83.10.070 and 83.10.080. GEO-5: Drainage control structures will be installed to intercept water flow emanating from the canyon drainages and directed to proper drain improvements.
3.6 HAZARDS AND HAZARDOUS MATERIALS	
Hazardous Materials 3.6-1 Implementation of the proposed project may create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Level of Significance: **Less than Significant with Mitigation.**	HAZ-1: Abandon and/or remove all existing wells (water, dry well, etc.) in accordance with applicable laws and regulations. HAZ-2: During development of the site, if suspect trash and debris, chemical odors, stained soil, tanks, or other potential environmental concerns associated with the former Old Mine Illegal Dumpsite are encountered, areas of concern will be assessed by a

IMPACT	MITIGATION MEASURE
	qualified professional and handled accordingly, as follows:. • Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area; • Notify the County Engineer; • Secure the areas as directed by the County Engineer; and • Notify the County's Hazardous waste/Materials Coordinator. HAZ-3: Containers of chemical products (i.e. fuel, grease, waste oil) that may be utilized and/or stored by contractors at the project site, will be stored in tightly sealed containers to minimize the risk of spill events. HAZ-4: Trash and debris shall be removed from the project site and disposed in accordance with applicable laws and regulations.
Hazardous Materials Sites 3.6-4 The proposed project may 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 create a significant hazard to the public or the environment. Level of Significance: **Less than Significant with Mitigation**.	Refer to Mitigation Measures HAZ-2 and HAZ-4
3.7 HYDROLOGY, DRAINAGE, AND WATER QUALITY-SECTION PENDING	
Water Quality Standards 3.7-1 Implementation of the proposed project may violate water quality standards or	HYD-1: Prior to issuance of a Tentative Map, a Runoff Management Plan must be completed which will:

IMPACT	MITIGATION MEASURE
waste discharge requirements. Level of Significance: **Less than Significant Impact with Mitigation**	A. Analyze the project impacts under a full range of storms including but not limited to the 2-, 5-, 10-, 25-, and 100-year. B. Compare both existing and proposed peak flowrates and volumes (for each existing discharge point) to determine the project's impact to downstream natural channel stability and downstream water quality impacts. C. Analyze stream stability to determine impacts and appropriate mitigation measures to onsite and downstream natural channels. D. Integrate flood control, stream stability, and stormwater quality mitigation into a comprehensive plan. HYD-2: If the Runoff Management Plan produces flowrates greater than the current County downstream Master Plan, the applicants will provide updates to the Master Plan including, but not limited to: increased flowrates, increased facility sizes, changes in sediment regimes, and impacts to all downstream landowners. HYD-3: The applicants will prepare a preliminary Water Quality Management Plan (WQMP) prior to issuance of the Tentative Map. HYD-4: Prior to issuance of grading permits, applicants shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and obtain a Notice of Intent (NOI) to comply with obtaining coverage under the National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit from the State Water Resources

IMPACT	MITIGATION MEASURE
	Control Board. Evidence that this has been obtained (i.e., a copy of the Waste Discharger's Identification Number) shall be submitted to the County for coverage under the NPDES General Construction Permit. HYD-5: Prior to issuance of grading permits, the applicant shall submit to the County Engineer for approval, a WQMP, including a project description and identifying Best Management Practices (BMP's) that will be used onsite to reduce pollutants into the storm drain system to the maximum extent practicable, including the use of Continuous Deflective Separation (CDS) units at the end of each storm drain line. The WQMP shall identify the structural and non-structural measures consistent with the County's adopted requirements. HYD-6: Prior to issuance of grading permits, the Public Works Department must review and approve the final engineering of the grading and drainage plans. HYD-7: Prior to approval of the final project plans and specifications, the applicant shall provide a detailed hydrology report that specifies the expected stormwater volumes, projected peak storage capacity or temporary basins, and percolation characteristics of soil. The hydrology report shall demonstrate that adequate stormwater conveyance and capacity is available in onsite or offsite basins. The hydrology report would be subject to review and approval by the County Engineer.
Groundwater Supplies 3.7-2 Implementation of the proposed project	HYD-8: Native and other appropriate drought-tolerant plant materials shall be used in all non-turf areas of project landscaping,

IMPACT	MITIGATION MEASURE
may 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). Level of Significance: **Less Than Significant Impact with Mitigation**.	and inorganic landscape materials, including boulders, cobble, gravels and crushed granitic materials shall be used throughout the landscape to help naturalize the design, provide additional structure and pattern to the landscape, and eliminate the need for water in these areas. HYD-9: Large expanses of lawn and other non-functional water-intensive landscaped areas shall be prohibited. Turf areas shall be kept to the minimum necessary and consistent with the functional and aesthetic needs of the project. HYD-10: Onsite irrigation shall consist of an efficient system that avoids or minimizes runoff and maximizes effective watering of plant roots. Drip emitters, moisture detectors and computer-controlled (ET controller) systems shall also be installed to increase irrigation efficiency. HYD-11: The use of low-flush toilets, water-conserving shower heads, appliances, and faucets shall be required in conformance with Section 17921.3 of the Health and Safety Code, Title 20, California Code of Regulations Section 1601(b), and applicable sections of Title 24 of the State Code. HYD-12: Project development shall anticipate the availability of tertiary-treated water and install conveyance and delivery pipelines to those open space areas that will utilize this resource.
Drainage Patterns 3.7-3 Implementation of the proposed project may 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	Refer to Mitigation Measures HYD-1 through HYD-7

IMPACT	MITIGATION MEASURE
which would result in substantial erosion or siltation on- or off-site. Level of Significance: **Less Than Significant Impact with Mitigation.**	
Surface Runoff 3.7-4 Implementation of the proposed project may 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 that would result in flooding on- or off-site. Level of Significance: **Less Than Significant Impact with Mitigation.**	Refer to Mitigation Measures HYD-1 through HYD-7
Runoff Water 3.7-5 Implementation of the proposed project may 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. Level of Significance: **Less Than Significant Impact with Mitigation.**	Refer to Mitigation Measures HYD-1 through HYD-7
Water Quality 3.7-6 Implementation of the proposed project may otherwise substantially degrade water quality. Level of Significance: **Less Than Significant Impact with Mitigation.**	Refer to Mitigation Measures HYD-1 through HYD-7
Flooding 3.7-9 Implementation of the proposed project may 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. Level of Significance: **Less Than Significant Impact with Mitigation.**	HYD-13 During Final Tract Map preparation, when final water tank locations are determined, Applicant shall provide a grading and improvement plan which provides a safe outlet and route of discharge for water inundation in the unlikely event of water tank failure; these shall be prepared by a licensed engineer in coordination with Apple Valley Ranchos (AVR) Water Company

IMPACT	MITIGATION MEASURE
	and subject to County Public Works approval.
3.8 LAND USE AND RELEVANT PLANNING	
Divide a Community 3.8-1 Implementation of the proposed project may physically divide an established community. Level of Significance: **Less Than Significant Impact.**	No Mitigation is Required
3.9 NOISE	
Short-Term Construction Noise Impacts 3.9-1 Grading and construction within the area may result in significant temporary noise impacts to nearby noise sensitive receivers. Level of Significance: **Less Than Significant with Mitigation.**	NOI-1 • During all project site excavation and grading on-site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site. • The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction. • The construction contractor shall limit all construction-related activities that would result in high noise levels according to the construction hours to be determined by County staff consistent with normal weekday working hours (e.g. 7a.m. to 7p.m. Monday thru Friday). • The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

IMPACT	MITIGATION MEASURE
	Haul trucks shall access the site using the route furthest from sensitive land uses or residential dwellings.
Long-Term Noise Impacts 3.9-4 The proposed project may result in a significant increase in ambient noise levels. Level of Significance: **Less Than Significant with Mitigation.**	NOI-2 Prior to the issuance of building permits, a noise analysis shall be required when grading plans are available. The grading plan shall include the location of stationary noise sources, such as loading docks, air conditioning units, trash compactors, and drive-thru lanes. The noise analysis shall evaluate the potential noise impacts to the existing and proposed noise sensitive homes near the retail areas of the project. The noise analysis will require design features and practices to ensure that noise levels will be reduced to acceptable levels. NOI-3 Prior to the issuance of building permits, a final noise study shall be completed to determine specific noise mitigation measures to ensure the proposed residential units meets the County's exterior and interior noise standards.
3.10 PUBLIC SERVICES AND UTILITIES	
Fire Protection Services 3.10-1 Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 fire protection services. Level of Significance: **Less Than Significant Impact with**	PSU-1 Prior to the development of any combustible construction, the development of each phase shall have two (2) points of paved access, or as otherwise approved by the Fire District, for fire and other emergency equipment, and routes of escape which will safely handle evacuations. Each of these access points shall provide an independent route into the area in which the development is located. PSU-2 Unless otherwise approved by the Fire Chief, on-site fire protection water systems shall be designed to be looped

IMPACT	MITIGATION MEASURE
Mitigation.	and fed from two (2) remote points. PSU-3 The start of construction of the proposed Public Safety Facility shall occur prior to the issuance of no more than 2,300 Certificates of Occupancy by the County. The completion of construction of the Fire Station shall occur within 12 months from start of construction.
Police Protection Services 3.10-2 Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 police protection services. Level of Significance: **Less Than Significant Impact with Mitigation.**	PSU-4 The construction of the proposed Public Safety Facility shall occur prior to the issuance of no more than 2,300 Certificates of Occupancy by the County. The completion of construction of the Public Safety Facility shall occur within 12 months from start of construction.
Natural Gas Services 3.10-7 Implementation of the proposed project may result in an increase in demand necessitating the expansion of natural gas services. Level of Significance: **Less Than Significant with Mitigation.**	PSU-5 The Project Applicant shall coordinate with Southwest Gas Company regarding the proper extension of natural gas services to the project site. This shall include the development of detailed plans for utility placement and the project's participation in energy conservation programs provided by Southwest Gas Company. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with Southwest Gas Company shall be provided to the County's Land Use Services Department for review and approval prior to the

IMPACT	MITIGATION MEASURE
	issuance of grading permits. Coordination with Southwest Gas Company will ensure that existing natural gas pipelines and services would not be impacted by implementation of the proposed project.
Electricity Services 3.10-8 Implementation of the proposed project may result in an increase in demand necessitating the expansion of electricity services. Level of Significance: **Less Than Significant with Mitigation.**	PSU-6 The Project Applicant shall coordinate with Southern California Edison regarding the proper extension of electrical services to the project site. This shall include the development of detailed plans for utility placement and the project's participation in energy conservation programs provided by Southern California Edison. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with Southern California Edison shall be provided to the County's Land Use Services Department for review and approval prior to the issuance of grading permits. Coordination with Southern California Edison will ensure that existing electrical lines and services would not be impacted by implementation of the proposed project.
Water Supply 3.10-9 Implementation of the proposed project may result in insufficient water supplies to serve the project from existing entitlements and resources. Level of Significance: **Significant and Unavoidable Impact.**	Refer to Mitigation Measures HYD-5 through HYD-9 PSU-7 Prior to or concurrent with County approval of any subdivision or land use permit, the applicant shall submit a master landscape plan, plant palette, and irrigation plan, which demonstrates and quantifies irrigation demand associated with the landscape plan, and shall be consistent with the Specific Plan. Apple Valley Ranchos (AVR) Water Company shall review and

IMPACT	MITIGATION MEASURE
	provide comments on the irrigation master plan to the County prior to issuance of water services. PSU-8 The applicant shall be required to pay all applicable charges pursuant to AVR's tariffs, approved and in effect at that time, including Supplemental Water Acquisition Fees.
Wastewater Treatment 3.10-13 Implementation of the proposed project may result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. Level of Significance: **Less Than Significant with Mitigation.**	PSU-9 Prior to issuance of building permits, the applicant shall submit detailed wastewater system plans to the County Service Area for approval. The wastewater treatment conveyance facilities shall be designed in accordance with County standards and sized to accommodate wastewater flows for the proposed project.
3.12 TRANSPORTATION AND CIRCULATION	
Local Intersections 3.12-1 Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections). Level of Significance: **Significant and Unavoidable Impact.**	TRA-1 Applicants of development within the project area shall be subject to their proportionate fair share of roadway improvements to Dale Evans Parkway/Corwin Road intersection, South Dale Evans Parkway/Waalew Road intersection, North Dale Evans Parkway/Waalew Road intersection, Dale Evans Parkway/Thunderbird Road intersection, Navajo Road/Waalew Road intersection, Navajo Road/Thunderbird Road intersection, Central Road/Waalew Road intersection, Central Road/Otoe Road – Cahuilla Road intersection, Central Road/Thunderbird Road intersection, Central Road/Standing Rock Road intersection, Central Road/Esaws Avenue intersection, Central

IMPACT		MITIGATION MEASURE
		Road/Ottowa Road intersection, Central Road/Nisqually Road intersection, Joshua Road/Cahuilla Road intersection, Joshua Road/Standing Rock Road intersection, Laguna Seca Drive/Cahuilla Road intersection as identified in Table 3.12-6: Local Intersection Mitigation Summary for Interim Year (2020) With Project. The finance plan shall be approved by City Council prior to issuance of any building permit for the Hacienda at Fairview Valley development. The Town of Apple Valley shall be responsible for the construction of these intersection and roadway improvements.
3.12-1a	**Dale Evans Parkway/Corwin Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact.**	Refer to Mitigation Measure TRA-1.
3.12-1b	**South Dale Evans Parkway/Waalew Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-11.
3.12-1c	**North Dale Evans Parkway/Waalew Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1.
3.12-1d	**Dale Evans Parkway/Thunderbird Road.** Implementation of the proposed	Refer to Mitigation Measure TRA-1

IMPACT		MITIGATION MEASURE
	project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance **Significant and Unavoidable Impact**	
3.12-1e	**Navajo Road/Waalew Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
3.12-1f	**Navajo Road/Thunderbird Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
3.12-1g	**Central Road/Waalew Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1.
3.12-1h	**Central Road/Otoe Road – Cahuilla Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1.
3.12-1i	**Central Road/Thunderbird Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact.**	Refer to Mitigation Measure TRA-1.

IMPACT		MITIGATION MEASURE
3.12-1j	**Central Road/Standing Rock Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1.
3.12-1k	**Central Road/Esaws Avenue.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
3.12-1l	**Central Road/Ottawa Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
3.12-1m	**Central Road/Nisqually Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
3.12-1n	**Joshua Road/Cahuilla Road – Otoe Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Less Than Significant with Mitigation.**	Refer to Mitigation Measure TRA-1
3.12-1o	**Joshua Road/Standing Rock Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street	Refer to Mitigation Measure TRA-1

IMPACT	MITIGATION MEASURE
system. Level of Significance: **Less Than Significant with Mitigation.**	
3.12-1p **Laguna Seca Drive/Cahuilla Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-1
Regional Intersections 3.12-2 Implementation of the proposed project would exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. Level of Significance: **Significant and Unavoidable Impact**	TRA-2 Applicants of development within the project area shall be subject to their proportionate fair share of roadway improvements to Navajo Road/Highway 18 intersection, Joshua Road/Highway 18 intersection, Highway 18/Bear Valley Road intersection, and Milpas Drive/Highway 18 intersection, Dale Evans Parkway/High Desert Corridor EB Ramps (future intersection), Dale Evans Parkway/High Desert Corridor WB Ramps (future intersection), High Desert Corridor NB Ramps/Waalew Road (future intersection), High Desert Corridor SB Ramps/Waalew Road (future intersection), High Desert Corridor NB Ramps/Standing Rock Avenue (future intersection), High Desert Corridor SB Ramps/Standing Rock Avenue (future intersection), Highway 18/High Desert Corridor WB Ramps (future intersection), Highway 18/High Desert Corridor EB Ramps (future intersection), Central Road/High Desert Corridor WB Ramps (future intersection), and Central Road/High Desert Corridor EB Ramps (future intersection) as identified in *Table 3.12-7: Regional Intersection Mitigation Summary for Interim Year (2020) and Horizon Year 2030 With Project Scenarios.* The finance plan shall be approved by County

IMPACT		MITIGATION MEASURE
		Council prior to issuance of any building permit for the Hacienda at Fairview Valley development. The Town of Apple Valley shall be responsible for the construction of these intersection and roadway improvements.
3.12-2a	**Navajo Road/Highway 18.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2b	**Joshua Road/Highway 18.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Less Than Significant with Mitigation**	Refer to Mitigation Measure TRA-2
3.12-2c	**Highway 18/Bear Valley Road.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Less Than Significant with Mitigation**	Refer to Mitigation Measure TRA-2
3.12-2d	**Milpas Drive/Highway 18.** Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. Level of Significance: **Less Than Significant with Mitigation**	Refer to Mitigation Measure TRA-2
3.12-2e	**Dale Evans Parkway/High Desert Corridor EB Ramps (future intersection)** Development of the proposed project would generate unacceptable levels of service at the future intersection of Dale Evans Parkway (NS) at High Desert	Refer to Mitigation Measure TRA-2

IMPACT		MITIGATION MEASURE
	Corridor EB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	
3.12-2f	**Dale Evans Parkway/High Desert Corridor WB Ramps (future intersection)** Development of the proposed project would generate unacceptable levels of service at the future intersection of Dale Evans Parkway (NS) at High Desert Corridor WB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2g	**High Desert Corridor NB Ramps/Waalew Road (future intersection).** Development of the proposed project would generate unacceptable levels of service at the future intersection of High Desert Corridor NB Ramps (NS) at Waalew Road (EW). Level of Significance **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2h	**High Desert Corridor SB Ramps/Waalew Road (future intersection).** Development of the proposed project would generate unacceptable levels of service at the intersection of High Desert Corridor SB Ramps (NS) at Waalew Road (EW). Level of Significance: **Significant and Unavoidable Impact**.	Refer to Mitigation Measure TRA-2
3.12-2i	**High Desert Corridor NB Ramps/Standing Rock Avenue (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of High Desert Corridor NB Ramps (NS) at Standing Rock Avenue (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2

IMPACT		MITIGATION MEASURE
3.12-2j	**High Desert Corridor SB Ramps/Standing Rock Avenue (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of High Desert Corridor SB Ramps (NS) at Standing Rock Avenue (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2k	**Highway 18/High Desert Corridor WB Ramps (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of Highway 18 (NS) at High Desert Corridor WB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2l	**Highway 18/High Desert Corridor EB Ramps (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of Highway 18 (NS) at High Desert Corridor EB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2m	**Central Road/High Desert Corridor WB Ramps (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of Central Road (NS) at High Desert Corridor WB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2
3.12-2n	**Central Road/High Desert Corridor EB Ramps (future intersection).** Development of the SP would generate unacceptable levels of service at the intersection of Central Road (NS) at High Desert Corridor EB Ramps (EW). Level of Significance: **Significant and Unavoidable Impact**	Refer to Mitigation Measure TRA-2

IMPACT	MITIGATION MEASURE	
Cumulative Scenario Onsite Intersection Improvements	TRA-3:	The proposed project would ensure adequate circulation with the implementation of the improvements in Table 3.12-11: *Cumulative Onsite Improvements*, below, as well as ensuring that sight distance at each project access roadway should be reviewed with respect to standard Caltrans/ County of San Bernardino sight distance standards.
Cumulative Scenario Offsite Intersection Improvements	TRA-4:	All necessary offsite roadway improvements will be funded in part by the developer's proportionate fair share.

S.5.1 MITIGATION MONITORING

CEQA requires public agencies to set up monitoring and reporting programs to ensure compliance with mitigation measures adopted or made as a condition of project approval in order to mitigate or avoid the significant environmental effects identified in environmental impact reports. A Mitigation Monitoring and Reporting Program (MMRP) incorporating the mitigation measures set forth in this EIR will be prepared and approved by County of San Bernardino decision-makers concurrent with adoption of the findings of this EIR and prior to approval of the proposed project.

S.6 CUMULATIVE IMPACTS

State *CEQA Guidelines* Section 15130 requires that an EIR include a discussion of cumulative impacts "…when the project's incremental effect is cumulatively considerable, as defined in [State *CEQA Guidelines* Section 15065(a)(3)]." Cumulatively considerable effects are those "…incremental effects of an individual project… when viewed in conjunction with the effects of past projects, the effects of other current projects, and the effects of probable future projects" [State *CEQA Guidelines* Section 15065(c)]. A lead agency need not consider an incremental effect as "cumulatively considerable," but does need to briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

Cumulative impacts of the proposed project combined with past, present, and reasonably foreseeable future projects are evaluated in Chapter 3 of this EIR. The assessment of cumulative impacts takes into consideration existing conditions, plus the proposed project, in combination

with the long-term buildout projections as outlined in the County of San Bernardino *General Plan* (*General Plan*).

An analysis of cumulative impacts determined that with implementation of mitigation measures, the following cumulatively significant environmental impacts would occur: Aesthetics; Air Quality, including impacts to global climate change; Biological Resources; and Traffic and Circulation.

S.7 SIGNIFICANT UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Section 15126.2(b) of the *CEQA Guidelines* requires an EIR to "Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance." Section 3.0 of this document analyzes the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts to a level of less-than significant, where feasible.

This EIR concludes that the proposed project would result in the following significant and unavoidable adverse environmental impacts:

- Impacting the scenic vista;
- Impacting the visual character of the surroundings;
- Increasing the amount of light and glare;
- Generating short-term construction emissions;
- Generating long-term operation emissions;
- Impacting air quality management planning;
- Creating cumulative air quality impacts; and
- Impacting local and regional intersections

CHAPTER 1.0
INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE EIR

According to Section 15121 of the State CEQA Guidelines, an EIR is an informational document that is written to inform public agency decision-makers and the public of the significant environmental effects of a proposed project. The purpose of this project-level Draft Environmental Impact Report (Draft EIR) for the proposed Hacienda at Fairview Valley Specific Plan ("project") is to review the existing conditions at and in the vicinity of the project site, identify and analyze the potential environmental impacts, and suggest feasible mitigation measures to reduce significant adverse environmental effects. The potential impacts include both temporary construction-related effects and the long-term effects of buildout of the project.

The intent of this Draft EIR is to conservatively address the potential project impacts to avoid or minimize the need for future environmental documentation of the project by utilizing the most current and detailed plans, technical studies, and related information available. This Draft EIR will be used by the County of San Bernardino (County), other responsible agencies, interested parties, and the general public to evaluate the potential environmental impacts of the proposed project (refer to Section 2.7, *Required Permits and Approvals*, in Section 2.0, *Project Description*, of this Draft EIR for a list of responsible agencies and project approvals).

1.2 COMPLIANCE WITH CEQA

The County of San Bernardino (County) is the lead agency under CEQA, and is responsible for preparing an EIR for the Hacienda at Fairview Valley Specific Plan (State Clearinghouse No. 2008111009). The County determined that the project may result in significant adverse environmental effects and therefore requires an EIR. This determination is based on the preliminary review of available project information and the Initial Study prepared for the project. This Draft EIR has been prepared in conformance with CEQA (California Public Resources Code Section 21000 et seq.), California CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), and the rules, regulations, and procedures for implementation of CEQA as adopted by the County. The principal CEQA Guidelines sections governing content of this document are Sections 15120 through 15132, Content of an EIR.

The Draft EIR evaluates the issues and impacts identified as potentially significant in the Initial Study and Notice of Preparation (NOP), in addition to issues identified in the public scoping meeting (which was held on November 18, 2008 at Rancho Verde Elementary School, 14334 Pioneer Road, Apple Valley, CA 92307) NOP comment letters (refer to Appendix A, *Notice of Preparation, Public Comments, and Initial Study*), and information obtained throughout the EIR process. As part of the review process, the Draft EIR is subject to a 45-day public review period by responsible and concerned agencies and interested parties. Following this period, responses

to comments received will be prepared. The Final EIR will consist of the Draft EIR (or a revision of the draft), comments received on the Draft EIR, and responses to those comments.

As a means of reducing significant impacts where feasible, mitigation measures are provided, which may be adopted as Conditions of Approval. In addition, this EIR is the primary reference document in the formulation and implementation of a mitigation monitoring program for the project.

The County of San Bernardino, which has the principal responsibility for processing and approving the project, and other public agencies (refer to Section 2.7, *Required Permits and Approvals*) may use the information in this Draft EIR, along with other information that may be presented during the CEQA process, as part of their decision-making process. Environmental impacts are not always mitigable to a level considered less than significant; in those cases, impacts are considered significant unavoidable impacts. In accordance with Section 15093(b) of the State CEQA Guidelines, if a public agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project, based on the Final EIR and any other information in the public record for the project. This is termed, per Section 15093 of the State CEQA Guidelines, a "Statement of Overriding Considerations."

This Draft EIR analyzes the environmental effects of the project to the degree of specificity appropriate to the current proposed actions, as required by Section 15146 of the State CEQA Guidelines. The analysis considers the activities associated with the project, to determine the short-term and long-term effects associated with their implementation. This EIR discusses both the direct and indirect impacts of this project, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. CEQA requires preparation of an objective, full disclosure document to inform agency decision-makers and the general public of the direct and indirect environmental effects of the proposed action; provide mitigation measures to avoid or substantially lessen the significant effects; and identify and evaluate reasonable alternatives that could avoid or substantially lessen one (1) or more of such effects.

1.3 SCOPE OF EIR

An Initial Study and NOP were completed for the proposed project to determine the potential environmental impacts of the project (refer to Appendix A) (State Clearinghouse No. 2008111009). The County of San Bernardino distributed the Initial Study and NOP, which was filed with the State of California Office of Planning and Research on November 3, 2008. The NOP comment period closed on December 3, 2008, following the State-mandated 30-day public review period.

This EIR addresses potential significant impacts in the following areas as identified during the EIR preparation process, including public and agency comments received on the NOP, as well

as comments received from the public during separate scoping meetings. In addition to CEQA-mandated discussions, environmental issues evaluated within this EIR are as follows:

- Aesthetics, Light, and Glare (3.1)
- Air Quality –including Climate Change and Greenhouse Gases (3.2)
- Biological Resources (3.3)
- Cultural and Historic Resources (3.4)
- Geology, Soils, and Seismicity (3.5)
- Hazards and Hazardous Materials (3.6)
- Hydrology, Drainage, and Water Quality (3.7)
- Land Use and Planning (3.8)
- Noise (3.9)
- Public Services and Utilities (3.10)
- Population and Housing (3.11)
- Transportation and Traffic (3.12)

Based on CEQA significance threshold criteria, the effects of the project have been categorized as either "no impact", "less than significant", "less than significant impact with mitigation" or "significant unavoidable impact" (refer to Section 3.0, *Environmental Analysis*). Mitigation measures are recommended for potentially significant impacts, to avoid or lessen impacts. In the event the project results in significant impacts after implementation of mitigation measures, the decision-makers are able to approve the project based on a "Statement of Overriding Considerations." This determination would require the decision-makers to provide a discussion of how the benefits of the project outweigh identified unavoidable impacts. The *California Environmental Quality Act (CEQA) Guidelines* provide in part the following:

a) CEQA requires that the decision-maker balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the project. If the benefits of the project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

b) Where the decision of the public agency allows the occurrence of significant effects that are identified in the Final EIR but are not mitigated, the agency must state in writing the reasons to support its action based on the Final EIR and/or other information in the record. This statement may be necessary if the agency also makes the finding under Section 15091 (a)(2) or (a)(3) of the CEQA Guidelines.

c) If an agency makes a Statement of Overriding Considerations, the statement should be included in the record of the project approval and should be mentioned in the Notice of Determination (Section 15093 of the CEQA Guidelines).

1.4 CONTENT OF THE EIR

All of the environmental issues determined to have potential impacts by the Initial Study and the issues identified for inclusion in the EIR during the public review period have been incorporated into this EIR. For each environmental issue, the EIR first describes the environmental setting (current conditions), then discusses and analyzes the potential related impacts that could be caused as a result of project implementation. For each potential significant impact, the EIR specifies ways to mitigate the impact. In addition, the EIR contains a description of the project, description of the environmental setting, identification of cumulative impacts, and an analysis of alternatives to the project.

The Project Applicant and/or County shall implement all mitigation measures of the EIR found to be feasible by decision-makers, related to any impact found to be potentially significant. project design features are incorporated into the discussion of mitigation measures in that they will be required to be implemented, or have an environmental equivalent. "Environmental equivalent" shall mean any measure or procedure, subject to the approval of the County that would have the same or superior result as the project design feature, and would have the same or superior effect on the environment. The County Planning Division, in conjunction with any appropriate agencies or other County departments, shall determine the adequacy of any proposed environmental equivalent. Any costs associated with information or environmental documentation required to determine environmental equivalency shall be borne by the project Applicant. As with mitigation measures, the County would ensure compliance with an environmental equivalent through the mitigation monitoring process.

1.5 USE AND ORGANIZATION OF THE EIR

It is the intent of this EIR to enable the County of San Bernardino and other responsible agencies and interested parties to evaluate the environmental impacts of the Hacienda at Fairview Valley Specific Plan project (refer to Section 2.7, *Required Permits and Approvals*, for a list of responsible agencies having permit approval responsibilities for the project). It is the intent of this EIR to provide environmental clearance for the project, such that the County and other agencies will be able to utilize this EIR to satisfy CEQA requirements for project-related permits or approvals.

The Draft EIR is organized into 10 sections as well as an Executive Summary, as follows:

- **Section S,** *Executive Summary*, provides a brief project description and summary of the environmental impacts, and the mitigation measures for each impact.
- **Section 1.0,** *Introduction and Purpose*, provides CEQA compliance information.
- **Section 2.0,** *Project Description*, provides the project location, background and history, environmental setting (including on and offsite use), project characteristics, project objectives, project phasing, and permits and approvals that are required for the project.

Section 3.0, *Environmental Analysis*, discusses the existing conditions for each environmental issue area. This section describes the methodology for significance determination; identifies short-term and long-term environmental impacts of the project; recommends feasible mitigation measures to reduce the significance of impacts; and identifies areas of unavoidable significant impacts after mitigation. This section also discusses those impacts by the combination of the proposed project and other projects in the vicinity.

- **Section 4.0,** *Growth Inducement*, discusses the significant environmental changes that result from the project, should it be implemented; growth-inducing impacts; and cumulative impacts associated with the County's *General Plan* buildout and concurrent surrounding projects.
- **Section 5.0,** *Alternatives to the Proposed Action*, describes alternatives to the project, some of which may be considered during project deliberations.
- **Section 6.0,** *Significant Irreversible Environmental Changes,* discusses the significant irreversible environmental changes that would be involved in the proposed project should it be implemented. These changes include, for example, uses of nonrenewable resources during the initial and continued phases of the project, because a large commitment of such resources makes their removal or nonuse thereafter unlikely; primary and secondary impacts of a project that would generally commit future generations to similar uses.
- **Section 7.0,** *Effects Found Not To Be Significant*, explains potential impacts that were determined not to be significant in the Expanded NOP.
- **Section 8.0,** *Significant Unavoidable Environmental Changes,* describes significant impacts, including those which can be mitigated but not reduced to a level of insignificance.

- **Section 9.0,** *Organizations and Persons Consulted*, identifies the co-lead agencies, preparers of the EIR, and all federal, state, and local agencies, and other organizations, and individuals consulted during the preparation of the EIR.

- **Section 10.0,** *Bibliography*, identifies reference sources utilized for the EIR.

1.6 PUBLIC SCOPING PROCESS

Pursuant to state and local CEQA Guidelines, the County initiated the project environmental review process and distributed the NOP on November 3, 2008 for a 30-day public review period; refer to Appendix A, *Notice of Preparation, Public Comments, and Initial Study*. A public scoping meeting was held to discuss the proposed project on November 18, 2008 at Rancho Verde Elementary School, located at 14334 Pioneer Road, Apple Valley, CA 92307.

Issues identified during the scoping meeting and in the comment letters included:

1.6.1 Aesthetics

Impacts to views of Granite and Fairview Mountains; disturbance of views of desert landscape; light and glare; placement of neighborhood commercial uses on corner of Cahuilla and Laguna Seca;

1.6.2 Air Quality

Impacts to air quality;

1.6.3 Biological Resources

Impacts to various types of plants and wildlife; impacts to wildlife movement and corridors; vegetation;

1.6.4 Cultural Resources

Impacts to cultural resources;

1.6.5 Geology, Soils, and Seismicity

Impacts to geology of the area;

1.6.6 Hazards and Hazardous Materials

Impacts regarding hazards; dumping of trash and hazardous materials;

1.6.7 Hydrology, Drainage, and Water Quality

Increase in runoff from more impervious surfaces; effects of the project on water quality due to increased population and more septic tanks; lack of sewer and wastewater services; pollution of aquifer; adequacy of drainage on site; flooding impacts;

1.6.8 Land Use and Relevant Planning

Density of project; incompatibility with surrounding land uses; loss of open space;

1.6.9 Noise

Increase in noise from traffic;

1.6.10 Public Services and Utilities

Increase in demand of public services and utilities; water supply; impacts to recreation; impacts to hunting; increase in crime; emergency and fire services; impacts to local schools;

1.6.11 Population and Housing

Increase in population; no need for housing in area;

1.6.12 Transportation and Circulation

Increase in traffic both locally and regionally;

The County determined that the project may result in significant adverse effects and therefore requires an EIR. This Draft EIR includes pertinent NOP response data and other information obtained throughout the EIR preparation process. As part of the review process, the Draft EIR is subject to a 45-day review period by the public, State Clearinghouse, responsible and trustee agencies, and other interested parties. Following the review period of this Draft EIR, written responses to comments will be prepared, a copy of which is required to be provided to any responsible or trustee agency commenting on the Draft EIR, at least 10 days before EIR certification. The Final EIR will consist of the Draft EIR, any revisions to the Draft, responses to comments addressing any additional concerns of responsible agencies or reviewing parties.

1.7 TERMINOLOGY USED IN THE EIR

- The "project" is defined as an activity, which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

- An "environmental impact" is a direct or indirect effect caused by the project that would constitute a physical change to the existing natural or human-made conditions in the area affected by the project. The following determinations are made for each environmental impact analyzed within the EIR:
  - "No impact" would result in no environmental impact and no mitigation would be required.
  - A "less than significant" impact or an impact that is "not significant" would cause no substantial adverse or potentially substantial changes in the environment; as such, no mitigation would be required.
  - A "potentially significant" or "significant" impact could or would cause a substantial adverse change in the environment. In this case, an impact has been identified that, although potentially significant, can be avoided or reduced to less than significant levels through mitigation. Such mitigation may be either project design features (that have been or will be incorporated into the project at the time of project approval) or existing external requirements, such as County codes and ordinances, engineering and design requirements (e.g., the Uniform Building Code), and standard regulations set by various regional, state, and federal agencies.
  - A "significant and unavoidable" impact is one that would cause a substantial adverse change in the environment and could not be avoided if the project is implemented; mitigation may be recommended, but it would not reduce the impact to a less than significant level.
  - A "beneficial impact" is a positive contribution or improvement (by the project) to the physical conditions in the area affected by the project.
- "Mitigation measures" are defined in the State CEQA Guidelines Section 15370 as:
  - Avoiding the impact altogether by not taking a certain action or part(s) of an action;
  - Minimizing the impact by limiting the degree or magnitude of the action and its implementation;
  - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and,

- Compensating for the impact by replacing or providing substitute resources or environments.

1.8 INCORPORATION BY REFERENCE

In accordance with CEQA Guidelines, Section 15150, this EIR incorporates by reference the following documents:

County of San Bernardino (County) *General Plan* (adopted March 13, 2007). The County *General Plan* is a long-range policy-planning document that defines the framework by which the County's physical and economic resources are to be managed over time. The goals and policies contained in the *General Plan* are provided to guide the County's decision-makers. The seven (7) State-mandated elements are included in the *General Plan*, including Land Use, Circulation, Housing, Conservation, Open Space, Safety, and Noise. In addition, the County of San Bernardino has chosen to address Economic Development, which is an optional element. Information contained within the *General Plan* was incorporated herein, because it is the primary source for County policies, objectives, and countywide planning analysis.

County of San Bernardino *General Plan* Final EIR (SCH # 2005101038) (February 2007). The *General Plan* EIR was prepared to assess the potential environmental impacts associated with the proposed *General Plan*. The EIR summarizes potential environmental impacts associated with implementation of the County's *General Plan*, including growth inducing and cumulative impacts. Information from the *General Plan* EIR is incorporated herein, since it contains intensive information pertaining to impacts associated with the implementation of County policies and objectives.

Apple Valley *General Plan* Update (adopted 1998). The Town of Apple Valley *General Plan* is the Town's long-term policy guide for the physical, economic, and environmental growth and renewal of the Town. The Apple Valley *General Plan* includes goals, policies, and objectives that are based on an assessment of current and future needs, as well as available resources. The *General Plan* is the principal tool for the Town to use when evaluating public and private building projects and municipal service improvements.

This page was intentionally left blank

CHAPTER 2.0

PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed Hacienda at Fairview Valley site is located in western San Bernardino County, within the Fairview Valley area in the sphere of influence of the Town of Apple Valley, which is immediately west of the proposed project site. The City of Barstow is located approximately 25 miles north of the project site, and the City of San Bernardino is located approximately 35 miles south of the project site. Lucerne Valley is approximately 15 miles to the east of the project site. The Town of Apple Valley is located directly adjacent to the project site; refer to Exhibit 2.0-1, *Regional Location Map.* The project site is located within the Town of Apple Valley's Sphere of Influence. State Route 18 (SR-18) and Interstate 15 (I-15) provide regional access to the project site. Cahuilla Road connects the southwestern corner of the project site at Laguna Seca Drive. Additionally, the project site can be accessed via Oldenburg Road; refer to Exhibit 2.0-2, *Project Vicinity Map.*

2.2 ENVIRONMENTAL SETTING

The Hacienda at Fairview Valley Specific Plan, hereinafter referred to as the "project," encompasses approximately 1,557 acres in Fairview Valley. Fairview Valley is located north and west of the Granite Mountains. Within the valley, between Fairview Mountain and the Granite Mountain Range, much of the topography is flat, with less than 5 percent fall. Elevations onsite generally decrease from the southeast to the north and west. The Granite Mountains have steep slopes and rocky terrain; refer to Exhibit 2.0-3, *Site Aerial Photograph.* The project site is bisected by Fairview Creek, which traverses in a northeast to southwest direction parallel to Cahuilla Road. A second drainage course extends from the southeast and merges into Fairview Creek. According to the National Hydrology Dataset, there are three (3) ephemeral streams identified in nearby watersheds that bisect the project site. In general, the streams flow in a northwesterly direction and join at Fairview Creek.

The project site is located in the Mojave Desert geomorphic province. Alluvium sediment consisting of unconsolidated, poorly sorted stream, fan, and basin deposits underlay the project site. Onsite soils generally consist of Cajon Sand, Helendale Loamy Sand, and Wasco Sandy Loam. The Helendale-South Lockheart Fault traverses the eastern portion of the project site and is designated as an Alquist-Priolo Fault Zone[1].

The project site is located in the high desert region, which has an arid climate. Temperatures range from 32 degrees to over 100 degrees Fahrenheit. Prevailing winds typically come from

[1] *Preliminary Geotechnical Investigation: Granite Valley Residential Development, Fairview Valley Area, California* for Granite Valley, LP by Geocon Inc. on June 8, 2007

the northwest. Rainfall in the project area is seasonal, with the largest amounts of rainfall occurring during the fall through spring months. Occasional thunderstorms occur during the summer months that generate short-term rainstorms with occasional flooding.

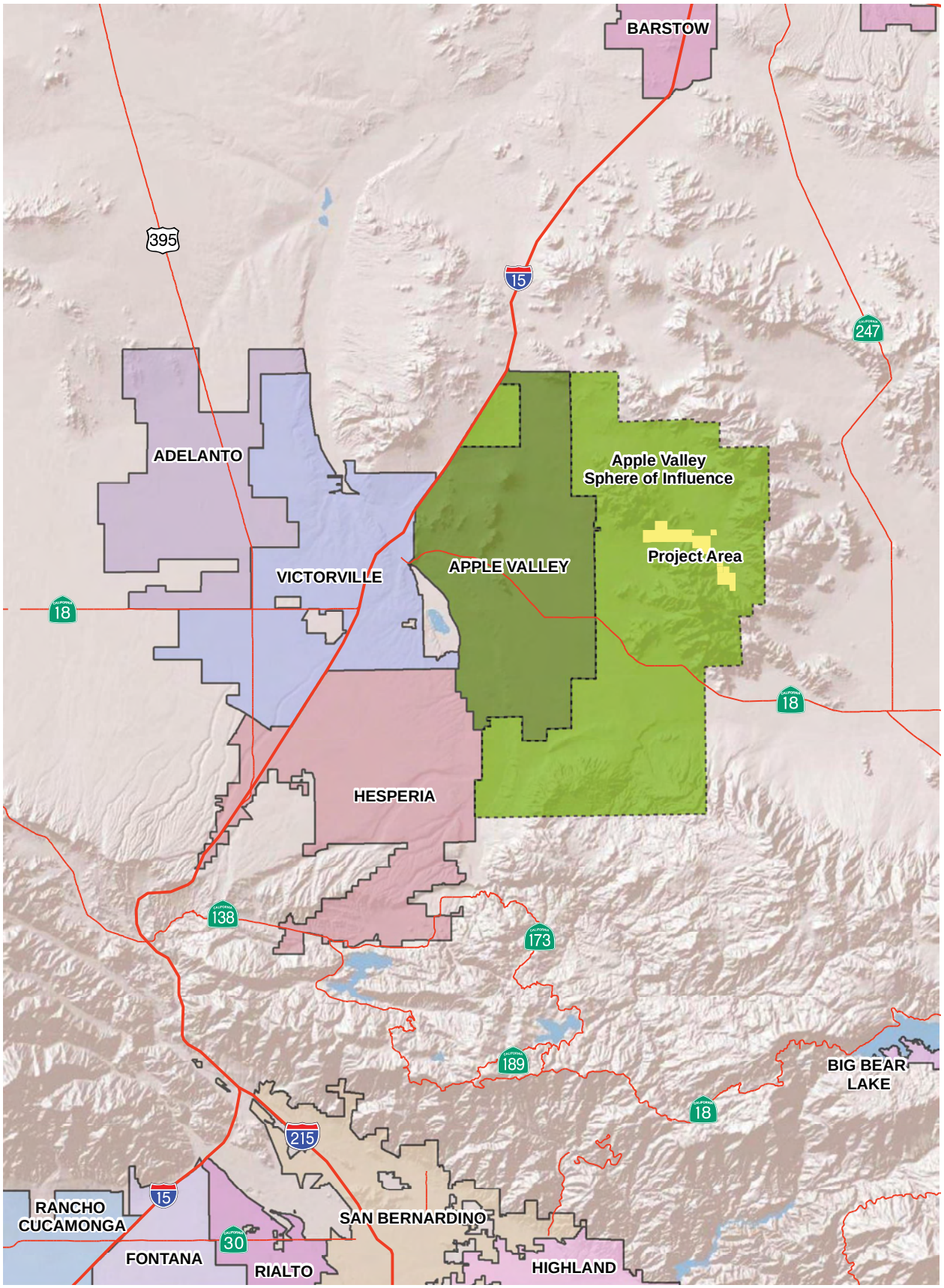
The project site consists primarily of undisturbed vacant land. Joshua trees are located throughout the project site. Historic ranching/grazing activities, current off-road vehicle use and illegal trash dumping have disturbed portions of the project site. The primary vegetation community is Mojave creosote bush scrub, which comprises approximately 99 percent of the vegetation cover. Approximately one (1) percent of the project site is covered by non-native species.

The project site is currently designated as Rural Living (RL) in the County of San Bernardino *General Plan*. The RL designation allows for one (1) dwelling unit per five (5) acres (RL-5) in the western portion of the site to one (1) dwelling unit per forty (40) acres (RL-40) in the most easterly portion. The areas surrounding the project site are designated as RL and Resource Conservation (RC) in the County's *General Plan*. Refer to Exhibit 2.0-4, *General Plan Land Use Designation Map*.

The environmental setting relative to each resource area is addressed in greater detail in Chapter 3. The baseline setting used for purposes of environmental analysis was the environmental setting at the time that the Notice of Preparation was released (November 3, 2008).

2.3 BACKGROUND AND HISTORY

Prior to the 20th century, Victor Valley's main activities included cattle ranching and mining. During the late 1800s and early 1900's, this area experienced an agricultural boom. During the boom, large federal land grants encouraged homesteaders to occupy and improve thousands of acres of land. The project site has historically been used for homestead purposes. Remnants of several historic homesteads scatter the project site, including homesteads by Trendell, Amaral, Atlantic and Pacific Railroad, and Southern Pacific Railroad. Federal homestead requirements during this period included a minimum of five (5) years of residence and cultivation. Evidence of prior activity on the project site includes dilapidated water conveyance systems including wells, windmill foundations, canals, small reservoirs, and water troughs.



RBF CONSULTING

NOT TO SCALE

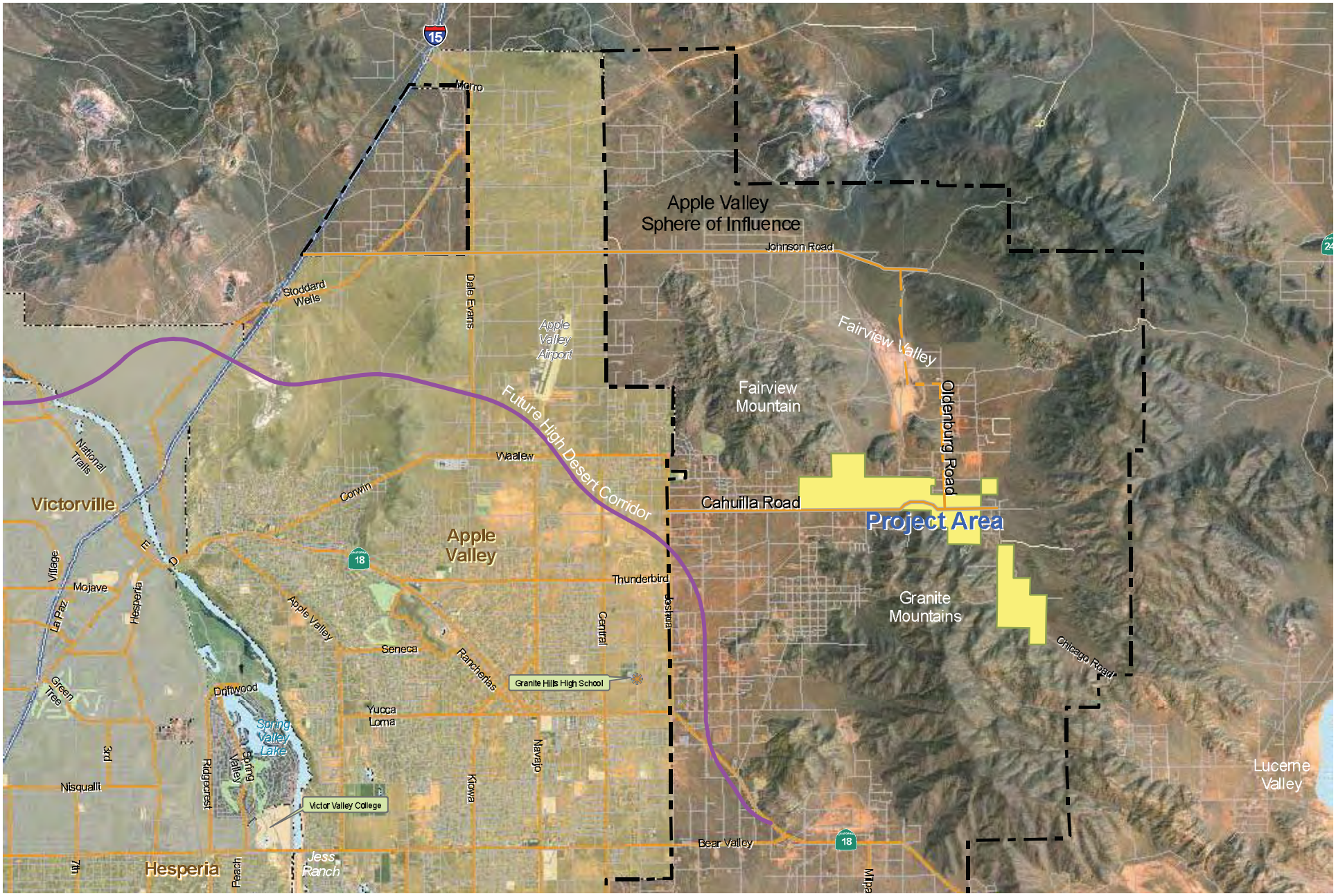
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

REGIONAL LOCATION MAP

Exhibit 2.0-1

This page was intentionally left blank



RBF CONSULTING

NOT TO SCALE

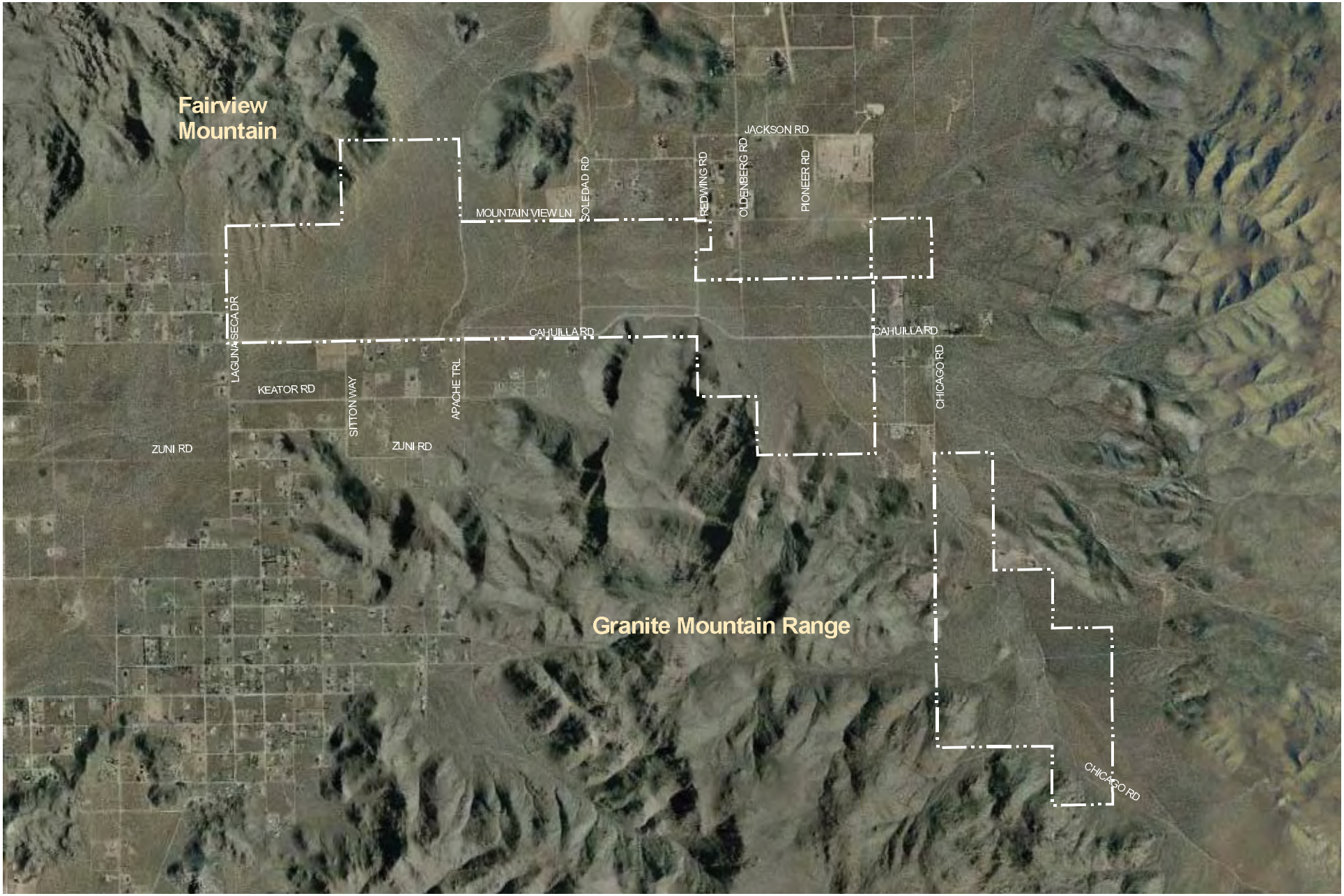
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

PROJECT VICINITY MAP

Exhibit 2.0-2

This page was intentionally left blank



RBF CONSULTING

NOT TO SCALE

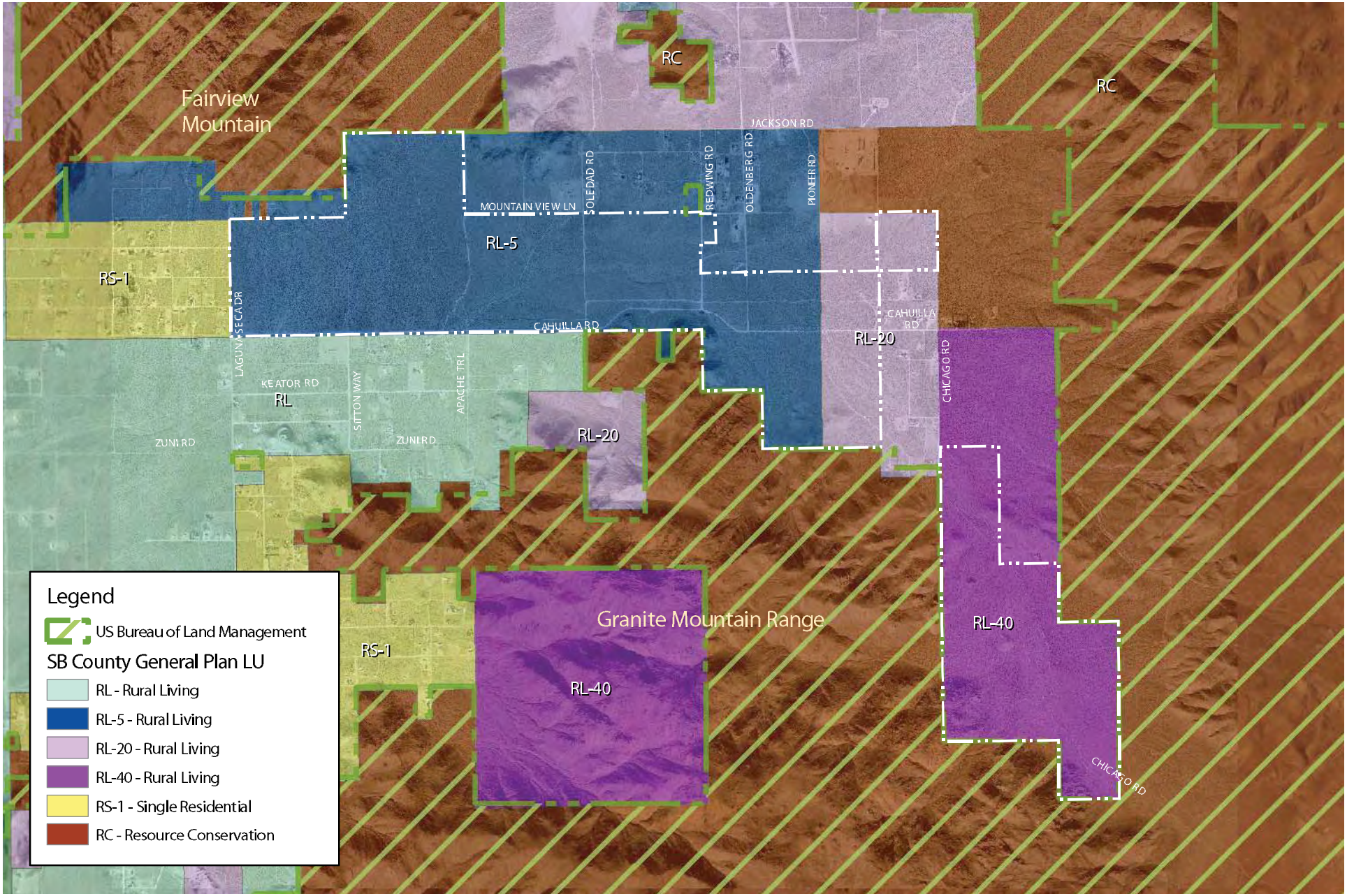
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

SITE AERIAL PHOTOGRAPH

Exhibit 2.0-3

This page was intentionally left blank



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

EXISTING GENERAL PLAN LAND USE DESIGNATION MAP

Exhibit 2.0-4

This page was intentionally left blank

2.4 PROJECT OBJECTIVES

The vision for the proposed project is to create a multi-generational community that supports active adult and equestrian friendly lifestyles. The residential areas have been planned to maximize passive and active solar energy and to support other efficiencies for land uses and building orientation; transportation and alternative modes of transit; reclaimed water and xeriscape; and decreased energy consumption and greenhouse gas emissions. In addition, the Specific Plan supports the use of solar energy, recycling, energy conservation building standards, and water conservation. The design of the proposed project is meant to retain the area's aesthetic quality by preserving the natural topographic features that surround the valley. The proposed project is designed to incorporate the existing desert terrain by blending development in through the use of transitional landscape programs such as parkway landscaping, edge treatments along residential properties, and preserving natural drainages. The majority of the existing Joshua trees are also proposed to be retained on-site and become a component of the master landscape plan.

The objectives of the proposed project include the following:

- Maintain semi-rural character and promote a resort lifestyle that is compatible with the surrounding area;
- Establish community and support high desert lifestyles;
- Support natural features and resources;
- Establish a long-term master planned community;
- Implement green and sustainable principles that are socially responsible;
- Establish a "green" community for the high desert;
- Provide accessibility and services to the community;
- Provide a variety of recreational opportunities incorporating a comprehensive trail system, park, and recreation center; and
- Diversify housing product types to serve a range of lifestyles and market demands.

2.5 PROJECT DESCRIPTION

The "project" addressed in this Draft Environmental Impact Report (EIR) includes all aspects of construction and implementation of the proposed "Hacienda at Fairview Valley Specific Plan" and associated entitlements, permits, and agreements noted in Section 2.7, *Required Permits and*

Approvals. The project information contained in this Draft EIR is based on associated applications submitted for the proposed project, the Draft Hacienda at Fairview Valley Specific Plan, associated project technical studies, and related references (refer to Section 1.8, *Incorporation by Reference,* and Section 10.0, *Bibliography*).

2.5.1 Hacienda at Fairview Valley Specific Plan

The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units (2,815 active adult and 299 single-family), 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space. Table 2.0-1, *Land Use Summary*, identifies land uses proposed as part of the Specific Plan. In addition, the project proposes two (2) overlay districts to allow opportunity for expanding uses, including a Golf Course Overlay and an Equestrian Overlay. The project is divided into four (4) Villages, as discussed below.

Table 2.0-1
Land Use Summary Table

Land Use (1)	Village A			Village B			Village C			Village D			Total		
	Acres (4)	Planned DUs	Max DUs	Acres (4)	Planned DUs	Max DUs	Acres (4)	Planned DUs	Max DUs	Acres (4)	Planned DUs	Max DUs	Acres	Planned Dus (2)	Max Dus (3)
Rural Living (RL-2)	0	0	0	44	16	19	29	11	13	0	0	0	73	27	32
Estate (RS-1)	29	18	22	40	25	30	65	41	49	92	58	70	226	142	170
Equestrian (R-EQ)	0	0	0	25	16	19	0	0	0	22	14	17	47	30	36
Very Low (VL)	35	37	44	16	17	20	43	46	55	0	0	0	94	100	120
Low (L)	140	421	505	48	144	173	23	69	83	77	231	277	288	865	1038
Low- Medium (LM)	89	357	428	20	80	96	39	156	187	48	192	230	196	785	942
Medium (M)	84	460	552	0	0	0	12	66	79	50	274	329	146	800	960
Medium-High (MH)	17	111	133	0	0	0	39	254	305	0	0	0	56	365	438
Residential Total	394	1404		193	298		250	643		289	769		1126	3114	
Commercial (CN)	15			0			0			0			15		
Commercial Total	15			0			0			0			15		
Parks (OS-R)	20			9			4			5			38		
Water Feature	11			0			7			0			18		
Open Space (OS-C)	50			43			65			122			280		
Open Space Total	81			52			76			127			336		
Circulation (Road Area)	21			17			19			23			80		
Circulation Total	21			17			19			23			80		
Project Total	511	1404		262	298		345	643		439	769		1557	3114	

(1) Exact configurations for area designations such as retention/detention basins, fire station(s), library, and open space preservation will be determined during tract map processing.

(2) These unit counts are the planned number of units that could be developed within each Land Use Designation of the Specific Plan Area.

(3) Total permitted dwelling units within any Residential Land Use may be lesser or greater than the "Planned DU's" shown, if: a) "Maximum DU's" are not exceeded for any individual land use designation and b) overall Specific Plan Area does not exceed 3,114 units.

(4) Acreage may adjust in each Planning Area ± 20% for each land use as long as the total area and maximum amount of dwellings does not exceed 3,114 dwellings

2.5.2 Land Use Concept

The Conceptual Land Use Plan aims to create opportunities for diversified housing and to create a community where multi-generational housing and lifestyles are available. The Conceptual Land Use Plan provides eight (8) residential land use categories including large lot residential areas, standard lot residential areas, active adult areas, and opportunities for equestrians. In addition, two (2) overlay districts would allow opportunity for expanding land uses, including an Equestrian Overlay and a Golf Course Overlay. Circulation and infrastructure to support uses are also incorporated in the Land Use Plan. The Specific Plan would accommodate approximately 3,114 residential units (2,815 active adult and 299 single family), 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. These land uses would be linked together through a network of multi-use trails and pedestrian paths, parks, greenbelts, water features, and natural open space. Refer to Exhibit 2.0-5, *Conceptual Land Use Plan*. The project is divided into four (4) Villages, as discussed below.

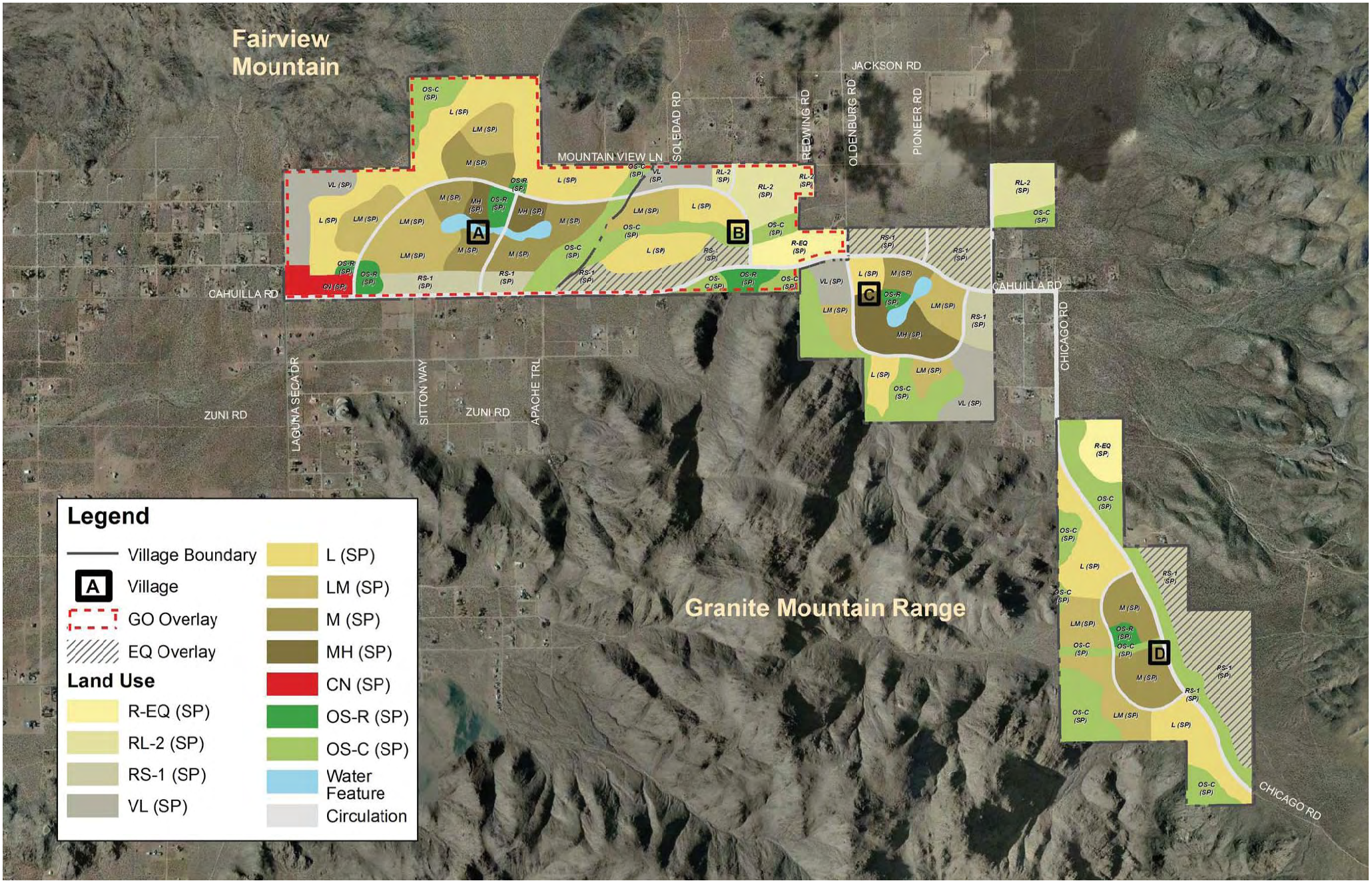
2.5.3 Residential Land Uses

The Specific Plan proposes the development of eight (8) residential land uses, as described below:

Rural Living (RL-2): The RL-2 designation would consist of large single-family lots 2 acres or greater. This designation would provide an opportunity for rural living and a transition to adjacent existing development and future land uses. This designation would support the boarding of horses.

Estate Residential (RS-1): The RS-1 designation would consist of large single-family lots 1 acre or greater. This designation would provide an estate feel along major public roads and a transition to adjacent existing development. The RS-1 designation is planned for residents who would like a large lot but does not allow horse boarding. The RS-1 designation in portions of the four (4) villages could also have an Equestrian Overlay (EO) designation that permits the boarding of horses.

Equestrian Estate Residential (R-EQ): The R-EQ designation would consist of larger single-family lots 1 acre or greater. This designation would provide an estate feel along major public roads and a transition to adjacent existing development. This land use designation is planned to support equestrian activities and would be zoned to solely permit equestrian residential development.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL LAND USE PLAN

Exhibit 2.0-5

This page was intentionally left blank

Very Low Residential (VL): The VL designation would consist of single-family lots 32,500 square feet (sf) or greater. This designation would be planned to have an estate ranch neighborhood theme and would not support the boarding of horses.

In addition to the residential uses listed above, the following land use designations are planned to support the Active Adult neighborhood lifestyle and would be deed restricted to support an age-restricted community for occupancy by persons 55 years of age and older as defined and regulated by the Housing for Older Persons Act (HOPA) within the Federal Fair Housing Act (FHA) in effect at time of final map approvals.

Low Residential (L): The L designation would consist of single-family lots 7,000 sf and greater. Lots in this designation would be deed restricted for active adult use.

Low-Medium Residential (LM): The LM designation would consist of single-family lots 6,000 sf and greater. The lots in this designation would be deed restricted for active adult use.

Medium Residential (M): The M designation would consist of single-family lots 5,000 sf and greater. The lots in this designation would be deed restricted for active adult use.

Medium-High Residential (MH): The MH designation would consist of single-family lots 4,000 sf and greater. The MH designation could also include single-family attached units. The lots in this designation would be deed restricted for active adult use.

2.5.4 Retail/Commercial Uses

The Retail/Commercial land use designation would allow for the development of a neighborhood scale shopping center or a cluster of retail/commercial and medical uses that would serve the proposed project and neighboring residential communities. Potential uses could include grocery store, retail, office, day care, and restaurant uses. This area could also include the development of public facilities, including a fire station, sheriff station, and/or post office annex to serve the project site and neighboring residential communities.

Commercial (CN): The CN designation would consist of approximately 15 acres of land (the majority of which is located in Village A near Laguna Seca Drive and Cahuilla Road to serve as a community shopping area. A public safety facility is also proposed on approximately two (2) acres of land within the Commercial designation. Within the public safety facility, space would be allocated for a future fire station and sheriff sub-station.

2.5.5 Open Space

Two (2) types of Open Space are designated to support the Land Use Plan:

Open Space Recreation (OS-R): This designation would support active and passive recreation areas such as gardens, lawn bowling, putting greens, sports courts, clubhouses, and pools.

Open Space Conservation (OS-C): This designation would support areas that have been identified to maintain a more natural environment in order to effectively transition land uses into the Granite Mountains and Fairview Creek. The intent is to integrate the natural environment into each Village. Most areas would designate existing natural features or support transitional areas from the community toward more sensitive natural areas. This designation also supports detention basin locations that function for flood control but remain as open space. Desert-oriented landscaping would support the transition into natural areas.

Refer to Exhibit 2.0-6, *Conceptual Open Space, Parks, and Trails Plan.*

2.5.6 Overlay Districts

Two (2) overlay districts are designed to provide expanded flexibility in the overall Village concept by diversifying recreational opportunities and lifestyles. Descriptions of the overlay districts are as follows:

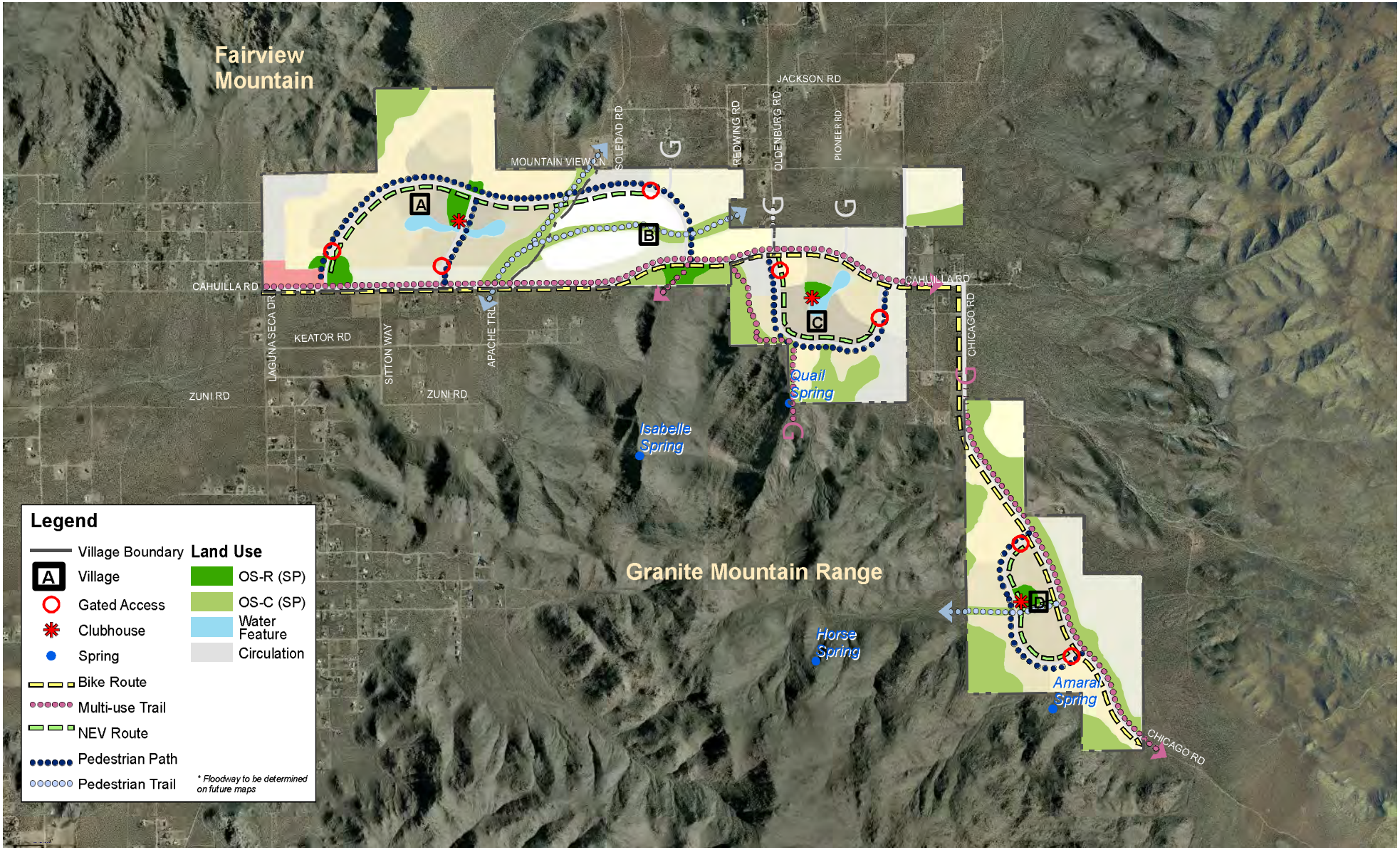
Equestrian Overlay (EQ): The EQ Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The EQ Overlay would be located solely on estate residential lots one (1) acre or greater in portions of Village B, C, and D. The EQ Overlay is designed to allow equestrian residential development adjacent to the smaller lot active adult development when such development meets additional development standards related to setbacks, fencing and trails. The EQ Overlay would allow up to three (3) horses per residential lot.

Golf Overlay (GO): The GO Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B.

2.5.7 Village Land Use Plan

The Specific Plan provides for the overall implementation of a master-planned residential community that is comprised of four (4) villages. Each village is defined by a cohesive theme and provides a mix of residential and non-residential uses, distinctive amenities, and community facilities. In addition, each village contains a Village Commons area that acts as a focal point for the village. The following provides a description of each of the four (4) villages:

Village A: Village A consists of approximately 511 acres in the western portion of the project site. Village A is generally bounded by Cahuilla Road to the south, Laguna Seca Drive to the west, and Mountain View Lane to the north.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL OPEN SPACE, PARKS, AND TRAILS PLAN

Exhibit 2.0-6

This page was intentionally left blank

Village A would include a 15-acre neighborhood commercial center that would support both the project site and the communities in the immediate vicinity. Village A would also include the Golf Course Overlay designation. Housing types proposed in Village A include Estate Ranches, Very Low, and Active Adult residences. In addition, there are two (2) open space conservation areas within Village A. A total of 81 acres of Open Space, including Open Space Conservation (located at the foot of Fairview Mountain and along Fairview Creek) and Open Space Recreation (private parks) are also proposed as part of Village A. One (1) transit stop would be located in Village A, along Cahuilla Road. It is anticipated that approximately 1,404 residential units would be developed as part of Village A.

Village B: Village B consists of approximately 262 acres in the central portion of the project site. Village B is generally bound by Mountain View Road to the north, Cahuilla Road to the south, and Oldenburg Road to the east.

Village B would contain mostly large lot land uses, including Rural Living, Estate Ranch, Equestrian Estate, and Very Low residential uses. Village B also includes an Equestrian Overlay, which would provide the option for the boarding of horses on Estate Ranch lots where this type of use is normally not allowed. In addition, Village B includes a Golf Course Overlay. Active adult uses as well as open space are also proposed as part of Village B. Fairview Valley Equestrian Park, a public recreational amenity, is proposed in Village B, in addition to an equestrian trails loop. A total of 52 acres of Open Space, including Open Space Conservation (adjacent to Fairview Creek and Granite Mountains) and Open Space Recreation (public and private parks) is also proposed as part of Village B. It is anticipated that approximately 298 residential units would be developed as part of Village B.

Village C: Village C consists of approximately 345 acres in the central and eastern portion of the project site. Village C is generally bounded by Oldenburg Road to the west, Cahuilla Road to the north, residential areas to the east, and Bureau of Land Management (BLM) property to the south and southwest.

Village C contains a variety of designations. Residential uses include Rural Living, Estate Ranch, Equestrian Estate, and Very Low Residential designations. An Equestrian Overlay is also proposed as part of Village C. Active adult uses are also proposed, including Low, Low Medium, Medium, and Medium High land uses. A total of 76 acres of Open Space, including Open Space Conservation (to protect the foothills of the Granite Mountains, Quail Spring, and to areas adjacent to BLM land) and Open Space Recreation (private parks). One (1) transit stop is located in Village C. It is anticipated that approximately 643 residential units would be developed as part of Village C.

Village D: Village D consists of approximately 439 acres in the southeastern portion of the project site. The Granite Mountains are located west of Village D, and undeveloped property is

located to the east. Village D is located approximately one (1) quarter (1/4) mile from the southeastern corner of Village C. This village contains Estate Ranch and Equestrian Estate residential uses. In addition, active adult uses are also proposed, including a mix of Low, Low Medium, and Medium residential land use designations. An Equestrian Overlay is proposed in Village D. A total of 127 acres of Open Space, including Open Space Conservation areas (to protect the foothills of the Granite Mountains, along drainage courses and areas adjacent to BLM land) and Open Space Recreation (private parks) is also proposed. One (1) transit stop would be located within Village D. It is anticipated that approximately 769 residential units would be developed as part of Village D.

2.5.8 Parks

The project proposes a total of 38 acres of recreational open space, 18 acres of water features, and 280 acres of conserved open space. The project would include four (4) private park areas, known as Village Commons, with one located in each village. Fairview Valley Equestrian Park (located in Village B) would be a public, equestrian-friendly facility and staging area for a trailhead into the Quail Spring area and Granite Mountains.

Village A: Village A would include a private community park in the Village Commons area. The park location is central to the village and is anticipated to be the focal point of the community.

Village B: Village B would include a public park site at the mouth of the arroyo near Quail Spring and at the base of the Granite Mountains. Fairview Valley Equestrian Park is planned to be equestrian friendly and would support nearby riding areas. It is envisioned that neighbors and residents would be able to visit the park and gain access to the Granite Mountains through a trailhead.

Village C: Village C is planned to have a private park location central to the village and supports the Village Commons clubhouse or similar uses. The intent would be to provide an active and social recreation area for the village. Village C would also include a private trailhead at Quail Spring Park for access into the Granite Mountains.

Village D: Village D would include a private park area that is central to the village and would support clubhouse facilities and similar recreational outdoor activities. It is also anticipated that a public trail head supporting access to Horse Springs and Amaral Springs would be located near the park.

2.5.9 Project Circulation

Onsite Circulation: The Circulation Plan consists of a road network to serve the proposed project, including each of the four (4) villages. The Circulation Plan also includes a network of multi-use trails and bikeways.

The Circulation Plan provides continuous looped road access points and two (2) points of entry to accommodate emergency access. Speed limits for collector and local roads are planned for 35 miles per hour to allow neighborhood electric vehicles (NEV) to share the roadway with automobiles to decrease the need for automobile use for local trips. All roadways within the project site are within the jurisdiction of San Bernardino County and in the Town of Apple Valley's Sphere of Influence. Traffic movement generated by the proposed project is planned for street designs that support and meet Level of Service Criteria under San Bernardino County specifications.

Refer to Exhibit 2.0-7, *Conceptual Circulation Plan*, and Exhibit 2.0-8, *Street Sections*.

Vehicular Circulation System

The Vehicular Circulation System is a hierarchy of roads including an 88-foot Secondary Highway, 66-foot Collector Street, 60-foot Local Street, and 50-foot Local Short Streets. The streets are designed to meet County of San Bernardino *General Plan* standards with internal design variations to accommodate trail locations and street design within the project site.

Cahuilla Road, Oldenburg Road, and Chicago Road (all currently unimproved within the project site) are expected to be Secondary Highways or collector level streets. Improvements to these facilities would occur in a manner that is consistent with phasing, as determined to be required during the development review process for each building phase within each village.

Secondary Highways

Cahuilla Road and Chicago Road are currently designated as secondary highways. Secondary highways are designed to carry regionally oriented traffic between points of ingress/egress for the proposed project. Secondary highways have an 88-foot right-of-way (ROW), with two (2) lanes in each direction and a painted or landscaped median. A Class II bike lane[2] may be accommodated on both sides of Cahuilla Road and Chicago Road through modified roadway design. The path of travel would include a painted bike lane, travel lane, painted or landscaped median/turn lane, and travel lane.

[2] A Class II Bike Lane is defined as a lane set aside in City streets for exclusive bicycle use.

Collector Streets

Collector Streets are designed primarily to collect traffic from residential neighborhoods and distribute to secondary highways. Collector streets have a 66-foot ROW with one (1) travel lane in each direction.

Local Streets

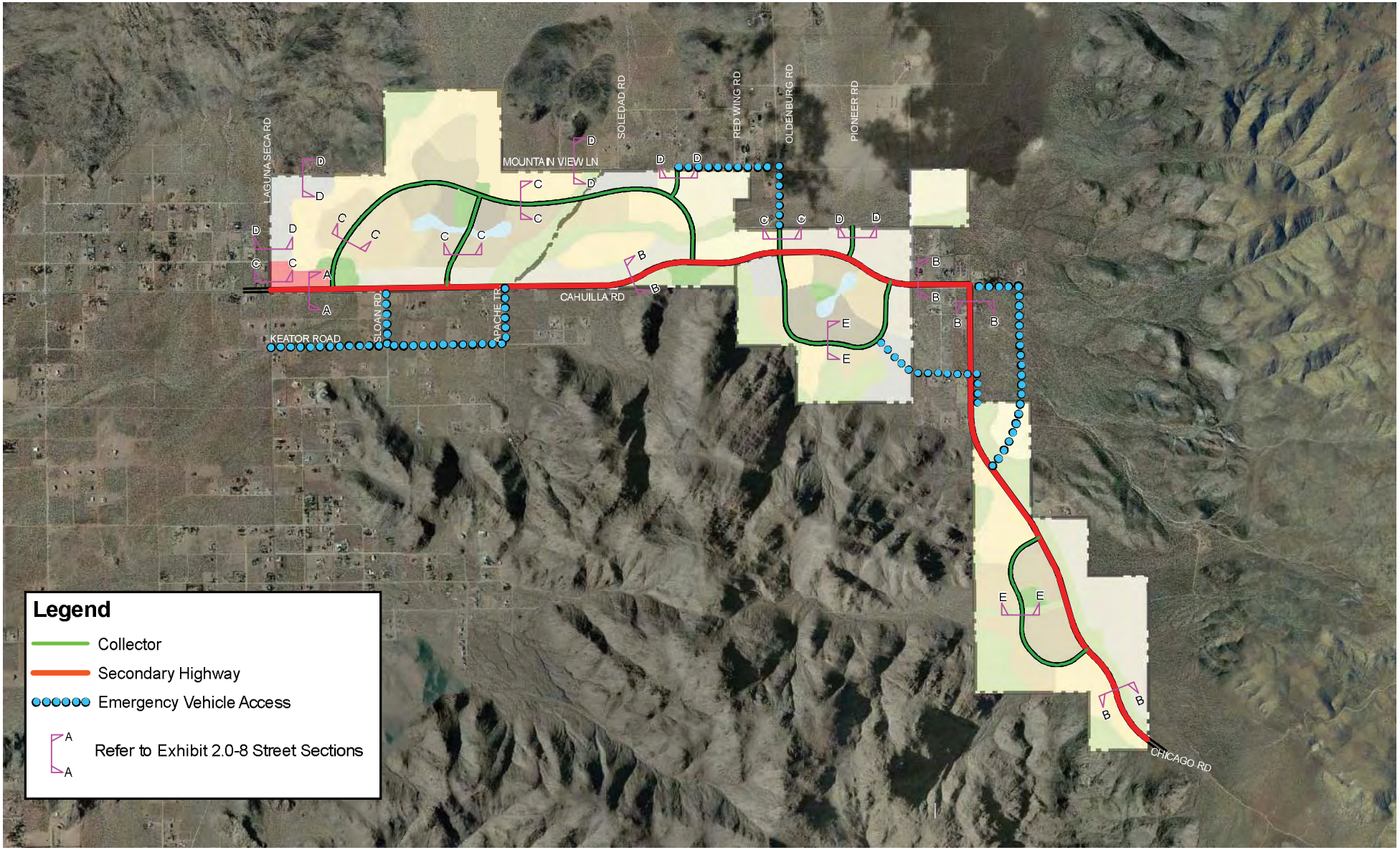
Local streets are two (2) lane streets in residential neighborhoods that provide access to individual lots. A typical local street has between 44- and 60-foot ROW with one (1) travel lane in each direction and a width of 60-foot ROW. Cul-de-sac streets up to 1,000 feet in length are considered short local streets and have a 50-foot ROW width. Both short and through local streets permit curbside parking. Within planning areas with residential lots of three (3) quarters of an acre or larger, a rural local road is proposed. The rural local road has 44-foot ROW width and has traversable dikes without curb and gutter to provide vehicular parking off the paved road.

Cul-de-sacs for lots less than three (3) quarter acre in size would be served by cul-de-sacs up to a maximum of 500-feet. Lots greater than or equal to three (3) quarter acre may be served by cul-de-sacs up to a maximum of 600-feet in length. Cul-de-sacs are preferred to either have a pedestrian connection or open space at the end of the bulb to encourage pedestrian access between neighborhoods.

Neighborhood Electric Vehicles: Neighborhood electric vehicles (NEV) are powered by electric batteries, and expend very low to zero carbon emissions during operation. Per Federal Safety Standards, NEV's can legally move at speeds up to 25 miles per hour (mph) on roadways which are designated for speed limits 35 mph or less. Therefore, all collector, local, and private streets within the project site would be limited to a maximum of 35 mph to accommodate NEV's as a viable transportation alternative for community residents.

Trails: The overall trail system for the project site would provide opportunities for recreational alternatives, such as walking, hiking, jogging, and horse riding along improved trails and unimproved paths which lead along roadways, desert washes and into the Granite Mountains. Trails within each village are planned to be improved with paved or compacted materials. Some trails and paths along washes provide designated access to natural features and amenities that are part of the planned conservation areas.

Internal trail systems connect the Village Commons within each village to paths leading to the Granite Mountains.



RBF CONSULTING

NOT TO SCALE

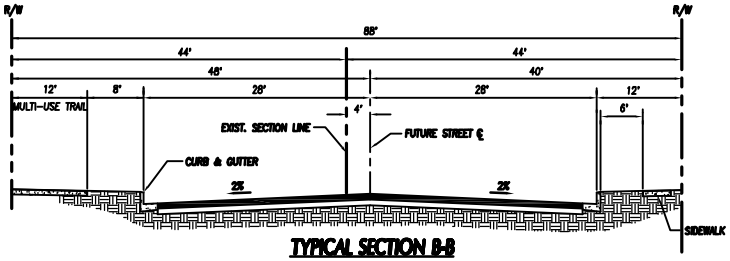
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

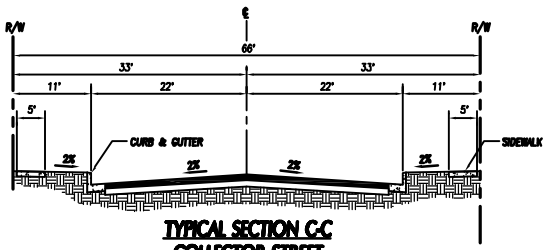
CONCEPTUAL CIRCULATION PLAN

Exhibit 2.0-7

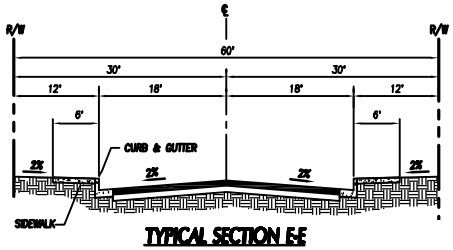
This page was intentionally left blank



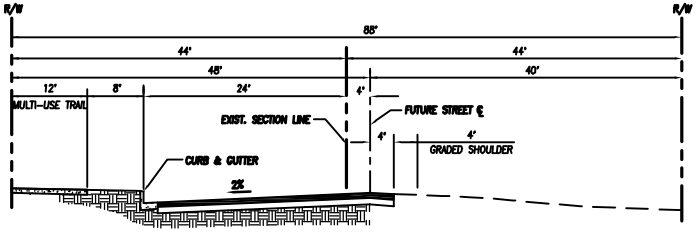
TYPICAL SECTION B-B
SECONDARY HIGHWAY
NTS



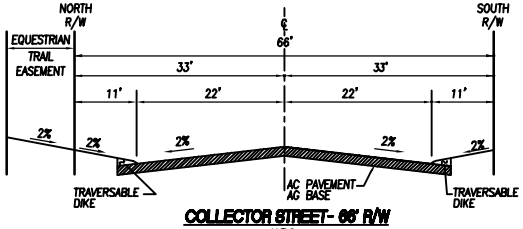
TYPICAL SECTION C-C
COLLECTOR STREET
NTS



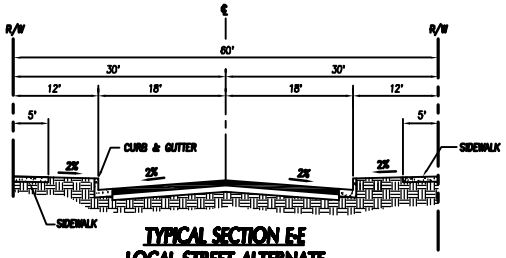
TYPICAL SECTION E-E
LOCAL STREET
NTS



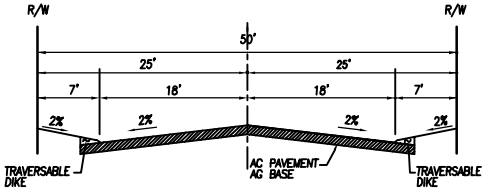
TYPICAL SECTION A-A
HALF WIDTH SECONDARY
HIGHWAY CONSTRUCTION
NTS



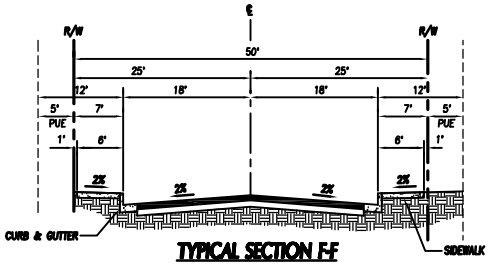
COLLECTOR STREET- 66' R/W
N.T.S.



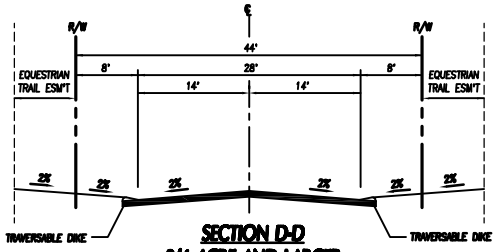
TYPICAL SECTION E-E
LOCAL STREET ALTERNATE
NTS



SHORT LOCAL STREET AND PRIVATE STREET-50' R/W
N.T.S.



TYPICAL SECTION F-F
LOCAL STREET
(LESS THAN 1000 ADT)
NTS



SECTION D-D
3/4 ACRE AND LARGER
PLANNING AREAS
NTS

RBF CONSULTING

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

STREET SECTIONS

Exhibit 2.0-8

This page was intentionally left blank

Transit and Mobility: Three (3) transit stops are proposed along Cahuilla Road and Chicago Road. It is anticipated that the transit stops (located in Villages A, C, and D) would function as the major destination points for the majority of transit riders within the project area. Shuttle systems may provide access to transit for those that could not walk to the transit stops.

The project is designed to promote walkability. Specific landmarks are designed in a manner so that they are located roughly a quarter mile and half mile walking distance from various points within the project site. NEV routes, multi-use trails, and pedestrian trails provide transportation alternatives for the project site.

2.5.10 Infrastructure

The proposed project includes the development of the following on-site infrastructure systems to accommodate the needs of development within Hacienda at Fairview Valley:

Water: The project site is within the service area of Apple Valley Ranchos Water Company (AVRWC).

AVWRC currently has facilities and a service area within one (1) mile west of the project site. AVRWC would extend a transmission pipeline to serve the site.

Due to its size and elevation changes, the site may require the construction of up to approximately three (3) potable water tanks/reservoirs for domestic use and three (3) smaller adjacent non-potable water tanks/reservoirs for irrigation and other common area uses. Several wells exist on the site but are no longer in service. These wells may be analyzed for potential reuse to provide a supplemental water source.

Reclaimed water pipes would be installed by phase during construction of the backbone infrastructure system located within street right of ways. This would allow for hook-up when the reclaimed water becomes available. Refer to Exhibit 2.0-9, *Conceptual Water Plan*.

Wastewater: Currently, the Victor Valley Wastewater Regional Agency (VVWRA) treats most of the sewage in the Victor Valley. Local cities and County areas have regional sewer interceptors that transport sewage to regional wastewater treatment facilities. There are a number of rural and low density housing areas that have septic systems for wastewater treatment. Currently, the use of septic tanks is limited by the Lahontan Regional Water Quality Control Board to residential lots with ½ acre or more.

The majority of the project site is planned to have residential densities that are greater than the ½ acre minimum and will require greater wastewater treatment than septic tanks can provide. There is a total of approximately 400 acres planned with 299 residential units on lots greater than 3/4 acre that would qualify for septic tank systems. Wastewater collection systems,

wastewater treatment, and effluent disposal or reuse would be required for the remaining 686 acres with 2,815 planned residential units on lots smaller than ½ acre within the proposed project site.

Sewer mains for the project would be located within the ROW of Cahuilla Road and Chicago Road. Refer to Exhibit 2.0-10, *Conceptual Wastewater Plan*.

Sewer Collection Systems

Residential Lots Less Than ¾ Acre

Each of the villages is recommended to have its own sewer collection system. The collection system is recommended to meet the Town of Apple Valley's specifications and requirements. Each of the villages' collection systems are recommended to gravity feed to the lowest point and connect to an on-site wastewater treatment system.

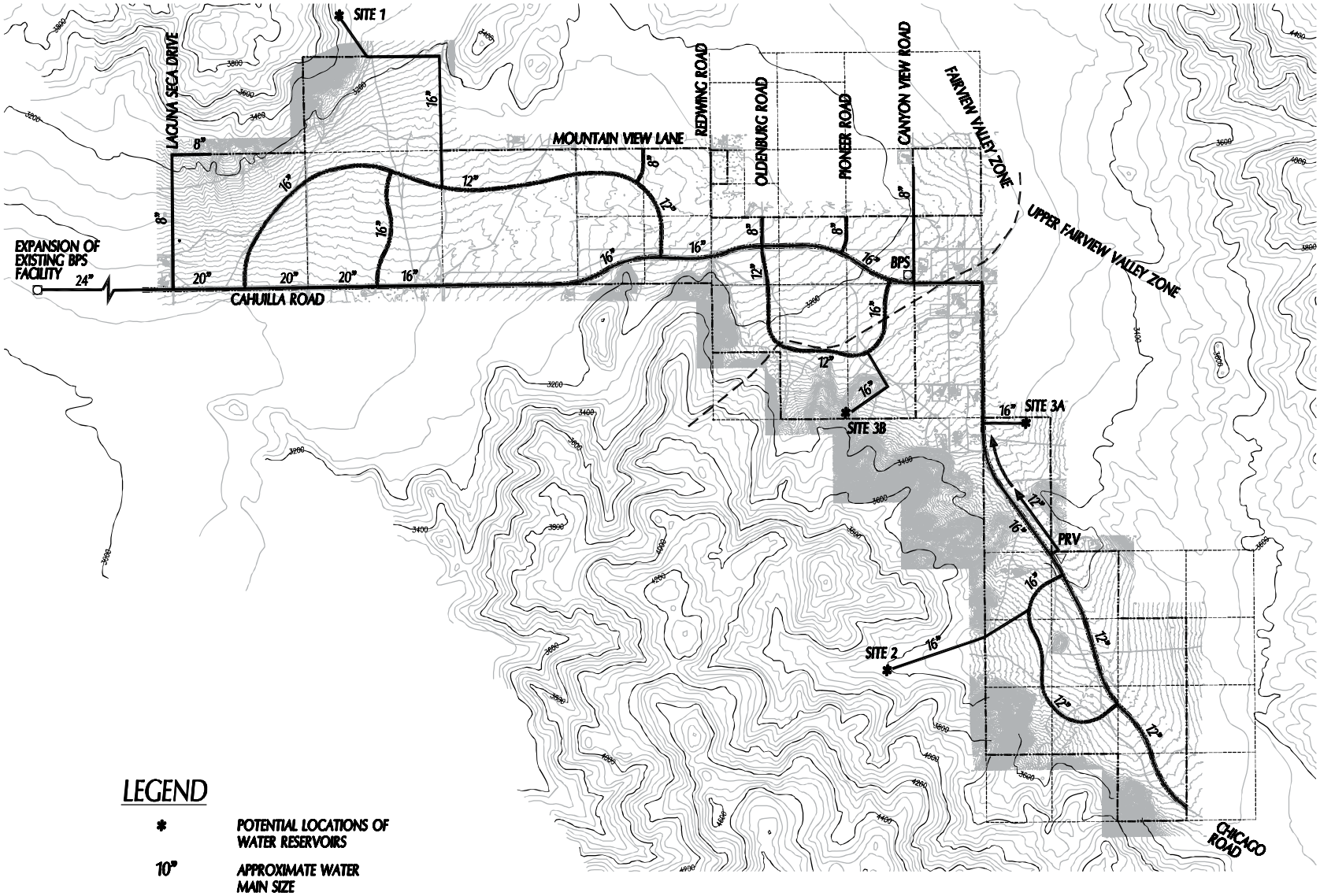
All Residential Lots ¾ Acre or Greater

Residential lots that are ¾ of an acre or larger are recommended to have on-site septic tanks and leach lines for treatment and disposal.

Wastewater Treatment Systems

Initial Phases

Each of the villages is recommended to have its own wastewater treatment system. The initial phases of each village are recommended to have a package treatment system. The package treatment system is recommended to be sized to handle the first 200 to 250 residential units. When the package treatment system reaches 80 percent capacity, the permanent wastewater treatment system should be designed, approved, and ready for installation.



NOT TO SCALE

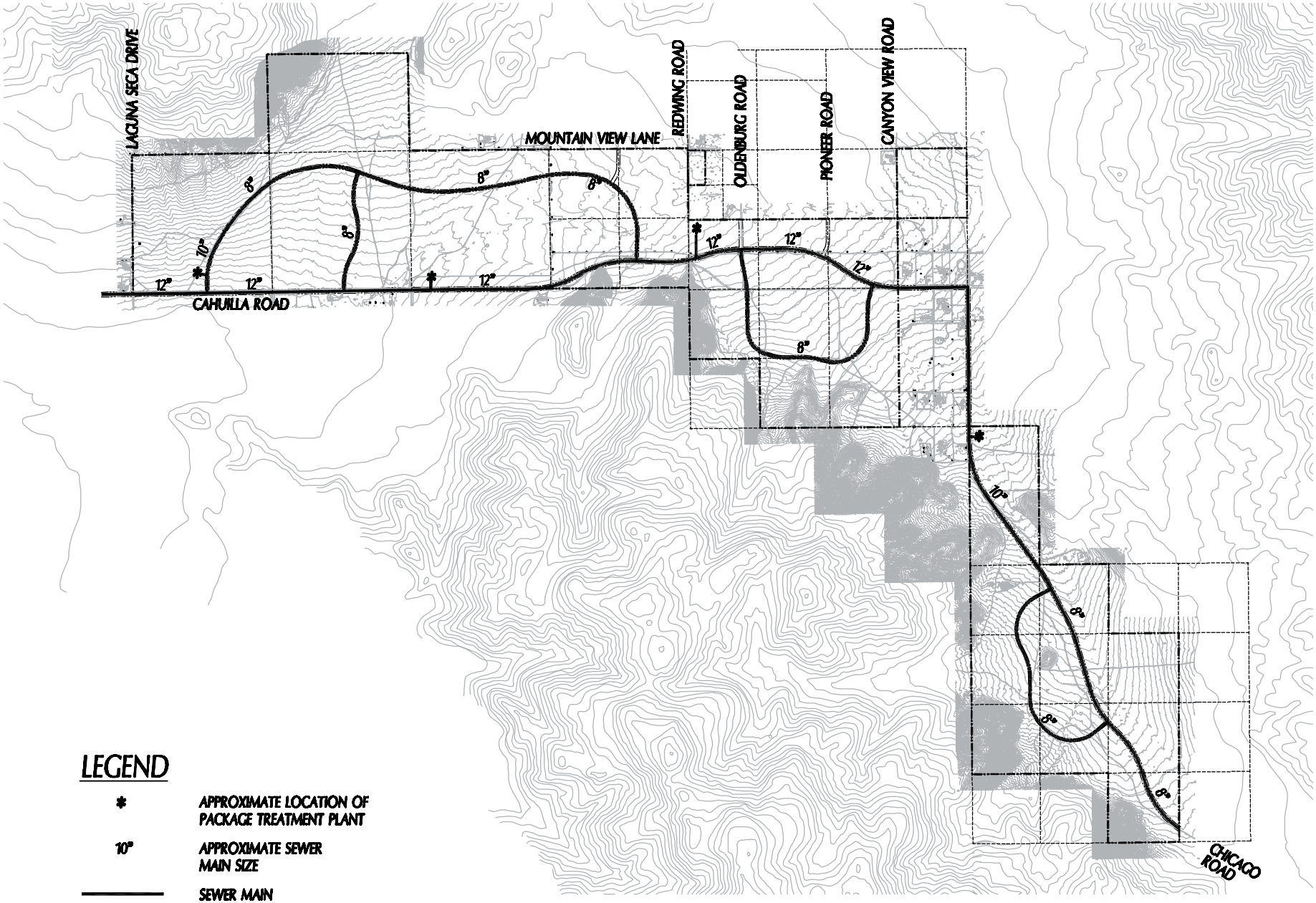
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL WATER PLAN

Exhibit 2.0-9

This page was intentionally left blank



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL WASTEWATER PLAN

Exhibit 2.0-10

This page was intentionally left blank

Permanent Wastewater Treatment System

Sequencing Batch Reactor (SBR) wastewater treatment systems are recommended for the project site. Each village is recommended to have its own wastewater treatment plant. The treatment system is recommended to have a computerized control system and telemetry to minimize operations man hours and time.

The recreational water features would serve as integral components of the overall wastewater treatment system. The water features will remain as OS-C (open space) areas until the critical mass of development and resulting wastewater and stormwater is reached.

Wastewater Effluent Disposal and Reuse

To allow for maximum reuse of the wastewater effluent for landscape irrigation, subsurface drip irrigation is recommended. The subsurface drip irrigation system would have separate irrigation stations that could be out of service for maintenance or repairs without affecting the disposal system as a whole.

Drainage: The project site is located within unincorporated San Bernardino County, and this area does not have a drainage master plan. The entire site drains to Fairview Creek. Fairview Creek traverses west through the project site and exits at Cahuilla Road and eventually terminates at the Apple Valley Dry Lake in the Town of Apple Valley.

Exhibit 2.0-11, *Conceptual Storm Drain and Basin Plans,* depicts the preliminary drainage concept for the project site. Flood protection is assured through a system of channels, levees, pipes, flood walls, detention basins, and recreational water features. The recreational water features would serve as integral components of the overall drainage system. The Specific Plan would mitigate the effect of increased runoff from project development to downstream property owners. Increased runoff would be mitigated with the use of detention basins.

2.5.11 Offsite Improvements

Circulation: The proposed project is served by Cahuilla Road from the west and Laguna Seca Road from the south. Offsite roadway improvements are proposed to connect Village C with Village D. Cahuilla Road would be extended to join with Chicago Road. It is estimated that the overall distance affected by these improvements would be approximately 3,960 feet. The ROW improvements would be approximately 100 feet wide, and would encompass approximately ten (10) acres.

The High Desert Corridor is a planned highway that runs east-west, connecting Highway 18 and Interstate 15 as an alternative transportation route. It is planned to extend through the northerly and easterly portions of the Town of Apple Valley. The proposed alignment of the

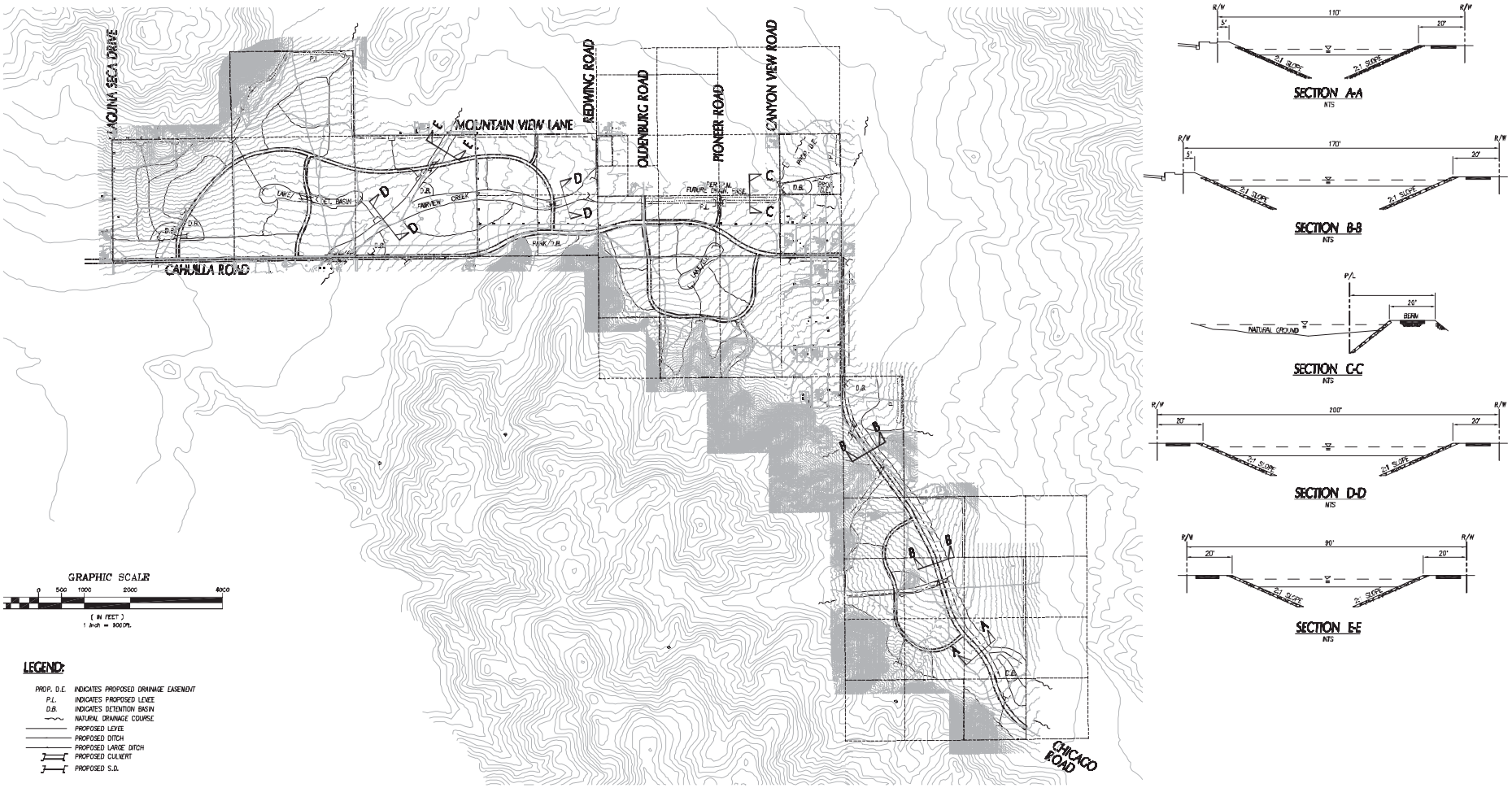
High Desert Corridor is planned to be approximately one and a half (1.5) miles west of the project site and will continue north and west to Interstate 15. Similarly, the High Desert Corridor will provide regional access south and east to State Highway 18 approximately two and a half (2.5) miles south/southwest of the project. When completed, this route would provide major expressway access for the proposed project.

Offsite improvements could require coordination with neighboring property owners and approval by the appropriate jurisdiction, including San Bernardino County and the Town of Apple Valley.

Water Facilities:

Reservoirs: As stated above, the site may require the construction of up to three (3) water tank/reservoir areas including on-site and off-site locations. Each area would provide space to locate one (1) potable water tank, for domestic uses and one (1) smaller reclaimed water tank, for irrigation and other common area uses, adjacent to each other, if necessary. Refer to Exhibit 2.0-9, *Conceptual Water Plan.* The final number and location of the tank/reservoir sites would be coordinated with Apple Valley Ranchos Water District and approved by the County during tentative tract map and final map processes once rough pad elevations are established for planning areas within each village. Once pad elevations are established, the appropriate tank/pipe sizing and site locations would be established. Two (2) of the potential water tank areas may occur off-site, illustrated as Site #1 and Site #2 on Exhibit 2.0-9, *Conceptual Water Plan.* These water tank areas may be located within BLM-managed public lands. If final locations of off-site water tanks, and associated pipeline improvements, are determined by Apple Valley Ranchos Water Company (AVR) to be deemed necessary within BLM-managed public lands due to pad elevations and pressure zone requirements, the applicant and/or AVR shall be required to follow all applicable procedures and abide by regulations for use of right-of-way for such purposes as contained within 43 C.F.R. Part 2800—Rights-of-Way under the Federal Land Policy Management Act, or similar applicable Part, and all applicable Federal and/or State Agency requirements for the identified land.

Wells: Three (3) existing on-site wells may be analyzed for potential reuse to provide a supplemental water source for temporary construction use or to temporarily supplement the reclaimed water system when needed, following appropriate County and/or Mojave Water Agency procedures. Per the recommendations of the *Phase I Environmental Site Assessment (*refer to Appendix I*),* should these existing wells be determined infeasible for reuse, they shall be properly destroyed and disposed in accordance with current regulations.



Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL STORM DRAIN AND BASIN PLANS

RBF CONSULTING

2009 JN 65-100492

Exhibit 2.0-11

This page was intentionally left blank

Pipelines: Offsite 16 inch water pipelines would be constructed within the ROW of the extension of Cahuilla Road and Chicago Road. In addition, offsite 24 inch water pipelines would be constructed within the right of way of Cahuilla Road west of Laguna Seca Road.

Wastewater Facilities:

Offsite ten (10) inch sewer pipelines would be constructed within the ROW of the extension of Cahuilla Road and Chicago Road. In addition, offsite sewer pipelines would be constructed within the right of way of Cahuilla Road west of Laguna Seca Road.

2.5.12 Grading

Larger lot subdivisions (3/4 acre and larger) would be graded so as to avoid significant impacts to existing conditions. Lots greater than ¾ acre would not be mass graded or cleared of all native vegetation, including Joshua Trees. Disturbance would be limited to the installation of building pads, driveways, landscaping, or other reasonable uses associated with the primary land uses including fire clearance areas. Smaller lot subdivisions would be graded using standard grading techniques as required for earthwork balance, infrastructure improvements, and usable private yard areas and as approved by County Building and Safety Department. Grading would be performed on a phased basis to minimize impacts such as erosion and air pollution from windborne dust. It is anticipated that grading would be contained within the project boundaries. Overall grading plans would be designed so that no import or export from the site would be required. Interim stockpiles would be permitted pursuant to County standards, but would be maintained to reduce windborne dust. Refer to Exhibit 2.0-12, *Conceptual Grading Plan*.

2.5.13 Green Development Systems

The Specific Plan proposes to include green development concepts into the design of the project. Four (4) green development goals are included as part of the project to create more sustainable development:

Goal 1-Land Use Efficiency: Seeks to respect the natural site, increase land use efficiency, reduce greenhouse gas emissions, and increase public health of residents and surrounding neighborhoods.

Goal 2-Transportation Efficiency: Seeks to increase overall transportation system efficiency, reduce greenhouse gas emissions, and decrease demand for gasoline powered vehicles.

Goal 3-Water Efficiency: Seeks to increase water use efficiency and decrease water use demand.

Goal 4-Energy Efficiency: Seeks to increase use of renewable energy sources, increase energy efficiency, reduce greenhouse gas emissions, and decrease energy demand.

2.6 PROJECT PHASING

Development of the proposed project would occur in four (4) master phases, based on future development patterns and existing and future availability of infrastructure. Streets, emergency vehicle access, utilities, and off-site improvements would be constructed as part of each corresponding phase. The phasing plan does not prohibit the simultaneous development of more than one (1) phase of development. Each master phase of the Specific Plan can also be divided into sub-phases, if the market demand dictates that one (1) portion be developed prior to others. Each overall phase would be designed as independent of other phases and subsequent phases could commence prior to the completion of previous phases. Ultimate timing of phases would be based upon infrastructure requirements, market demand, and as approved by County.

2.7 REQUIRED PERMITS AND APPROVALS

The project will require a variety of approvals from local, State and Federal agencies. Table 2.0-2, *Requested Approvals*, is a preliminary list of potential agreements, permits, and approvals, which would be refined as the project goes through the environmental review process.

Table 2.0-2:
Requested Approvals

Permit/Approval Currently Being Sought	Agency
Final EIR Certification	County of San Bernardino
Specific Plan Adoption	County of San Bernardino
General Plan Amendment	County of San Bernardino
Zone Change	County of San Bernardino
Development Agreement	County of San Bernardino
Tentative Parcel Map Approval	County of San Bernardino
Tentative Tract Map Approval	County of San Bernardino
Final Tract Map Approval	County of San Bernardino
Site Plan Reviews	County of San Bernardino
Off-road Improvement Plans	County of San Bernardino
1603 Permit	California Department of Fish and Game
404 Permit	U.S. Army Corps of Engineers
401 Permit	Regional Water Quality Control Board
NPDES	Regional Water Quality Control Board
Habitat Conservation Plan Approval	California Department of Fish and Game
Grants of Right-of-Way for Water Reservoir	Bureau of Land Management

Legend

Grading

- Natural Grade Changes
- Phased Contour Grade

RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL GRADING PLAN

Exhibit 2.0-12

This page was intentionally left blank

As listed above, one (1) of the approvals associated with the proposed project is the execution of a Development Agreement between the County and the applicant. It is anticipated that the Development Agreement will document certain agreed upon terms and obligations related to carrying out the proposed project. This Development Agreement; however, will not authorize any ground disturbing activities or other activities that may result in direct or reasonably foreseeable indirect impacts to the environment beyond those already documented and analyzed in this EIR. Additionally, the Development Agreement will not alter the mitigation measures or the responsibility for implementing those measures as they are described in this EIR. Accordingly, and although the Development Agreement is listed here for the purposes of full disclosure, it will not result in any environmental effects requiring additional analysis or revisions to the EIR.

This EIR is intended to cover all state and local government review and consultation requirements. The following agencies were consulted during the CEQA process:

- Native American Heritage Commission (in compliance with SB 18);
- Town of Apple Valley (as a reviewing agency of the Notice of Preparation and Draft EIR); and
- Local land owners within the vicinity of the project site.

CHAPTER 3.0

ENVIRONMENTAL ANALYSIS

EXISTING CONDITIONS, ENVIRONMENTAL IMPACTS, AND MITIGATION MEASURES

This Draft EIR is a project-level EIR, as defined in Section 15161 of the State *CEQA Guidelines*. The project EIR process is appropriate for the project because it analyzes the environmental effects of a specific project proposal, which includes the detailed level of information in the proposed Hacienda at Fairview Valley Specific Plan. This chapter discusses the potential environmental impacts that would result with approval and implementation of the proposed project. The following environmental topics are evaluated in Sections 3.1 through 3.12: Aesthetics, Air Quality (including Climate Change and Greenhouse Gases), Biological Resources, Cultural Resources, Geology, Soils, and Seismicity, Hazards and Hazardous Materials, Hydrology, Drainage, and Water Quality, Land Use and Relevant Planning, Noise, Public Services and Utilities, Population and Housing, and Transportation and Circulation.

Existing Conditions

Existing conditions are the on-site and (as relevant) regional environmental conditions in existence on November 3, 2008 (the time of publication of the Notice of Preparation (NOP) and Initial Study (IS)), pursuant to the *California Environmental Quality Act* (*CEQA*) *Guidelines* Section 15125.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The environmental analysis first specifies the significance thresholds (i.e., the condition or state, which if reached or surpassed by the proposed project, would signify a negative physical change to the environment [environmental impact]).

Environmental Impacts and Mitigation Measures

Impacts

This subsection describes changes that would potentially result to the existing physical environment should the proposed project be approved, in accordance with State *CEQA Guidelines* Sections 15126 and 15126.2. Pursuant to State *CEQA Guidelines* Section 15143, the discussion focuses on the significant effects that might result if the project is approved.

Impacts are numbered sequentially within each section. For example, impacts discussed in Section 3.1 are numbered 3.1-1, 3.1-2, etc.; impacts in Section 3.8 are numbered 3.8-1, 3.8-2, etc. Impacts are stated first and conclude with a summary description of the level of significance of the impact. A discussion that provides supporting analysis and justification for the impact determination is presented second. If mitigation is required to reduce the significance of the impact, it is stated third. Finally, if mitigation is required, a concluding statement that describes the level of significance of the impact after implementation of mitigation is presented.

Mitigation

Pursuant to State *CEQA Guidelines* Sections 15002, 15021, and 15126.4, mitigation measures are required (as feasible) when significant impacts are identified. Unless otherwise noted, all mitigation measures contained herein are proposed by the lead agency. If a mitigation measure itself would cause a significant impact, in addition to the impact caused by the project alone, that impact is also discussed, although at a lesser level of detail than the basic impact (pursuant to State *CEQA Guidelines* Section 15126.4 (A)(1)(d)). "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design" (State *CEQA Guidelines* Section 15126.4(a)(2)).

SIGNIFICANCE DETERMINATIONS

This Draft EIR includes as much detail as possible to maximize information available for public review and thus avoid and/or minimize the need for future environmental documentation (see Chapter 1.0, Introduction, of this Draft EIR for further explanation of the EIR Process). This Draft EIR includes information gathered from Notice of Preparation comments (Appendix A), utility agencies, available literature and reference documents, and applicable portions of prior EIR's (see Section 1.8, *Incorporation by Reference*).

The analysis of the project's impacts, as contained in this Draft EIR, is presented to clearly indicate the significance determination for each of the impacts by numbering each impact, with a corresponding numbered impact discussion and, if necessary, mitigation measure(s). The significance determinations are based on a number of factors as explained in each impact section. These thresholds are derived from Appendix G of the *CEQA Guidelines*, General Plan policies, ordinances, generally accepted professional standards, and quantified thresholds established by the County of San Bernardino or other agencies (such as level-of-service standards for traffic impacts and pollutant emission thresholds adopted by the Air Quality Management District).

The following is an explanation of the different significance determinations made in this Draft EIR:

No Impact: Due to the nature or location of the project, this impact will not occur. For example, underground facilities do not have the potential for long-term visual impacts.

Less Than Significant: Although an impact may occur, it will not be at a significant level based on the standards described above. For example, construction-related air emissions that fall below the adopted standards are less than significant.

Less Than Significant With Mitigation

This determination is made when the following applies:

> **Potentially Significant Impact "Mitigated" Through Existing Requirements (No EIR mitigation required):** In this case, there is an impact that may be potentially significant. However, the significance of this impact will be reduced to less than significant levels through adherence to and/or implementation of existing requirements and regulations. These existing requirements and regulations include local development codes, engineering and design standards (e.g., Uniform Building Codes), and regulations from regional, state and federal agencies.

Significant and Unavoidable: This determination is made for a potentially significant impact where there is either no mitigation available, or the recommended mitigation measures are not sufficient to reduce the impact to less than significant levels. This determination requires a Statement of Overriding Considerations, pursuant to CEQA guidelines Section 15093 (this would be adopted by County of San Bernardino policy makers as part of the resolution, prior to approving the project).

This page was intentionally left blank

3.1 AESTHETICS, LIGHT, AND GLARE

The purpose of this section is to provide analysis and identification of aesthetic resources in the project vicinity. Potential project-related impacts have been analyzed and mitigation measures have been incorporated to reduce potential aesthetic impacts, where possible. Aesthetic and visual resource information included in this section has been compiled from aerial photographs, photographs of the site and surrounding areas, and site surveys conducted by RBF Consulting personnel in August 2008, Visual Simulations prepared by Visuart in January 2009, as well as the *County of San Bernardino General Plan* (March 2007), the *County of San Bernardino General Plan EIR* (February 2007), and the County of San Bernardino Development Code (amended January 2009).

3.1.1 EXISTING CONDITIONS

Landscape Character

Regional Setting

The desert region of San Bernardino County includes a significant portion of the Mojave Desert. The desert region is an assemblage of mountain ranges interspersed with long, broad valleys. Fairview Valley is located in unincorporated San Bernardino County. The Town of Apple Valley and the City of Hesperia are located in proximity to the project site. The project site is bound to the north by the Fairview Mountains, and to the south and west of the Granite Mountains. Within the valley of the Fairview and Granite Mountains, much of the topography is relatively flat, with less than a 5 percent slope. The natural setting of the Granite and Fairview Mountains support view corridors of Fairview Valley.

Project Setting

The project site is located within unincorporated San Bernardino, in Fairview Valley adjacent to the Granite and Fairview Mountains, east of the Town of Apple Valley. Fairview Valley, including the project site, has been widely used in the past for livestock grazing, dry farming, and mining. Single-family residences are located near the project boundaries. Both the Granite and Fairview Mountains are prominent features of the project site. Within the valley, between Fairview Mountain and the Granite Mountain Range, much of the topography is flat, with less than five (5) percent fall. Elevations onsite generally decrease from the southeast to the north and west. The Granite Mountains have steep slopes and rocky terrain. The project site is bisected by Fairview Creek, which traverses in a northeast to southwest direction parallel to Cahuilla Road. A second drainage course extends from the southeast and merges into Fairview

Creek. According to the National Hydrology Dataset, there are three (3) ephemeral streams identified in nearby watersheds that bisect the project site. In general, the streams flow in a northwesterly direction and join at Fairview Creek. Four (4) natural springs, Quail, Isabella, Amaral, and Horse, are located within the vicinity of the project site.

The project site consists of vacant land. Portions of the project site are extensively disturbed due to historic ranching/grazing activities, present day off road vehicle use and illegal trash dumping. The primary vegetation community in the project site is Mojave creosote bush scrub, which comprises approximately 99 percent of the vegetative cover. The project site also contains an abundance of Joshua trees.

Remnants of several historic homesteads scatter the project area. Evidence of prior activity exists onsite via dilapidated water conveyance systems including wells, windmill foundations, canals, small reservoirs, and water troughs.

Surrounding Land Uses

The project site is surrounded by the following land uses:

North: To the north, the project site is bordered by ranch style single-family residences, open space, and Fairview Mountain.

South: The project site is bordered by ranch style single-family residences, open space, and the Granite Mountains to the south.

East: The Granite Mountains, ranch style single-family residences, and Lucerne Valley are located east of the project site.

West: To the west, the project site is bordered by ranch style single-family residences, open space, and the Town of Apple Valley.

Site Conditions

The project site is characterized as relatively flat and undeveloped. Site photos below illustrate the project site from several different locations.

Looking northeast at corner of Laguna Seca Road and Cahuilla Road.

Looking west from Chicago Road

Looking north from Quail Spring

Looking south from Cahuilla Road

Visibility

The project site is visible from adjacent areas given the relative flatness of the site. In addition, the absence of dense vegetation and the undeveloped nature of the site make it more conspicuous with the surrounding areas. Development of the project site would be highly visible from surrounding areas.

Light and Glare

There are two (2) typical types of light intrusion. First, light emanates from the interior of structures and passes out through windows. Second, light projects from exterior sources, such as street lighting, security lighting, and landscape lighting. "Light spill" is typically defined as the presence of unwanted and/or misdirected light on properties adjacent to the property being illuminated.

Glare is the sensation produced by luminance within the visual field that is significantly greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility.

The existing project site currently does not generate any light or glare. Within the vicinity of the project site, nighttime illumination is currently generated by vehicular lights and lighting associated with residential uses. Due to the undeveloped nature of Fairview Valley, the night sky and nighttime vistas are considered to be a resource.

Scenic Routes

The County of San Bernardino General Plan EIR does not identify any designated scenic routes or scenic highways within the vicinity of the project site.

Scenic Vistas

The County of San Bernardino contains vast undeveloped tracts of land that offer significant scenic vistas, as they contrast against the developed urban areas. The County *General Plan* defines a scenic vista as areas that provide a vista of undisturbed natural areas, including a unique or unusual feature that comprises an important or dominant portion of the viewshed, or an area that offers a distant vista that provides relief from less attractive views of nearby features. Designated federal, state, and local open space and recreational areas offer scenic vistas and views if they are visible and provide a break from the urban landscape. The project site is currently vacant, private property and is located adjacent to existing residentially zoned areas on three sides. Views across the generally flat to gently sloping site terminate at the Granite and Fairview Mountains landforms, which visually define the Fairview Valley.

3.1.2 REGULATORY SETTING

State

There are no State regulations regarding aesthetic impacts that are applicable to the proposed project.

Local

County of San Bernardino General Plan

The Conservation Element of the County *General Plan* (2007) includes concepts and guidelines to manage, preserve, and utilize natural resources. The following goals, policies, and programs are applicable to the proposed project:

Goal D/CO 1: **Preserve the unique environmental features and natural resources of the Desert Region, including native wildlife, vegetation, water, and scenic vistas.**

Policy D/CO 1.2: Require future land development practices to be compatible with the existing topography and scenic vistas, and protect the natural vegetation.

Policy D/CO 1.10: Preserve scenic vistas where natural slope exceeds 15 percent by requiring building foundations for residential, non residential, and accessory structures to conform to the natural slope to ensure that rooflines do not eliminate or dominate the ridge lines or that the natural landform is not significantly impacted by excessive grading or erosion.

Goal D/CO 3: **Preserve the dark night sky as a natural resource in the Desert Region communities.**

D/CO 3.1: Protect the Night Sky by providing information about and enforcing existing ordinances:

a. Provide information about the Night Sky Ordinance and lighting restrictions with each land use or building permit application.

b. Review exterior lighting as part of the design review process.

D/CO 3.2 All outdoor lighting, including street lighting, shall be provided in accordance with the Night Sky Protection Ordinance and shall only be provided as necessary to meet safety standards.

D/CO 3.3 Allow for desert communities' input on the need for, and placement of, new street lights.

County of San Bernardino Development Code

Chapter 83.07, Glare and Outdoor Lighting, of the County Development Code, includes regulations and standards pertaining to lighting. Chapter 83.07 outlines light shielding, lamp type, and height requirements for lighting within the desert region. The purpose of this chapter is to minimize light pollution, glare, and light trespass, conserve energy resources, and curtail the degradation of the nighttime visual environment.

3.1.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *CEQA Guidelines*. For the purposes of this analysis, an impact on aesthetics is considered significant if the Project would:

- Have a substantial adverse effect on a scenic vista.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Environmental Impacts and Mitigation Measures

Scenic Vistas

3.1-1: *Implementation of the proposed project may have a substantial adverse effect on the scenic vista.* **Level of Significance: Significant and Unavoidable Impact.**

Onsite Improvements

The County of San Bernardino contains vast undeveloped tracts of land that offer significant scenic vistas, as they contrast against the developed urban areas. The *General Plan* defines a scenic vista as areas that provide a vista of undisturbed natural areas, including a unique or unusual feature that comprises an important or dominant portion of the viewshed, or an area that offers a distant vista that provides relief from less attractive views of nearby features. The hillside areas and washes, canyons and watercourses are considered to be scenic resources. The project site currently consists of privately-owned, undeveloped, vacant land. Rural

residential development is located north, south, and west of the project site. Views across the generally flat to gently sloping site terminate at the Granite and Fairview Mountains landforms, which visually define the Fairview Valley.

Development of the project site would irreversibly change the scenic vista from rural living to urbanized uses. Implementation of the proposed project would alter views of the project site and the site's visual character by converting the site from undeveloped lands to residential, recreational, and commercial development. Development of the project would eliminate the open desert character of the site, and would obscure views of the surrounding areas from public viewing points, when compared to existing conditions. These changes include the addition of suburban uses, which modify the rural landscape. Refer to Exhibits 3.1-1a through 3.1-1e, *Visual Simulations.* The project includes development guidelines, such as standards for building massing and scale, materials and color, and for landscaping, which would minimize and soften visual impacts by making visual intrusions more sensitive to the natural landscape.

In addition to residential and commercial uses, the project proposes one (1) onsite water tank/reservoir area south of Cahuilla Road either west or east of Chicago Road within Village C or Village D. Due to the current preliminary state of the development planning and design, the precise location, size and other design details for these facilities have not yet been determined. When technical planning and engineering has been completed during subsequent tract map processing with the County, including the project's residential lotting, commercial building square footage, graded pad elevations and street layout, the following criteria will be used for siting of the storage tank: the elevation for this site must be at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for this proposed development, the water storage tank at this site which is illustrated on Exhibit 2.0-9, *Conceptual Water Plan* as either Site 3A or 3B must be located such that the base elevation will be between 3,315' above Mean Sea Level (MSL) and 3,365' MSL.

A scenic vista is typically considered an important viewshed from a specified public viewing area. With respect to private views (in this case, from the current residences along the eastern boundary of the project site), although they may be impacted by project implementation, private views are not protected by State law or local policies or significance thresholds established in the *General Plan* EIR, [Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App. 4th 477, 492-494]. Although private views are not protected, development of the project site would impact the scenic vista because the project site would be changed from primarily undeveloped open space to a planned community. United States Bureau of Land Management (BLM) land borders the proposed project site to the north, south, and east. Views from BLM land would be impacted by the proposed project as the BLM land is mainly comprised of hills and mountains with no existing development. BLM land just east of the proposed project site is designated at Resource Conservation. The Resource Conservation designation is applied to areas generally distant from urban centers, with limited access and

steep terrain, have high scenic values, limited or no infrastructure facilities, and where development rights have been transferred to other areas via development approvals and set aside for open space and recreation uses.

The project would consist of low profile structures, primarily one-story heights with a maximum of two-story heights, designed and constructed in a manner compatible with the surrounding built and natural environment, with harmonious styles, forms, massing, natural and earthy color palette, materials, orientation and rooflines. The community character for the project encompasses the elements of a desert community and the natural setting of the site's surrounding foothill environment. The outdoor lifestyle is considered an important design concept, and is reflected in the Specific Plan, which combines the existing natural character of the site with the desert community design theme. The design of the proposed project reflects sensitivity to onsite landforms, and was developed to be consistent with the existing topography and grading concepts proposed for neighboring properties. The proposed development standards include guidelines for residential architectural design, building materials and color, massing and scale, as well as requirements for landscaping which includes utilization of drought-tolerant species, all of which would contribute to a sense of unity with the surrounding environment by making the visual intrusions more sensitive to the natural landscape. The project proposes approximately 336 acres of open space, including parks and natural open space that would provide scenic views and recreation space to the residents as well as the citizens of the area. These project design features would substantially reduce the project's impacts on visual character.

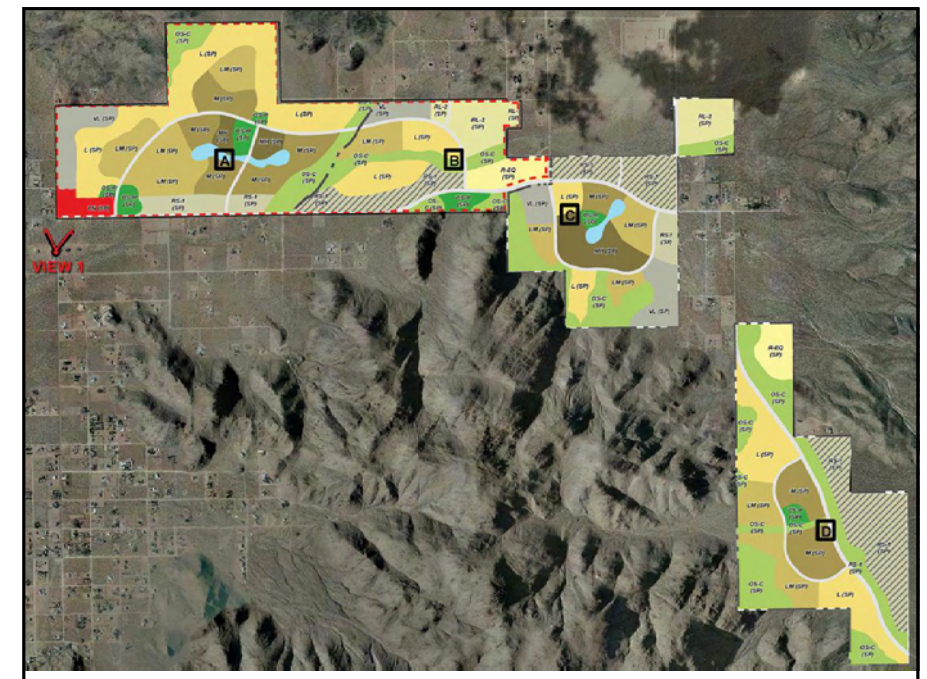
The existing regulations and the County of San Bernardino General Plan goals and policies outlined above, in conjunction with project design features, would substantially reduce potential impacts on the scenic vista by ensuring that development is compatible with the surrounding communities. However, because development of the project site as a more intense use and would permanently alter the existing desert open space, aesthetic and scenic vista of the project site, impacts are considered to be significant and unavoidable.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the existing roads rights-of-way. It is estimated that the overall distance affected by these improvements are approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D. These improvements would occur to existing unimproved roads, and would therefore benefit the County by improving access and infrastructure in and out of the Fairview Valley area.

Existing View

Proposed View



KEY MAP

Note: This visual simulation utilizes computer technology (CADD/digital photo simulation) to translate the 2-dimensional engineering plans and landscape concepts into a composite 3-dimensional image, so as to depict the conceptual overall appearance of the project from the designated locations. The model shows proposed development at maximum building height for each use. Actual elevations will be set by grading plans and final maps.

RBF CONSULTING

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

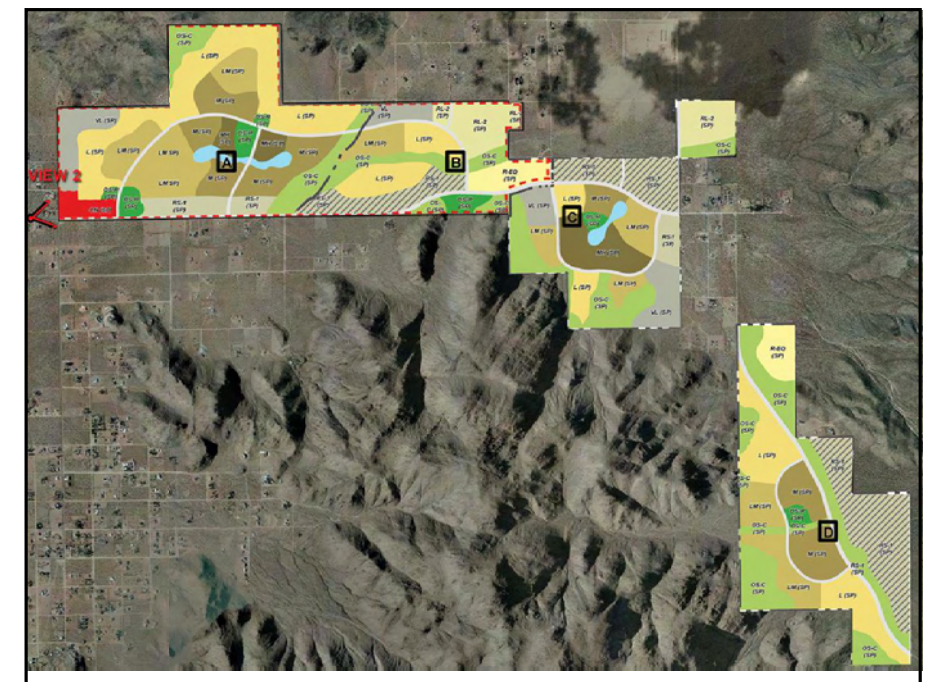
VISUAL SIMULATION 1-VIEW NORTH EAST FROM LAGUNA SECA DRIVE

Exhibit 3.1-1A

This page was intentionally left blank

Existing View

Proposed View



KEY MAP

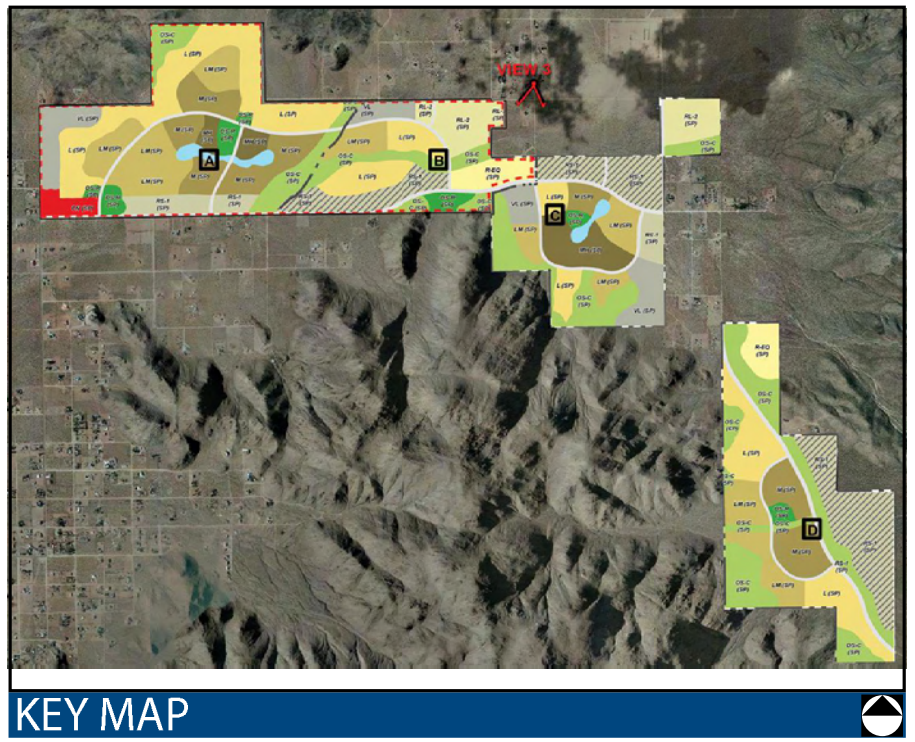
Note: This visual simulation utilizes computer technology (CADD/digital photo simulation) to translate the 2-dimensional engineering plans and landscape concepts into a composite 3-dimensional image, so as to depict the conceptual overall appearance of the project from the designated locations. The model shows proposed development at maximum building height for each use. Actual elevations will be set by grading plans and final maps.

VISUAL SIMULATION 2-VIEW EAST FROM CAHUILLA ROAD

Exhibit 3.1-1B

This page was intentionally left blank

Existing View



Note: This visual simulation utilizes computer technology (CADD/digital photo simulation) to translate the 2-dimensional engineering plans and landscape concepts into a composite 3-dimensional image, so as to depict the conceptual overall appearance of the project from the designated locations. The model shows proposed development at maximum building height for each use. Actual elevations will be set by grading plans and final maps.

Proposed View

RBF CONSULTING

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

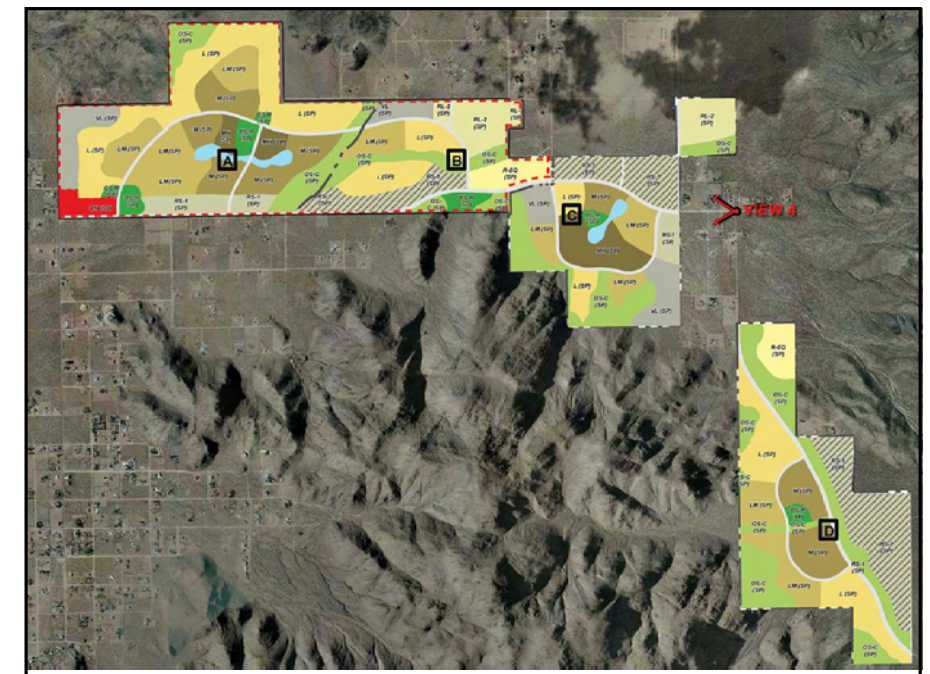
VISUAL SIMULATION 3-VIEW SOUTH FROM OLDENBURG ROAD

Exhibit 3.1-1C

This page was intentionally left blank

Existing View

Proposed View



KEY MAP

Note: This visual simulation utilizes computer technology (CADD/digital photo simulation) to translate the 2-dimensional engineering plans and landscape concepts into a composite 3-dimensional image, so as to depict the conceptual overall appearance of the project from the designated locations. The model shows proposed development at maximum building height for each use. Actual elevations will be set by grading plans and final maps.

RBF CONSULTING

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

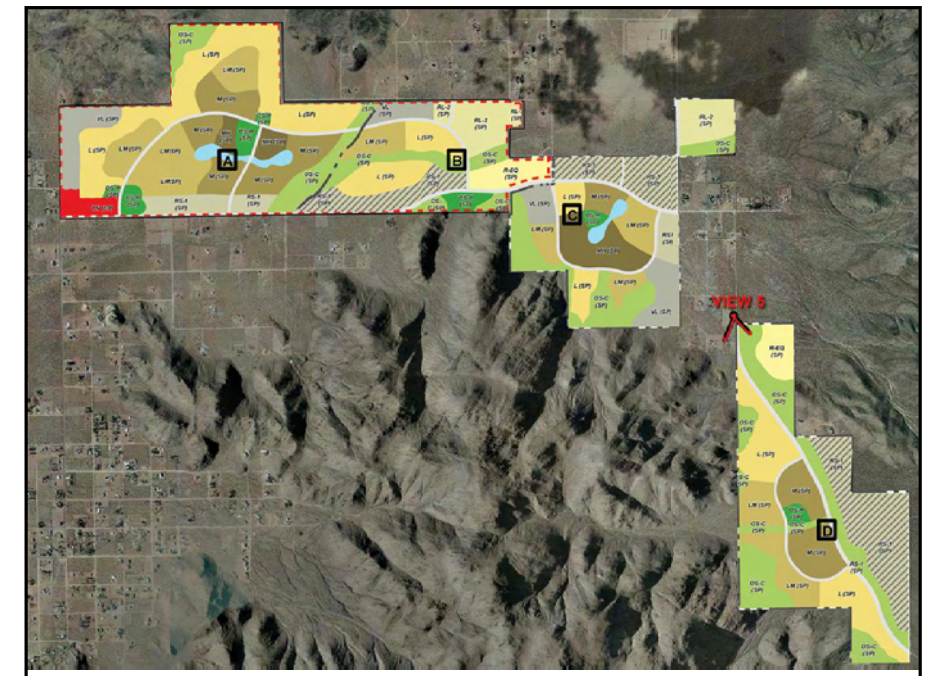
VISUAL SIMULATION 4-VIEW WEST FROM CAHUILLA ROAD

Exhibit 3.1-1D

This page was intentionally left blank

Existing View

Proposed View



KEY MAP

Note: This visual simulation utilizes computer technology (CADD/digital photo simulation) to translate the 2-dimensional engineering plans and landscape concepts into a composite 3-dimensional image, so as to depict the conceptual overall appearance of the project from the designated locations. The model shows proposed development at maximum building height for each use. Actual elevations will be set by grading plans and final maps.

RBF CONSULTING

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

VISUAL SIMULATION 5-VIEW SOUTH FROM CHICAGO ROAD

Exhibit 3.1-1E

This page was intentionally left blank

In addition, the proposed project is anticipated to require the development of up to two (2) offsite water tank/reservoir areas. Exhibit 2.0-9, *Conceptual Water Plan* illustrates the approximate locations of the booster pump stations (BPSs) and gravity storage water tank sites that will be required for Apple Valley Ranchos Water District to serve the proposed development. The proposed project will be served by two (2) primary pressure zones, each with a booster pump station (BPS) and gravity storage tanks. Due to the current preliminary state of the development planning and design, the precise locations, size and other design details for these facilities have not yet been determined. When technical planning and engineering has been completed during subsequent tract map processing through the County, including the project's residential lotting, commercial building square footage, graded pad elevations and street layout, siting of the storage tanks will be finalized based on the elevation required to create the optimum pressure zones.

The approximate primary tank site location for this zone is labeled as Site 1 on Exhibit 2.0-9, *Conceptual Water Plan*. While the exact location has not been determined, the elevation for this site would be at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for the proposed project, the water storage tank at Site 1 would be located such that the base elevation will be between 3,315' above Mean Sea Level (MSL) and 3,365' MSL.

Site 2, as shown on Exhibit 2.0-9, *Conceptual Water Plan*, shows the approximate location for the tank that would serve the Upper Fairview Valley Zone. The primary criteria for siting the tank is that it be at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for the proposed project, the water storage tank at Site 2 would be located such that the base elevation would be between 3,610' MSL and 3,660' MSL.

The construction and operation of these water tank/reservoir areas would significantly alter the scenic vista. The implementation of AES-1 would reduce these impacts by limiting visibility of the water tanks.

Construction of the infrastructure improvements described above would potentially create temporary impacts to visual character due to the presence of construction equipment, materials and debris piles, and to trenching and paving activities. The proposed improved roads and reservoirs would alter the scenic vista from undeveloped, rural desert to a more urbanized uses. Therefore, implementation of the project would cause a substantial adverse effect on the scenic vista.

The implementation of AES-1 would reduce these impacts by limiting visibility of the water tanks. However, impacts on the scenic vista would remain significant and unavoidable

Overlay Districts

Golf Course Overlay

The Golf Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Should the Golf Course Overlay be implemented, more open space would be preserved. However, the Golf Course Overlay would be man-made, and therefore, would significantly alter the scenic vista of the project site. Therefore, implementation of the Golf Course Overlay would cause a substantial adverse effect on the scenic vista of the project site.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Should the Equestrian Overlay be implemented, additional development standards would be required, but approximately the same number of homes would be implemented as part of the project. Since the same number of homes would be built with the implementation of the Equestrian Overlay, the visual character of the project site would be significantly altered. Therefore, implementation of the Equestrian Overlay would cause a substantial adverse effect on the scenic vista of the project site.

AES-1: **Visual impacts associated with the water storage tanks shall be minimized through the incorporation of one or more of the following design standards: height limitations, ridgeline protection, existing or manufactured landforms, rock groupings, screening, tank surface color, or other appropriate standards, as approved by County.**

Visual Character

3.1-2: *Implementation of the proposed project may substantially degrade the existing visual character or quality of the site and its surroundings.* **Level of Significance: Significant and Unavoidable Impact.**

Onsite Improvements

Implementation of the proposed project would result in a significant alteration of the existing visual character of the site. Construction activities would temporarily disrupt views across the site from surrounding areas. Graded surfaces, construction debris, construction equipment, and heavy truck traffic would be visible. The staging and operation of heavy equipment, graded areas, and material and debris stockpiles would result in the temporary degradation of the aesthetic qualities of the project site. Concentrating construction equipment into staging areas and screening those areas would reduce potential impacts. Impacts can be reduced by screening construction activities, equipment, and staging areas from offsite viewing points. Additionally, staging equipment and materials at least 500 feet from the nearest offsite viewing point would also reduce impacts. These measures lessen impacts by reducing the visual impact, substituting views of screens for views of heavy equipment and preventing construction equipment and materials from becoming a dominant feature of a view. Impacts related to construction of the proposed project would be temporary in nature and would cease upon completion of development of each phase of development. Implementation of mitigation measure AES-2 would reduce these impacts by limiting views of construction activities.

Long-term buildout of the project site would produce a mix of uses and a variety of building types with a mix of one and two story heights. In addition to residential and commercial uses, the project proposes one onsite water tank/reservoir area as further described in Impact 3.1-1 above. Implementation of the proposed project would permanently alter the nature and appearance of the site from vacant land to residential development with open space areas. On-site structures would be visible from surrounding areas. This alteration of appearance is permanent and would continue through the life of the project. Views of the valley that currently comprise the site are available to motorists and equestrian riders along Cahuilla Road and the residents to the north, west, and south of the site. Views of these areas are currently unobstructed, so the change in visual character from open space to developed conditions with amenities would be a distinct visual alteration of the project site. Due to the low profile of the proposed residential and commercial uses, views of the surrounding Fairview and Granite Mountains from public roadways near the site would not be significantly altered, as illustrated on Exhibits 3.1-1A through 3.1-1E.

The Specific Plan proposes development adjacent to existing rural residential communities north, south, and west of the project site. In addition, BLM managed land is located to the north, east, and south of the project site. The proposed residential uses would be similar in architectural character and massing with existing surrounding land uses, and therefore would be visually compatible with the surrounding uses. However, the density and intensity of land uses would be greater than those surrounding the project site. Because the Specific Plan includes development standards and design guidelines to ensure quality development of the project site, all future development projects within the Specific Plan area would be required to

meet the design principles set forth in both the County *General Plan* and Specific Plan. Although private views (in this case, from the current residences along the northern, southern, and western boundaries of the project site) may be impacted by project implementation, private views are not expressly protected by State law or local policies or significance thresholds in the County *General Plan* EIR and Zoning Ordinance. However, implementation of the proposed project would permanently change the existing visual landscape and character of the site. Therefore, even with the implementation of mitigation measures, a significant and unavoidable impact would occur.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. It is estimated that the overall distance affected by these improvements are approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D. These improvements would occur to existing unimproved roads, and would therefore benefit the County by improving access in and out of the Fairview Valley area.

In addition, the project may include the development of two offsite water tank/reservoir areas, as further described in Section 3.1-1 above. The construction and operation of these reservoirs would significantly alter the scenic vista.

Construction of the infrastructure improvements described above would potentially create temporary impacts to visual character due to the presence of construction equipment, materials and debris piles, and to trenching and paving activities. The proposed improved roads and reservoirs would alter the visual character of the site from undeveloped, rural desert to urbanized uses. Therefore, implementation of the project would cause a substantial adverse effect on the visual character of the project site.

Overlay Districts

Golf Course Overlay

The Golf Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Should the Golf Course Overlay be implemented, more open space would be preserved. However, the Golf Course Overlay would be man-made, and therefore, would significantly alter the visual character of the project site. Therefore, implementation of the Golf Course Overlay would cause a substantial adverse effect on the visual character of the project site.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Should the Equestrian Overlay be implemented, additional development standards would be required, but approximately the same number of homes would be implemented as part of the project. Since the same number of homes would be built with the implementation of the Equestrian Overlay, the visual character of the project site would be significantly altered. Therefore, implementation of the Equestrian Overlay would cause a substantial adverse effect on the visual character of the project site.

AES-2: **With submittal of a tentative tract map application, the Project Applicant shall show the clustering of construction equipment in staging areas within the project site through the duration of construction. These areas shall be clustered in order to minimize visual impacts during construction.**

Light and Glare

3.1-3: *Implementation of the proposed project may create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.* **Level of Significance: Significant and Unavoidable Impact.**

Future uses facilitated by implementation of the proposed project would introduce new sources of light and glare on the site and in the project vicinity and, in particular, to an area that currently produces little nighttime light. This would increase nighttime illumination and decrease night sky visibility. Sources of light may include interior and exterior lighting, street lights, security lighting, and light and glare from headlights of vehicles on the project site. Structures, equipment, and paved surfaces may cause glare impacts on adjacent land uses.

The project site is adjacent to existing residential development and open space areas. Light sources from the proposed on-site residential development may have a significant adverse impact on the surrounding areas, by introducing nuisance light and glare into the area. Additionally, on-site light sources may create light spillover and glare impacts on surrounding land uses in the absence of mitigation.

The proposed project's Specific Plan conforms to the County Development Code, Division 3, Chapter 83.07 *Glare and Outdoor Lighting* standards designed to reduce impacts associated with nighttime light and glare. The purpose of these standards is to permit reasonable uses of outdoor lighting, curtail and reverse any degradation of the nighttime visual environment, minimize glare and obtrusive light, conserve energy, and help protect the natural environment

from effects of night lighting. All lighting programs within residential and commercial areas would be required to conform to the following, as outlined in the Specific Plan:

1. Streetlights should provide a safe and desirable level of illumination for both motorists and pedestrians without intruding into the residential or open space areas.

2. Shielding shall be utilized for street lights to eliminate light trespass onto adjacent residential and open space areas.

3. Illuminated entries should direct lighting low to the ground and be limited to only the immediate vicinity of the entry. Lighted entries should not be distracting, create visual hot spots, or glare.

4. Entry lighting shall create a visual gateway and have a softened illumination. This will be accomplished by low-level, high intensity indirect illumination. The high intensity lighting will not include visual hot spots or glare, which would be distracting. After passing through the entry, the lighting character will become less intense.

5. Uplighting of focal trees may be used to further illuminate the entries. Glare and spillover onto adjacent areas or homes shall be avoided.

6. Light should be used to accent focal points or provide safe paths of travel; use of "flood" lights to light an entire structure or yard is prohibited.

7. Colored lights in common areas are prohibited.

8. Within the commercial center and Village recreation areas, light fixtures should be selected from the same style and colors and should complement the adjacent buildings architecture to create a cohesive aesthetic of site furniture.

Chapter 83.07, Glare and Outdoor Lighting, of the County Development Code includes regulations and standards pertaining to lighting. Chapter 83.07 outlines light shielding, lamp type, and height requirements for lighting within the desert region. The project would be required to comply with the regulations and requirements set forth in Chapter 83.07 of the County Development Code and the project design features as outlined in the Specific Plan. However, due to the size and density of the project when compared to surrounding land uses, it is anticipated that light and glare impacts would be significant and unavoidable.

Overlay Districts

Golf Course Overlay

The Golf Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Should the Golf Course Overlay be implemented, more open space would be preserved and fewer residential units would be constructed. This would reduce the amount of light and glare generated by the project. However, the Golf Course Overlay would utilize lighting for parking, security, and accessory buildings which would contribute to light and glare impacts. Therefore, it is anticipated that implementation of the Golf Course Overlay would cause a significant and unavoidable impact with regard to light and glare.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Should the Equestrian Overlay be implemented, additional development standards would be required, but approximately the same number of homes would be implemented as part of the project. Since the same number of homes would be built with the implementation of the Equestrian Overlay, the visual character of the project site would be significantly altered. Therefore, implementation of the Equestrian Overlay would cause a significant and unavoidable impact with regard to light and glare.

Analysis of Cumulative Impacts

The cumulative impacts analysis for aesthetics considered the larger-context of future development of the County of San Bernardino as envisioned by the County *General Plan* and relied upon the projections of the County *General Plan* and *General Plan EIR*. Cumulative impacts to visual resources would be impacts that result from incremental changes that degrade the overall visual quality of the County or that degrade visual resources.

The County *General Plan EIR* analyzed the long-term development of the County and found that no significant impacts relative to light and glare and overall visual quality would occur with implementation of the County *General Plan*. However, development of the project site and any additional undeveloped land within the County's planning area would contribute to the overall degradation of the visual character of the Fairview Valley and generate new sources of light and glare. Cumulative impacts to visual resources, then, are considered to be cumulatively considerable and would result in significant unavoidable cumulative impacts to visual resources. The mitigation measures presented above would help reduce cumulative impacts, but not to a less than significant level.

3.2 AIR QUALITY

This section evaluates short and long-term air quality impacts associated with buildout of the proposed project. Mitigation measures are required to avoid or lessen the project's impacts. Information in this section is based primarily on the *Hacienda at Fairview Valley Air Quality Impact Analysis,* prepared by Urban Crossroads on December 10, 2008. The complete report is included within Appendix B, Air Quality Impact Analysis.

3.2.1 EXISTING CONDITIONS

Mojave Desert Air Basin

The project site is located in the Mojave Desert Air Basin (MDAB) within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The MDAB is comprised of 21,000 square miles and is the largest air basin in California. It encompasses the eastern portion of Riverside County consisting of the Palo Verde Valley along with portions of Los Angeles, Kern, and San Bernardino Counties.

The MDAB is separated from the southern California coastal and central California Valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada Mountains in the north by the Tehachapi Pass (3,800 foot elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains, the Morongo Valley. The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose primary channel is the San Gorgonio Pass (2,300 feet) between the San Bernardino and San Jacinto Mountains.[1]

Regional Climate

The regional climate significantly influences the air quality in the MDAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert. Average summer high temperatures in the project vicinity are approximately 93 degrees

[1] Mojave Desert Air Quality Management District, *California Environmental Quality Act and Federal Conformity Guidelines*, February 2009.

Fahrenheit (ºF) Average winter low temperatures are approximately 30ºF. The average annual rainfall in the project vicinity is approximately 6.0 inches annually.[2] During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year.[3]

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. The MDAB consists of an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are generally out of the west and southwest, resulting in a general west to east flow across the basin. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north. Air masses pushed onshore in Southern California by differential heating are channeled through the MDAB.[4] The amount of solar radiation also influences thermal turbulence; the more thermal turbulence, the more dispersion of pollutants. Relatively high daytime temperatures, occasional high winds, and sand, dust and thunderstorms characterize the climate of the Mojave Desert area.[5]

Wind Patterns and Project Location

Wind patterns across the region are characterized by westerly and southwesterly on-shore winds. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and blocking nature of the Sierra Nevada mountains to the north. As a result, air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The prevailing winds in the project area move predominately from the northwest to the southeast with an average wind speed of 2.91 meters per second (m/s), which is equivalent to 6.5 miles per hour.

Local Air Quality

The nearest long-term air quality monitoring site in relation to the project for Ozone (O_3), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Inhalable Particulates (PM_{10}), and Ultra-Fine Particulates ($PM_{2.5}$) is carried out by the MDAQMD at the Victorville monitoring station located

---

2 Country Studies, *Victorville Weather*, Accessed June 2008. http://countrystudies.us/united-states/weather/California/victorville.htm

3 Mojave Desert Air Quality Management District, *California Environmental Quality Act and Federal Conformity Guidelines*, February 2009.

4 City of Blythe, *General Plan 2025*, January 2007.

5 California Energy Commission, *Application for Certification for the Ivanpah Solar Generating System Project*, 2008. (http://www.energy.ca.gov/sitingcases/ivanpah/ documents/applicant/AFC/Volume1/ISEGS_005.5_Air.pdf. Accessed, April 15, 2009).

approximately 12 miles southwest of the project site. The three years of data in Table 3.2-1, *Local Air Quality Monitoring Summary*, shows the number of days standards were exceeded for the study area. It should be noted that data for SO_X has been omitted as no areas of the Basin exceed the standards applicable to SO_X in the Mojave Desert Air Basin and few monitoring stations measure SO_2 concentrations.

Table 3.2-1
Local Air Quality Monitoring Summary

Pollutant	Standard	Year		
		2006	2007	2008
Ozone (O_3)				
Maximum 1-Hour Concentration (ppm)		0.136	0.107	0.109
Maximum 8-Hour Concentration (ppm)		0.105	0.091	0.098
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	9	7	16
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	47	45	59
Number of Days Exceeding Federal 1-Hour Standard	> 0.12 ppm	1	0	0
Number of Days Exceeding Federal 8-Hour Standard	> 0.075 ppm	28	27	30
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 8-Hour Concentration (ppm)		1.56	1.61	1.04
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	0
Nitrogen Dioxide (NO_2)				
Maximum 1-Hour Concentration (ppm)		0.079	0.071	0.074
Annual Arithmetic Mean Concentration (ppm)		0.02	0.018	0.016
Number of Days Exceeding State 1-Hour Standard	> 0.25 ppm	0	0	0
Inhalable Particulates (PM_{10})				
Maximum 24-Hour Concentration (μg/m³)		62	358	77
Number of Samples		365	56	343
Number of Samples Exceeding State Standard	> 50 μg/m³	0	1	0
Number of Samples Exceeding Federal Standard	> 150 μg/m³	0	1	0
Ultra-Fine Particulates ($PM_{2.5}$)				
Maximum 24-Hour Concentration (μg/m³)		22	28	17
Annual Arithmetic Mean (μg/m³)		10.4	9.7	NA
Number of Samples Exceeding Federal 24-Hour Standard	> 35 μg/m³	0	0	0
NM = Data not measured; NA = Not Available				

Source: United States Environmental Protection Agency (http://www.epa.gov/oar/data/geosel.html) and California Air Resources Board Aerometric Data Analysis and Measurement (ADAM) system (http://www.arb.ca.gov/adam/welcome.html), accessed October 2009.

Examples of sources and effects of the pollutants previously discussed are identified below:

Carbon Monoxide (CO): Carbon monoxide is a colorless, odorless, tasteless and toxic gas resulting from the incomplete combustion of fossil fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant.

Oxides of Sulfur (SO_X): Typically strong smelling, colorless gases that are formed by the combustion of fossil fuels. SO_2 and other sulfur oxides contribute to the problem of acid deposition (i.e., acid rain). SO_2 is a criteria pollutant.

Nitrogen Oxides (Oxides of Nitrogen, or NO_X): Nitrogen oxides (NO_X) consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition (i.e., acid rain). NO_2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

Ozone (O_3): A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the Earth's surface. Ozone at the Earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

PM_{10} (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

$PM_{2.5}$ (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities and nitrates that are formed from NO_X release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions.

Volatile Organic Compounds (VOC): Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have

different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

Reactive Organic Gasses (ROG): Similar to VOC, Reactive Organic Gasses (ROG) are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight.

Global Climate Change Gases

The project is expected to generate greenhouse gas (GHG) emissions in the form of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The project is not anticipated to generate other forms of GHG emissions in quantities that would facilitate meaningful analysis. Therefore, the analysis focuses on these three forms of GHG emissions. The primary emission sources of high global warming potential gases (HGWPGs) associated with the proposed project include refrigeration and air conditioning (AC). Both are sources of Hydrofluorocarbons (HFC), which are used as a substitute refrigerant to chlorofluorocarbons (CFCs) that have been phased out under the Montreal Protocol. It is assumed that most of the HGWPG emissions from other sources (e.g., foams, fire suppression, solvents, aerosols, manufacturing) would be negligible based on the community character of the proposed project. There may be potential leakage of HFCs from refrigeration and AC equipment; however the extent of leakage is not well defined at this time nor is the number and type of refrigeration and AC units, thus quantifying such emissions would be speculative in nature.

The potential health effects related directly to the emissions of carbon dioxide, methane, and nitrous oxide as they relate to development projects such as the proposed project are still being debated. Their cumulative effects to global climate change (GCC) have the potential to cause great harm to human health. Increases in Earth's ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists also fear that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas.

Greenhouse gases have varying global warming potential (GWP) values; GWP values represent the potential of a gas to trap heat in the atmosphere. Carbon dioxide is utilized as the reference gas for GWP, and thus has a GWP of 1. A project's total contribution to greenhouse gas

productions (often measured in terms of carbon dioxide equivalency) is referred to as the project's "carbon footprint".

The atmospheric lifetime and GWP of selected greenhouse gases are summarized in Table 3.2-2, *Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases*. As shown in the table below, GWP range from 1 for carbon dioxide to 23,900 for sulfur hexafluoride.

Table 3.2-2
Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CH4)	50,000	6,500
PFC: Hexafluoroethane (C2F6)	10,000	9,200
Sulfur Hexafluoride (SF6)	3,200	23,900

Source: Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 2008.

Water Vapor: Water vapor is the most abundant, important, and variable of the GHGs in the atmosphere. Without water vapor in the atmosphere, the climate would be too unstable to support life. Evaporation from the ocean is the main source of water vapor accounting for nearly 85 percent of water vapor in the atmosphere. Other sources of water vapor include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves.[6]

There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.[7]

Carbon Dioxide: Carbon dioxide is created in the combustion of fossil fuels, forest clearing, and biomass burning. Human activity is more closely tied to carbon dioxide concentrations in the atmosphere than other GHGs, and carbon dioxide is used as a reference to compare the impacts of other GHGs. Concentrations of carbon dioxide in the atmosphere have typically increased at

[6] United States Geological Survey, *The Water Cycle: Evaporation*, August 28, 2006.
[7] United States Geological Survey, *The Water Cycle: Evaporation*, August 28, 2006.

a rate of 0.5 percent per year and levels today are 30 percent higher than those prior to industrialization.[8]

According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of carbon dioxide can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of carbon dioxide are estimated to be approximately 370 parts per million (ppm), the actual reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure levels of 30,000 ppm averaged over a 15 minute period.

Methane: Methane is a hydrocarbon produced through production and distribution of natural gas and oil, coal production, incomplete fuel combustion, waste decomposition, and animal digestion. Methane concentrations in the atmosphere are over twice their pre-industrial levels, and increasing at a rate of 0.6 percent each year, although this rate is thought to be slowing. The GWP of methane is 21.[9]

Methane is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Methane is also an asphyxiant and may displace oxygen in an enclosed space.

Nitrous Oxide: Nitrous Oxide is emitted during fossil fuel combustion, biomass burning, and certain agricultural and industrial activities. Compared to carbon dioxide, nitrous oxide is an especially harmful GHG, since it has a global warming potential of 310.[10]

Nitrous Oxide is often referred to as laughing gas; it is a colorless GHG. The health effects associated with exposure to elevated concentrations of nitrous oxide include dizziness, euphoria, slight hallucinations, and in extreme cases of elevated concentrations nitrous oxide can also cause brain damage.

Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are some of the most potent GHGs, they are referred to as having a "High Global Warming Potential." The GWP of these gases ranges from 140 to 23,900.[11]

---

8 United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2004*, April 2006.
9 United States Environmental Protection Agency, *Methane: Sources and Emissions*, October 19, 2006.
10 United States Environmental Protection Agency, *Nitrous Oxide: Sources and Emissions*, October 19, 2006.
11 United States Environmental Protection Agency, *High GWP Gases: Sources and Emissions*, October 19, 2006.

High concentrations of fluorinated gases can also result in adverse health effects such as asphyxiation, dizziness, headache, cardiovascular disease, cardiac disorders, and in extreme cases, increased mortality.

Aerosols: Aerosols are suspensions of particulate matter in a gaseous state emitted into the atmosphere through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light; cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon, also known as soot, is emitted during bio mass burning and incomplete combustion with fossil fuels. Regulations for particulate matter have been reducing aerosol concentrations in the United States; however it is expected that global concentrations are likely increasing as a function of other growing nations.[12]

The health effects of aerosols are similar to that of other fine particulate matter. Thus aerosols can cause elevated respiratory and cardiovascular diseases as well as increased mortality.

3.2.2 REGULATORY SETTING

Federal Regulations

The U.S. Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for oxidants (O_3), CO, NO_X, SO_2, PM_{10}, and lead. The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the California Air Resources Board (CARB).

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). As discussed above, the CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance. The CAA also mandates that states submit and implement State Implementation Plans (SIPS) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions).

[12] United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2004,* April 2006.

Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and lead. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 3.2-3, *Ambient Air Quality Standards*, provides the NAAQS within the MDAB. Existing air quality is measured based upon ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and nitrogen oxides (NO_2). NO_X is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as byproducts of the combustion process.

Currently, the EPA is moving forward with two (2) key climate change regulatory proposals, one (1) to establish a mandatory GHG reporting system and the other to address the 2007 Supreme Court decision in *Massachusetts v. EPA* (Supreme Court Case 05-1120) regarding the EPA's obligation to make an endangerment finding under Section 202(a) of the Clean Air Act (CAA) with respect to GHGs. *Massachusetts v. EPA* was argued before the United States Supreme Court on November 29, 2006. A coalition of 12 U.S. states (including New York and California) and cities, in conjunction with several environmental organizations, challenged the EPA's refusal to regulate GHGs as a pollutant under the CAA. The plaintiffs contended that the CAA gives the EPA the necessary authority, and the mandate, to address GHGs in light of the scientific evidence on GCC. The EPA had concluded that it had no authority under existing law to regulate GHGs, and that, for a variety of policy reasons, it would not use that authority even if it possessed it. The U.S. Supreme Court held that the EPA has statutory authority to regulate GHG emissions from new motor vehicles. Under the CAA, the EPA is now obligated to issue rules regulating GCC pollution from all major sources. In April 2009, the EPA concluded that GHGs are a danger to public health and welfare, establishing the basis for GHG regulation. Reductions targets for GHGs are anticipated following the rule-making process.

California Regulations

CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl

chloride are not measured at any monitoring stations in the MDAB because they are not considered to be a regional air quality problem. It should also be noted that the CAAQS are generally more stringent than the NAAQS.

Local air quality management districts, such as the MDAQMD, regulate air emissions from commercial and light industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS. Serious non-attainment areas are required to prepare air quality management plans (AQMPs) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROCs, NO_X, CO, and PM_{10}. However, air basins may use alternative emission reduction strategy which achieves a reduction of less than five percent per year under certain circumstances.

Table 3.2-3
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m³)		0.075 ppm (157 μg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 μg/m³	Gravimetric or Beta Attenuation	150 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m³		-		

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta Attenuation	15 μg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		-	-	-
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	Gas Phase Chemiluminescence	0.053 ppm (100 μg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 μg/m³)		-		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm (80 μg/m³)	-	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 μg/m³)		0.14 ppm (365 μg/m³)	-	
	3 Hour	-		-	0.5 ppm (1300 μg/m³)	
	1 Hour	0.25 ppm (655 μg/m³)		-	-	-
Lead	30 Day Average	1.5 μg/m³	Atomic Absorption	-	-	-
	Calendar Quarter	-		1.5 μg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visbility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and transmittance through Filter Tape		No Federal Standards		
Sulfates	24 Hour	25 μg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 μg/m³)	Gas Chromatography			

** For reader's convenience in picking out standards quickly, concentration appears first; e.g. "0.12 ppm, 1-hr avg.>" means 1hr-avg. > 0.12ppm.*
***There is no separate 24-hour $PM_{2.5}$ standard in California; however, the U.S. EPA promulgated a 24-hour $PM_{2.5}$ ambient air quality standard of 35 μg/m³.*
Source: Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis,* December 2008.

Mojave Desert Air Quality Management District

The MDAQMD gathers a variety of air quality data from a variety of monitoring sites. No areas of the MDAB exceeded federal or state standards for NO_2, SO_2, CO, sulfates or lead. The MDAQMD is charged with developing air quality attainment plans for the MDAB, for inclusion into California's State Implementation Plan (SIP), additionally the air quality attainment plans are sought to establish and enforce air pollution control rules and regulations. The MDAQMD currently has two adopted plans in effect to address O_3 and PM_{10}: *MDAQMD 2004 Ozone Attainment Plan* (State and Federal, 2004), *Final Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan* (1995).

Table 3.2-4, 2008 Estimated Emissions Inventory for the MDAQMD, summarizes the emissions of criteria air pollutants within the MDAQMD portion of San Bernardino County for various source categories in 2008 (the latest date available). According to the inventory, vehicular sources are the largest contributor to the estimated annual average air pollutant levels for ROG, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$.

Table 3.2-4
2008 Estimated Emissions Inventory for the MDAQMD

Source Type/Category	Estimated Annual Average Emissions (Tons/Day)					
	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Stationary Sources						
Fuel Combustion	0.63	5.18	18.54	1.34	4.77	3.58
Waste Disposal	0.17	0.05	0.06	0.06	0.01	0.01
Cleaning and Surface Coating	2.40	-	0.00	-	0.18	0.17
Petroleum Production Marketing	3.08	0.02	0.02	-	0.00	0.00
Industrial Processes	2.06	9.43	37.31	2.54	23.60	13.20
Subtotal (Stationary Sources)[1]	**8.33**	**14.68**	**55.93**	**3.94**	**28.56**	**16.95**
Areawide Sources						
Solvent Evaporation	5.17	-	-	-	-	-
Miscellaneous Processes	2.87	14.79	1.31	0.05	85.35	13.16
Subtotal (Areawide Sources)[1]	**8.04**	**14.79**	**1.31**	**0.05**	**85.35**	**13.16**
Mobile Sources						
On-Road Mobile Sources	14.91	150.11	82.98	0.14	3.98	3.32
Other Mobile Sources	25.15	78.34	34.66	0.53	1.86	1.61
Subtotal (Mobile Sources)[1]	**40.06**	**228.46**	**117.64**	**0.67**	**5.84**	**4.94**
Grand Total for Mojave Desert AQMD[2]	**56.43**	**257.92**	**174.88**	**4.66**	**119.74**	**35.05**

Notes:
1 – Totals may be slightly off due to rounding. Totals are derived from the inventory model, and are not specifically added by category.
2 – This total excludes emissions from natural sources (i.e., biogenic, geogenic, and wildfire sources).
Source: California Air Resources Board, California Emissions Facility Search Engine (CEFS), accessed at: http://www.arb.ca.gov/ei/maps/statemap/dismap.htm

Attainment Status

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state standards and federal standards presented in Table 3.2-3. The air quality in a region is considered to be in attainment if the measured ambient air pollutant levels for O_3, CO, SO_2, (1-hour and 24-hour), NO_2, and PM_{10} are not exceeded and all other standards are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O_3, PM_{10}, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O_3 standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Table 3.2-5, *Attainment Status*, provides the State and Federal attainment designations for the MDAB.

Table 3.2-5
Attainment Status

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Nonattainment/Classified Severe 17	Revoked June 2005
Ozone - 8 hour standard	Nonattainment/Classified Severe 17	Nonattainment/Moderate
PM_{10}	Nonattainment	Nonattainment/Moderate
$PM_{2.5}$	Nonattainment	Attainment/Unclassifiable
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment/Unclassified	Attainment/Unclassifiable
Sulfur Dioxide	Attainment/Unclassified	Attainment/Unclassifiable
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment

Source: Mojave Desert Air Quality Management District, February 2009.

Activities of the proposed project in San Bernardino County would be subject to MDAQMD rules and regulations, including:

- *Rule 403 Fugitive Dust:* A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. (Does not apply to emissions emanating from unpaved roadways open to public travel or farm roads. This exclusion shall not apply to industrial or commercial facilities).

- *Rule 403.2 Fugitive Dust Control for the Mojave Desert Planning Area:* This rule aims to ensure that the NAAQS for PM_{10} will not be exceeded due to anthropogenic sources of fugitive dust within the Mojave Desert Planning Area, and to implement the control measures contained in the Mojave Desert Planning Area Federal PM10 Attainment Plan.

- *Rule 402 Nuisance:* A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

- *Rule 1103 Cutback and Emulsified Asphalt*: A person shall not manufacture for sale nor use for paving, road construction or road maintenance any a) rapid cure cutback asphalt; b) medium cure cutback asphalt; or c) slow cure cutback asphalt containing more than 0.5 percent by volume of VOC which evaporate at 260 degrees Celsius. A person shall also not manufacture for sale nor use for paving, road construction, or road maintenance any emulsified asphalt containing more than three (3) percent by volume of VOC which evaporate at 260 degrees Celsius.

- *Rule 1113 Architectural Coatings*: No person shall a) manufacture, blend, or repackage for sale within the district; b) supply, sell, or offer for sale within the district; or c) solicit for application or apply within the district, any architectural coating with a VOC content in excess of the corresponding limit as specified in Table 1 of Rule 1113.

Global Climate Change

GCC first became a matter of concern in the 1980s, and the United Nations in 1988 created the Intergovernmental Panel on Climate Change (IPCC) in order to assess the potential impacts of global warming and develop strategies that could be instituted by nations in order to reduce GHG emissions.

Although GCC did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the unintended reduction of GHG emissions. In order to manage the state's energy needs and promote energy efficiency, AB 1575 created the California Energy Commission (CEC) in 1975.

Title 24 Energy Standards:

California's Energy Efficiency Standards for Residential and Non-Residential Buildings (Title 24, Part 6 of the California Code of Regulations; hereafter refered to as, "Title 24 Energy Efficiency Standards"), enacted in 1978, set energy standards requirements for all buildings in California. It is estimated by the CEC that consumers have saved $15.8 billion on utility bills since 1978 as a result of Title 24, indirectly resulting in a reduction in GHG emissions that would otherwise result from increased energy use. Title 24 standards are updated periodically to allow for the consideration and implementation of new energy efficient technologies.

California Assembly Bill No. 1493 (AB 1493):

Vehicle emissions of GHGs were subsequently targeted in 2002 with the passage of Assembly Bill 1493 (AB1493—Pavley 1), which required CARB to adopt regulations that will reduce GHG from automobiles and light duty trucks by 30 percent below 2002 levels by the year 2016, effective with 2009 models. California committed to further strengthening the AB1493 (Pavley 11) standards beginning in 2017 to obtain a 45 percent GHG reduction from 2020 model year vehicles.

Executive Order S-3-05:

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of the California Environmental Protection Agency (the Secretary) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agencies involved in the GHG reduction plan include Secretary of Business, Transportation, and Housing Agency, Secretary of Department of Food and Agriculture, Secretary of Resources Agency, Chairperson of CARB, Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary is required to submit a biannual progress report to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, and the coastline and forestry, and reporting possible mitigation and adaptation plans to combat these impacts.

California Senate Bill No. 1368 (SB 1368):

In 2006, the State Legislature adopted Senate Bill 1368 ("SB 1368"), which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a GHG emission performance standard ("EPS") for the future power purchases

of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Due to the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. Thus, SB 1368 will lead to dramatically lower GHG emissions associated with California energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out of state producers that cannot satisfy the EPS standard required by SB 1368.

California Assembly Bill 32 (AB 32):

The Legislature enacted AB 32 (AB 32, Nuñez), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006 to further the goals of Executive Order S-3-05. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries, with penalties for noncompliance. CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide GHG emissions. This program would be used to monitor and enforce compliance with the established standards. The first GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. In December 2008, CARB adopted a scoping plan to achieve reductions in GHG emissions in California. The plan indicates how reductions in significant GHG sources would be achieved through regulations, market mechanisms, and other actions.

Executive Order S-01-07:

On January 18, 2007, California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard for transportation fuels sold within the State. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent

(CO_2E)[13] gram per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least ten percent by 2020. The Low Carbon Fuel Standard applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods. The Executive Order requires the Secretary of the California Environmental Protection Agency to coordinate with actions of the California Energy Commission, CARB, the University of California, and other agencies to develop a protocol to measure the "life cycle carbon intensity" of transportation fuels. CARB is anticipated to complete its review of the Low Carbon Fuel Standard protocols, which are currently undergoing regulatory development for consideration in 2009.

County of San Bernardino Settlement Agreement

The County of San Bernardino is in the process of developing a Countywide Greenhouse Gas Emissions Reduction Plan that will quantify emissions over which the County has discretionary land use or internal operational control, set a reduction target, and develop quantifiable mitigation measures to reduce those emissions. A final Plan is expected to be certified and adopted by the County Board of Supervisors in 2010.

Additional Legislative and Non-Legislative Developments:

Although the United States has pledged over $29 billion for research into GCC, the EPA does not currently regulate vehicle GHG emissions. However, it has been argued that the EPA does have the authority to regulate GHG emissions from vehicle exhaust under the Clean Air Act, as found in the recent Supreme Court ruling of *Massachusetts v. US EPA* (April 2, 2007).

The place of climate change in the CEQA process was acknowledged in August of 2007 with the approval of Senate Bill 97 (SB 97). SB 97 gives the Office of Planning and Research (OPR) the authority to draft CEQA guidelines for addressing GCC, and requires OPR to develop guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 2009, and these must be adopted by the Resources Agency by January 2010. On April 13, 2009, OPR submitted its proposed CEQA guidelines to the Resources Agency for consideration. Among other things, those guidelines, if certified, would require that public agencies consider GHGs and climate change in any CEQA documents. The proposed regulations also recommend amending Appendix G to the State CEQA Guidelines to address GCC. Although these amendments have not yet been certified, they are briefly addressed here for the sake of completeness. Additionally, and although SB 97 does not protect public agencies from CEQA

[13] GHG emissions reductions are presented in $MTCO_2E$; emissions for each GHG are converted to CO_2E in order to provide a standard unit of measure to quantify GHG emissions.

challenges, limits are placed on CEQA challenges for certain infrastructure projects financed by Propositions 1B and 1E.

In March 2006, the California Environmental Protection Agency released its *Climate Action Team [CAT] Report to Governor Schwarzenegger and the Legislature*. The CAT Report considered GHGs and climate change in the context of California specifically, and provided "recommendations regarding strategies the State should pursue to reduce climate change emissions," including efforts at reduced fuel consumption, energy efficiency, water conservation, and other measures (*CAT Report* (March 2006) at p. 5). More recently, in March 2008, the California EPA's Climate Action Team released its draft *Biennial CAT Report* which provided updated information about the economic concerns associated with climate change, new technical tools and information regarding climate and sea-level projections, and land-use changes and demographic shifts associated with climate change (*Biennial CAT Report* (March 2008) at p. 1.1). Notably, the draft *Biennial CAT Report* did not include additional strategies for reducing climate change, although it did recommend that agencies work together to address climate change in land use decision and in CEQA documents.

On October 17, 2007 CARB published the document *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California*, which outlines recommendations for discrete early action measures to reduce GHG emissions. Six new regulations are proposed to meet the definition of "discrete early action greenhouse gas reduction measures". CARB estimates that implementation of the 44 measures outlined in the report can result in a reduction in GHG emissions of approximately 42 million metric tons of CO_2 equivalent ($MMTCO_2E$) GHGs.

GHG emissions resulting from the transportation sector have also been heavily targeted. As found in the recent Ninth Circuit Court of Appeals ruling in *Center for Biological Diversity v. NHTSA* (November 17, 2007), the court ruling established that the administration violated the Energy Policy and Conservation Act by exempting SUVs and light trucks from fuel economy standards. Because vehicle GHG emissions are directly related to the amount of fuel consumed, it is expected that this ruling could significantly reduce GHG emissions resulting from vehicle use.

In December 2007, CARB established the 1990 statewide GHG emissions level at 427 teragrams CO_2E GHGs, which, as required under AB 32, is the GHG emissions level which shall be achieved by 2020. One teragram is equivalent to One Million Metric Tons. GHG emissions levels for 2004 in California have been estimated at 492 Tg CO_2E. According to preliminary estimates, 2020 GHG emissions projections could reach 600 $MMTCO_2E$ if no reduction measures are taken.

In June 2007, the Association of Environmental Professionals (AEP) published the white paper *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA*

Documents. Additionally, the California Air Pollution Control Officers Association (CAPCOA) published the white paper *CEQA and Climate Change* in January 2008. Both documents consider and evaluate numerous approaches to addressing GHG emissions under CEQA. However, due to pending litigation in various state and federal courts and active federal legislation, many legal and policy questions regarding global climate change and GHG emissions remain unsettled; thus, these documents are intended only to be a resource, as opposed to providing regulatory guidance. The CAPCOA guidelines, in particular, state that: "This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which an air district or lead agency chooses to address GHG emission in the context of its review of projects under CEQA It is not intended to provide legal advice and should not be construed as such." (CAPCOA, *CEQA and Climate Change* [January 2008] Disclaimer.) It should be noted, however, that the proposed project, through project design features and Specific Plan measures, would implement the applicable GHG emissions reduction measures as recommended by AEP and CAPCOA in these documents.

Additionally, in June 2008, the Office of Planning and Research (OPR) released the technical advisory *CEQA and Climate Change: Addressing Climate Change Through CEQA Review*. In this document, the OPR provides interim guidance as to how climate change should be addressed in CEQA documents until the CEQA Guidelines are amended on or before January 1, 2010 (pursuant to SB 97). OPR recommends that lead agencies discuss GHGs and climate change in their CEQA documents, quantify GHG emissions to the extent possible, determine if the impacts are significant or insignificant, and then impose mitigation if required. (*CEQA and Climate Change: Addressing Climate Change Through CEQA Review* [June 2008] at pp. 5-7.) This approach is used in this EIR, below, to quantify the Specific Plan's GHG emissions and to determine the significance of the Specific Plan's impact on climate change. In addition, the technical advisory includes a number of recommended GHG emissions reduction measures, which "are provided [by OPR] for illustrative purposes only." (*CEQA and Climate Change: Addressing Climate Change Through CEQA Review* [June 2008] at pp. 18-20.) These measures include mitigation related to land use, transportation, urban forestry, green buildings, energy conservation, reductions in vehicle miles traveled, and reductions in solid waste (*Ibid*). As described below, the Specific Plan incorporates design features addressing each of these categories and reducing GHG emissions. Additionally, the measures provided by OPR are duplicative of those included in the CAT Report. As such, compliance with the CAT Report measures will also demonstrate compliance with the OPR illustrative measures.

3.2.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

This section of the Draft EIR identifies and describes the air quality related short-term and long-term environmental impacts, direct and indirect impacts, both adverse and beneficial, as well as

cumulative impacts which would result from the proposed project. Potential impacts are analyzed in accordance with Section 15126, *Consideration and Discussion of Environmental Impacts*, of the State CEQA Guidelines. The analysis is structured by identifying the potential impact issue (with the corresponding threshold statement/question), followed by the analysis and a conclusion of impact significance.

As adapted from Appendix G of the CEQA Guidelines, project impacts from air quality are considered significant if the proposed project would:

- Result in short-term (Construction) impacts that would conflict with or obstruct implementation of the applicable air quality plan, violate any air quality standard, or contribute to an existing or projected air quality violation.
- Result in long-term (Operational) impacts that would conflict with or obstruct implementation of the applicable air quality plan, violate any air quality standard, or contribute to an existing or projected air quality violation.
- 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).
- Generate GHG emissions either directly or indirectly that may have a significant effect on the environment and/or that may conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

In addition, project impacts would be significant if they exceed the following California standards for localized CO concentrations:

- 1-hour CO standard of 20.0 parts per million (ppm); and
- 8-hour CO standard of 9.0 ppm.

MDAQMD Significance Thresholds

Additionally, the MDAQMD's *CEQA and Federal Conformity Guidelines* (June 2007) states that any project is significant if it:

(1) Generates total emissions (direct and indirect) in excess of the thresholds (presented in Table 3.2-6, *Emissions Thresholds*); and/or

(2) Generates a violation of any ambient air quality standard when added to the local background; and/or

(3) Does not conform with the applicable attainment or maintenance plan(s); and/or

(4) Exposes sensitive receptors to substantial pollutant concentrations.

Table 3.2-6
Emissions Thresholds

Maximum Daily Emissions Thresholds		
Pollutant	**Construction**	**Operational**
NO_X	137 lbs/day	137 lbs/day
VOC	137 lbs/day	137 lbs/day
PM_{10}	82 lbs/day	82 lbs/day
$PM_{2.5}$	82 lbs/day	82 lbs/day
SO_X	137 lbs/day	137 lbs/day
CO	548 lbs/day	548 lbs/day
Ambient Air Quality For Criteria Pollutants (Localized Thresholds)		
CO		
1-hr average	20.0 ppm	
8-hr average	9.0 ppm	

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Greenhouse Gas Significance Thresholds

On January 8, 2009, the Office of Planning and Research (OPR) released preliminary proposed amendments to the State CEQA Guidelines regarding GHG emissions as required by Senate Bill 97 (SB 97). No significance threshold is included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommends that CARB set state-wide thresholds of significance. CARB recently released draft thresholds discussed below; however, those draft thresholds are not finalized and do not apply to the type of project analyzed here. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed project, the agency is responsible for quantifying estimated GHG emissions by type and source.

Environmental Impacts and Mitigation Measures

Construction Emissions

3.2-1: *Short-term Construction activities associated with the proposed project may result in significant air pollutant emission impacts.* **Level of Significance: Significant and Unavoidable Impact.**

Construction activities associated with the proposed project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Construction related emissions are expected from the following construction activities:

- Grading
- Underground Utility Construction
- Paving
- Building Construction
- Architectural Coatings
- Construction Workers Commuting

Rimpo and Associates in association with various air districts (including MDAQMD) throughout California have developed the Urban Emissions (URBEMIS) 2007 (version 9.2.4), land use and air pollution emissions computer model that is used to calculate the daily emissions increase associated with a proposed project. The URBEMIS 2007 model was used to forecast emissions levels for project construction and operational activity. Output from the model runs for both construction and operational scenarios are provided in Appendix B.

Construction Phasing

The project would begin construction no earlier than September 2010, and take approximately 20 years to complete. This date is a conservative estimate and since construction equipment emissions would decrease with time due to technological advancements, this estimate would represent a worst-case analysis should construction begin anytime thereafter.

Project construction is expected to occur in four master phases, roughly corresponding to each of the four villages that comprise the project. It should be noted that the four phases discussed in the analysis of construction impacts are considered to be consistent with market absorption of each village within the Specific Plan Land Use Plan, and do not correlate to the two operational phases (interim and buildout) as analyzed in the project traffic study. Construction

emissions include mass site grading, underground utility construction, paving, building construction and architectural coatings. The air quality construction modeling assumed a "worst-case" day of construction activity analyzed by phase. If future construction activities fall within the parameters outlined by phase (in terms of phasing, duration, and earthwork quantities) then additional analyses would not be required.

In the first phase of project construction, Village A, located on the western portion of the project site, would be graded. As a worst-case scenario, it is assumed that underground utility construction, paving, building construction, and architectural coating would take place concurrent with grading at the Village A portion of the project site. During this phase of project construction, it is assumed that grading activity would last approximately three (3) months, underground utility construction - a duration of six (6) months, paving - a duration of 1.5 months, and building construction and architectural coatings - a duration of one (1) year.

In order to represent a worst case scenario, it was assumed that grading, underground utility construction, paving, building construction, and architectural coating on the Village B portion of the project site would begin prior to the completion of building construction and architectural coatings on the Village A site, and thus these activities would overlap. In this second phase of project construction it is assumed that for the Village B area grading activity would last approximately three (3) months, underground utility construction - a duration of six (6) months, paving - a duration of 1.5 months, and building construction and architectural coatings - a duration of one (1) year.

Phase 3 of project construction includes the completion of building construction and architectural coatings on the Village B portion of the project site, as well as the commencement of grading, underground utility construction, paving, building construction, and architectural coatings on the Village C portion of the project site. It is assumed that grading, underground utility construction, paving, and building construction/architectural coatings on the Village C portion of the site would last a duration of approximately three (3) months, six (6) months, 1.5 months, and one (1) year, respectively.

The fourth and final phase of project construction includes the completion of building construction and architectural coating activities on the Village C portion of the site, as well as grading, underground utility construction, paving, building construction, and architectural coatings for Village D, the easternmost portion of the project site.

A detailed discussion of each phase of construction activity analyzed is as follows:

Exhaust emissions from grading activity result from off-road heavy equipment operating during this phase of construction. Refer to Appendix B for a description of the quantity and type of grading equipment that would be needed for the grading activities.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). Fugitive dust emissions were calculated assuming that approximately 20 acres would be actively graded per day during each phase.

Based on information provided by the project applicant, it is estimated that the project site would balance, and no import or export of soil would occur. Additionally, the Specific Plan requires larger residential lots of ¾ acre and larger to avoid mass grading and clearing. Lots less than ¾ acre may be mass graded. For the purposes of this analysis, it was conservatively estimated that grading activity for each phase would last approximately three (3) months. However, it should be noted that fugitive dust emissions resulting from grading activity are calculated by the URBEMIS model based on the maximum daily disturbance area, resulting in a conservative estimate of dust emissions that is not affected by the overall 20 year timeframe over which construction activities would occur.

Underground Utility Construction. Exhaust emissions would result from heavy equipment that would be operational during underground utility construction. The types of activities that generally take place may include general trenchwork, pipe laying with associated base material and cover, ancillary earthwork, manholes, etc. Underground utility construction is expected to take place over a duration of approximately six (6) months during each respective phase of construction.

Paving. Paving activities include the movement of any remaining material as well as necessary curb and gutter work, road base material placement, and blacktop.

Building Construction. Building construction activity would result in emissions from heavy equipment that would be operational during physical building construction.

Architectural Coatings. The application of architectural surface coatings (painting) generates VOC emissions when organic solvents in the coating evaporate as the coating dries. Emissions resulting from the application of architectural coatings were estimated using the URBEMIS 2007 model.

Construction Workers Commuting. Construction emissions for construction worker vehicles traveling to and from the project site were estimated using the URBEMIS 2007 model, which generally assumes 1.25 construction workers for each piece of equipment active during each phase.

Construction Emission Summary

Assuming a "worst case" scenario for construction activity, the estimated maximum daily construction emissions are summarized in Table 3.2-7, *Phase 1 Construction Emissions Summary (Without Mitigation)*, Table 3.2-8, *Phase 2 Construction Emissions Summary (Without Mitigation)*, Table 3.2-9, *Phase 3 Construction Emissions Summary (Without Mitigation)*, and Table 3.2-10, *Phase 4 Construction Emissions Summary (Without Mitigation)*. Additionally, detailed model outputs are presented in Appendix B. Under the assumed worst case conditions, emissions resulting from project construction would exceed criteria pollutant thresholds established by the MDAQMD for emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$. As a result, mitigation measures AQ-1 through AQ-6 would be required to reduce emissions to the maximum extent possible.

Table 3.2-7
Phase 1 Construction Emissions Summary
(Without Mitigation)

Phase 1 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village A							
Grading	Fugitive Dust	0	0	0	0	400.00	83.54
	Off-Road Equipment	17.42	157.23	71.34	0	6.71	6.18
	Worker Trips	0.12	0.23	3.86	0	0.03	0.02
Underground Utility Construction	Equipment Emissions	6.82	56.29	25.88	0	2.97	2.73
	Worker Trips	0.08	0.15	2.48	0	0.02	0.01
Paving	Off-Gas Emissions	2.46	0	0	0	0	0
	Off-Road Equipment	3.57	23.50	11.45	0	1.78	1.64
	On-Road Diesel Equipment	0.76	10.36	3.78	0.01	0.46	0.39
	Worker Trips	0.04	0.08	1.38	0	0.01	0.01
Building Construction	Off-Road Equipment	8.87	65.02	31.29	0	4.33	3.98
	Vendor Trips	3.14	37.50	29.40	0.07	1.76	1.48
	Worker Trips	7.54	14.01	237.07	0.28	2.09	1.15
Architectural Coating	Off-Gas Emissions	80.75	0	0	0	0	0
	Worker Trips	0.11	0.21	3.52	0	0.03	0.02
Maximum Daily Emissions		**131.68**	**364.58**	**421.45**	**0.36**	**420.19**	**101.15**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**YES**	**NO**	**NO**	**YES**	**YES**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-8
Phase 2 Construction Emissions Summary
(Without Mitigation)

Phase 2 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village A							
Building Construction	Off-Road Equipment	8.87	65.02	31.29	0	4.33	3.98
	Vendor Trips	3.14	37.50	29.40	0.07	1.76	1.48
	Worker Trips	7.54	14.01	237.07	0	2.09	1.15
Architectural Coating	Off-Gas Emissions	80.75	0	0	0	0	0
	Worker Trips	0.11	0.21	3.52	0	0.03	0.02
Village B							
Grading	Fugitive Dust	0	0	0	0	400.00	83.54
	Off-Road Equipment	12.18	92.13	50.08	0	3.74	3.44
	Worker Trips	0.06	0.12	2.20	0	0.03	0.02
Underground Utility Construction	Equipment Emissions	4.36	30.74	21.93	0	1.43	1.32
	Worker Trips	0.04	0.08	1.42	0	0.02	0.01
Paving	Off-Gas Emissions	1.75	0	0	0	0	0
	Off-Road Equipment	2.34	14.63	10.60	0	1.07	0.98
	On-Road Diesel Equipment	0.28	3.08	1.19	0.01	0.14	0.11
	Worker Trips	0.02	0.04	0.79	0	0.01	0.01
Building Construction	Off-Road Equipment	5.03	33.74	28.99	0	1.81	1.66
	Vendor Trips	0.33	3.19	3.30	0.01	0.18	0.13
	Worker Trips	0.75	1.46	27.03	0.06	0.42	0.24
Architectural Coating	Off-Gas Emissions	13.88	0	0	0	0	0
	Worker Trips	0.01	0.02	0.40	0	0.01	0
Maximum Daily Emissions		**141.44**	**295.97**	**449.21**	**0.15**	**417.07**	**98.09**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**YES**	**YES**	**NO**	**NO**	**YES**	**YES**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-9
Phase 3 Construction Emissions Summary
(Without Mitigation)

Phase 3 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village B							
Building Construction	Off-Road Equipment	5.03	33.74	28.99	0	1.81	1.66
	Vendor Trips	0.33	3.19	3.30	0.01	0.18	0.13
	Worker Trips	0.75	1.46	27.03	0.06	0.42	0.24
Architectural Coating	Off-Gas Emissions	13.88	0	0	0	0	0
	Worker Trips	0.01	0.02	0.40	0	0.01	0
Village C							
Grading	Fugitive Dust	0	0	0	0	400.00	83.54
	Off-Road Equipment	10.87	76.63	46.91	0	3.02	2.77
	Worker Trips	0.05	0.10	1.89	0	0.03	0.02
Underground Utility Construction	Equipment Emissions	3.79	24.84	21.42	0	1.11	1.02
	Worker Trips	0.03	0.06	1.21	0.02	0.01	0.01
Paving	Off-Gas Emissions	1.70	0	0	0	0	0
	Off-Road Equipment	2.02	12.51	10.46	0	0.89	0.82
	On-Road Diesel Equipment	0.23	2.39	0.95	0.01	0.11	0.08
	Worker Trips	0.02	0.04	0.67	0	0.01	0.01
Building Construction	Off-Road Equipment	4.27	27.03	28.77	0	1.34	1.24
	Vendor Trips	0.60	5.53	6.18	0.03	0.33	0.24
	Worker Trips	1.34	2.65	49.95	0.12	0.92	0.51
Architectural Coating	Off-Gas Emissions	29.94	0	0	0	0	0
	Worker Trips	0.02	0.04	0.74	0	0.01	0.01
Maximum Daily Emissions		**74.88**	**190.23**	**228.87**	**0.25**	**410.20**	**92.30**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**YES**	**NO**	**NO**	**YES**	**YES**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-10
Phase 4 Construction Emissions Summary
(Without Mitigation)

Phase 4 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village C							
Building Construction	Off-Road Equipment	4.27	27.03	28.77	0	1.34	1.24
	Vendor Trips	0.60	5.53	6.18	0.03	0.33	0.24
	Worker Trips	1.34	2.65	49.95	0.12	0.92	0.51
Architectural Coating	Off-Gas Emissions	29.94	0	0	0	0	0
	Worker Trips	0.02	0.04	0.74	0	0.01	0.01
Village D							
Grading	Fugitive Dust	0	0	0	0	400.00	83.54
	Off-Road Equipment	10.22	69.69	45.60	0	2.66	2.45
	Worker Trips	0.03	0.06	1.23	0	0.03	0.02
Underground Utility Construction	Equipment Emissions	3.53	22.3	21.21	0	0.93	0.86
	Worker Trips	0.02	0.04	0.79	0	0.02	0.01
Paving	Off-Gas Emissions	2.77	0	0	0	0	0
	Off-Road Equipment	1.89	11.57	10.40	0	0.81	0.75
	On-Road Diesel Equipment	0.26	2.37	1.00	0.02	0.13	0.08
	Worker Trips	0.01	0.02	0.44	0	0.01	0.01
Building Construction	Off-Road Equipment	3.95	24.21	28.66	0	1.14	1.05
	Vendor Trips	0.50	4.03	5.32	0.03	0.30	0.20
	Worker Trips	0.91	1.94	38.91	0.14	1.09	0.61
Architectural Coating	Off-Gas Emissions	35.81	0	0	0	0	0
	Worker Trips	0.01	0.03	0.58	0	0.02	0.01
Maximum Daily Emissions		**96.08**	**171.51**	**239.78**	**0.34**	**409.74**	**91.59**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**YES**	**NO**	**NO**	**YES**	**YES**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

The proposed project would also be required to reduce construction emissions by implementing mitigation measures AQ-1 through AQ-6. These mitigation measures include maintaining equipment in good condition, implementation of a fugitive dust control plan, the use of low sulfur diesel fuels, use of CARB Tier II Certified or better equipment, and the use of low VOC paints. Table 3.2-11, *Phase 1 Construction Emissions Summary (With Mitigation)*, Table 3.2-12, *Phase 2 Construction Emissions Summary (With Mitigation)*, Table 3.2-13, *Phase 3 Construction Emissions Summary (With Mitigation)*, and Table 3.2-14, *Phase 4 Construction Emissions Summary (With Mitigation)*, present the modeled emissions levels with the implementation of mitigation measures AQ-1 through AQ-6.

Table 3.2-11
Phase 1 Construction Emissions Summary
(With Mitigation)

Phase 1 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village A							
Grading	Fugitive Dust	0	0	0	0	135.42	28.28
	Off-Road Equipment	3.78	71.43	71.34	0	3.03	3.06
	Worker Trips	0.12	0.23	3.86	0	0.03	0.02
Underground Utility Construction	Off-Road Equipment	1.479258	25.5725	25.88	0	1.34185	1.35326
	Worker Trips	0.08	0.15	2.48	0	0.02	0.01
Paving	Off-Gas Emissions	2.46	0	0	0	0	0
	Off-Road Equipment	0.77	10.68	11.45	0	0.80	0.81
	On-Road Diesel Equipment	0.76	10.36	3.78	0.01	0.46	0.39
	Worker Trips	0.04	0.08	1.38	0	0.01	0.01
Building Construction	Off-Road Equipment	1.92	29.54	31.29	0	1.96	1.97
	Vendor Trips	3.14	37.50	29.40	0.07	1.76	1.48
	Worker Trips	7.54	14.01	237.07	0.28	2.09	1.15
Architectural Coating	Off-Gas Emissions	80.75	0	0	0	0	0
	Worker Trips	0.11	0.21	3.52	0	0.03	0.02
Maximum Daily Emissions		**102.96**	**199.76**	**421.45**	**0.36**	**146.95**	**38.56**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**YES**	**NO**	**NO**	**YES**	**NO**

Note: The use of CARB Tier-II equipment reduces emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ by 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.
Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-12
Phase 2 Construction Emissions Summary
(With Mitigation)

Phase 2 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village A							
Building Construction	Off-Road Equipment	1.92	29.54	31.29	0	1.96	1.97
	Vendor Trips	3.14	37.50	29.40	0.07	1.76	1.48
	Worker Trips	7.54	14.01	237.07	0.28	2.09	1.15
Architectural Coating	Off-Gas Emissions	80.75	0	0	0	0	0
	Worker Trips	0.11	0.21	3.52	0	0.03	0.02
Village B							
Grading	Fugitive Dust	0	0	0	0	135.42	28.28
	Off-Road Equipment	2.64	41.85	50.08	0	1.69	1.71
	Worker Trips	0.06	0.12	2.20	0	0.03	0.02
Underground	Equipment Emissions	0.945684	13.9652	21.93	0	0.64607	0.65432

Phase 2 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Utility Construction	Worker Trips	0.04	0.08	1.42	0	0.02	0.01
Paving	Off-Gas Emissions	1.75	0	0	0	0	0
	Off-Road Equipment	0.51	6.65	10.60	0	0.48	0.49
	On-Road Diesel Equipment	0.28	3.08	1.19	0.01	0.14	0.11
	Worker Trips	0.02	0.04	0.79	0	0.01	0.01
Building Construction	Off-Road Equipment	1.09	15.33	28.99	0	0.82	0.82
	Vendor Trips	0.33	3.19	3.30	0.01	0.18	0.13
	Worker Trips	0.75	1.46	27.03	0.06	0.42	0.24
Architectural Coating	Off-Gas Emissions	13.88	0	0	0	0	0
	Worker Trips	0.01	0.02	0.40	0	0.01	0
Maximum Daily Emissions		**115.77**	**167.04**	**449.21**	**0.43**	**145.70**	**37.09**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**YES**	**NO**	**NO**	**YES**	**NO**

Note: The use of CARB Tier-II equipment reduces emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ by 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.
Source: Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 2008.

Table 3.2-13
Phase 3 Construction Emissions Summary
(With Mitigation)

Phase 3 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village B							
Building Construction	Off-Road Equipment	1.09	15.33	28.99	0	0.82	0.82
	Vendor Trips	0.33	3.19	3.30	0.01	0.18	0.13
	Worker Trips	0.75	1.46	27.03	0.06	0.42	0.24
Architectural Coating	Off-Gas Emissions	13.88	0	0	0	0	0
	Worker Trips	0.01	0.02	0.40	0	0.01	0
Village C							
Grading	Fugitive Dust	0	0	0	0	135.42	28.28
	Off-Road Equipment	2.36	34.81	46.91	0	1.36	1.37
	Worker Trips	0.05	0.10	1.89	0	0.03	0.02
Underground Utility Construction	Equipment Emissions	0.822051	11.2848	21.42	0	0.5015	0.50561
	Worker Trips	0.03	0.06	1.21	0.02	0.01	0.01
Paving	Off-Gas Emissions	1.70	0	0	0	0	0
	Off-Road Equipment	0.44	5.68	10.46	0	0.40	0.41
	On-Road Diesel Equipment	0.23	2.39	0.95	0.01	0.11	0.08
	Worker Trips	0.02	0.04	0.67	0	0.01	0.01
Building Construction	Off-Road Equipment	0.93	12.28	28.77	0	0.61	0.61
	Vendor Trips	0.60	5.53	6.18	0.03	0.33	0.24
	Worker Trips	1.34	2.65	49.95	0.12	0.92	0.51
Architectural Coating	Off-Gas Emissions	29.94	0	0	0	0	0
	Worker Trips	0.02	0.04	0.74	0	0.01	0.01

Phase 3 Construction	VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Maximum Daily Emissions	**54.54**	**94.87**	**228.87**	**0.25**	**141.14**	**33.25**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**NO**	**NO**	**NO**	**NO**	**YES**	**NO**

Note: The use of CARB Tier-II equipment reduces emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ by 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.
Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-14
Phase 4 Construction Emissions Summary
(With Mitigation)

Phase 4 Construction		VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Village C							
Building Construction	Off-Road Equipment	0.93	12.28	28.77	0	0.61	0.61
	Vendor Trips	0.60	5.53	6.18	0.03	0.33	0.24
	Worker Trips	1.34	2.65	49.95	0.12	0.92	0.51
Architectural Coating	Off-Gas Emissions	29.94	0	0	0	0	0
	Worker Trips	0.02	0.04	0.74	0	0.01	0.01
Village D							
Grading	Fugitive Dust	0	0	0	0	135.42	28.28
	Off-Road Equipment	2.22	31.66	45.60	0	1.20	1.21
	Worker Trips	0.03	0.06	1.23	0	0.03	0.02
Underground Utility Construction	Off-Road Equipment	0.765657	10.1309	21.21	0	0.42017	0.4263
	Worker Trips	0.02	0.04	0.79	0	0.02	0.01
Paving	Off-Gas Emissions	2.77	0	0	0	0	0
	Off-Road Equipment	0.41	5.26	10.40	0	0.37	0.37
	On-Road Diesel Equipment	0.26	2.37	1.00	0.02	0.13	0.08
	Worker Trips	0.01	0.02	0.44	0	0.01	0.01
Building Construction	Off-Road Equipment	0.86	11.00	28.66	0	0.52	0.52
	Vendor Trips	0.50	4.03	5.32	0.03	0.30	0.20
	Worker Trips	0.91	1.94	38.91	0.14	1.09	0.61
Architectural Coating	Off-Gas Emissions	35.81	0	0	0	0	0
	Worker Trips	0.01	0.03	0.58	0	0.02	0.01
Maximum Daily Emissions		**77.40**	**87.04**	**239.78**	**0.34**	**141.39**	**33.13**
MDAQMD Regional Threshold		137	137	548	137	82	82
Significant?		**NO**	**NO**	**NO**	**NO**	**YES**	**NO**

Note: The use of CARB Tier-II equipment reduces emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ by 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.
Source: Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 2008.

The project site is located in a relatively undeveloped area with scattered single family homes near the site. Since the project is within the MDAQMD, a localized significance threshold analysis is not required for determining localized air quality concentrations of criteria air pollutants. Construction activities would be required to comply with MDAQMD Rules and regulations. MDAQMD Rules that are currently applicable during construction include: Regulation XI (Source Specific Standards); Rule 1103 (Cutback and Emulsified Asphalt); Rule 1113 (Architectural Coatings); and Regulation IV (Prohibitions); and Rule 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area). The specific Rule 403.2 regulatory requirements applicable to this project are summarized in Appendix B. As indicated in Tables 3.2-11 through 3.2-14, although implementation of mitigation measures AQ-1 through AQ-6 would reduce emissions, construction activities would still exceed MDAQMD significance thresholds for emissions of NO_X and PM_{10}.

Mitigation Measures:

Emissions reduction measures to help reduce construction air quality impacts include:

AQ-1 The applicant shall comply with the following:

a. All on-site equipment and vehicles (off-road/ on-road), shall comply with the County Diesel Exhaust Control Measures [County Development Code §83.01.040 (c)].

b. Signs shall be posted requiring all vehicle drivers and equipment operators to turn off engines when not in use.

c. All engines shall not idle more than five (5) minutes in any one (1)-hour period on the project site. This includes all equipment and vehicles.

d. Engines shall be maintained in good working order to reduce emissions.

e. Electric, Compressed Natural Gas (CNG) and gasoline-powered equipment shall be substituted for diesel-powered equipment, where feasible.

f. On-site electrical power connections shall be made available, where feasible.

g. During maintenance, precautions (e.g., regular maintenance of equipment, fuel logs, etc.) shall be taken to ensure that fuel is not leaked onto the ground. Equipment maintenance records and equipment design specification data sheets shall be kept onsite during construction and subject to inspection by the MDAQMD or public works director. As a conservative measure, no reduction was taken in this analysis for the use of properly timed and tuned equipment.

AQ-2 **Prior to grading or land disturbing activity, the project proponent shall provide a Fugitive Dust Control Plan (DCP) in compliance with MDAQMD Rule 403.2 that describes the application of Best Management Practices (BMPs) to control fugitive dust during construction and a signed letter agreeing to include in any construction contracts/ subcontracts a requirement that project contractors adhere to the requirements of the DCP. BMP's in compliance with MDAQMD Rule 403.2 shall include but should not be limited to:**

a. The applicant shall use periodic watering for short-term stabilization of disturbed surface area and unpaved haul roads to minimize visible fugitive dust emissions. Watering, with complete coverage, shall occur at least three (3) times a day, preferably in the mid-morning, afternoon and after work is done for the day. Implementation of this measure is estimated to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 61 percent.

b. During high wind conditions (i.e., when wind gusts exceed 25 miles per hour or, on an hourly average when wind speeds exceed 15 mph), areas with disturbed soil shall be stabilized hourly and activities on unpaved surfaces shall cease until wind speeds no longer meet the high wind conditions.

c. Storage piles that are to be left in place for more than five (5) working days shall be stabilized either by spray with a non-toxic soil binder, covered with plastic or revegetated.

d. Storm water control systems shall be installed to prevent off-site mud deposition.

e. All trucks hauling dirt away from the site onto publicly maintained paved surfaces shall be covered.

f. Construction vehicle tires shall be cleaned, prior to leaving the project site.

g. Rumble plates shall be installed at construction exits from dirt driveways.

h. Paved access driveways and streets shall be cleaned and swept daily when there are visible signs of dirt track-out.

i. Street sweeping shall be conducted daily when visible soil accumulations occur along site access roadways to remove dirt dropped or tracked-out by construction vehicles. Site access driveways and adjacent streets shall be cleaned daily, if there are visible signs of any dirt track-out at the conclusion of any workday and after street sweeping.

j. Pre-watering of soils prior to clearing and trenching.

k. The applicant shall stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions.

AQ-3 **Contractor shall ensure use of ultra low-sulfur diesel fuel in construction equipment as required by the County per County Development Code § 83.01.040 (c)(2)(I) (diesel fuel with sulfur content of 15 ppm by weight or less). Prior to the issuance of grading permits, the applicant shall provide documentation to the County that verifies that certain equipment are exempt; that an ultra low-sulfur diesel supply has been secured; and that the construction contractor is aware that the use of ultra low-sulfur diesel is required. As a conservative measure, no reduction was taken in this analysis for the use of low-sulfur diesel fuel.**

AQ-4 **Contractor shall ensure that all off-road heavy-duty construction equipment utilized during construction activity would be CARB Tier II Certified or better (to the maximum extent feasible). Prior to the issuance of grading permits, the applicant shall provide documentation to the County that verifies that certain equipment is not available as CARB Tier II certified; that applicable CARB Tier II certified equipment has been secured; and that the construction contractor is aware that the use of CARB Tier II Certified equipment is required. Implementation of this measure is estimated to reduce emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ by approximately 78.31 percent, 54.57 percent, 54.82 percent, and 50.43 percent, respectively.**

AQ-5 **Contractor shall utilize existing power sources (e.g., power poles) or clean-fuel generators rather than temporary power generators where feasible. As a conservative measure, no reduction was taken in this analysis for the use of existing power sources.**

AQ-6 **During construction of the proposed project, only low-volatile organic compounds (VOC) paints and coatings as defined in the Mojave Desert Air Quality Management District (MDAQMD) Rule 1113 shall be used. Prior to the issuance of building permits, the applicant shall provide documentation to the County that verifies coatings as defined in MDAQMD Rule 1113 have been secured; and that the construction contractor is aware that the use of low-VOC paints and coatings is required.**

Operational Emissions Impacts

3.2-2: *Long-term operation of the proposed project may result in significant air pollutant emissions impacts.* **Level of Significance: Significant and Unavoidable Impact.**

Land uses such as those proposed for the project impact air quality predominately through emissions associated with vehicular travel. Trip generation rates and characteristics were available from the *Hacienda at Fairview Traffic Impact Analysis*, prepared by Urban Crossroads, Inc.

Operational activities associated with the proposed project would result in emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Operational emissions would be expected from the following equipment and activities:

- Vehicle emissions;
- Fugitive dust related to vehicular travel;
- Combustion emissions associated with natural gas use;
- Emissions resulting from consumer products;
- Landscape maintenance equipment emissions; and
- Architectural coatings.

Vehicle Emissions

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the project on peak hour traffic volumes and traffic operations in the vicinity of the project. The project related operational air quality impact centers primarily on the approximate 19,432 net vehicle trips generated by the project at full build out. Trip characteristics available from the report, *Hacienda at Fairview Traffic Impact Analysis* (Urban Crossroads, Inc.) were utilized in this analysis. Overall project daily emissions are evaluated first, followed by analysis of the potential peak hour "micro-scale" air quality impacts of the project (i.e. CO "hot spot" analysis).

Fugitive Dust Related to Vehicular Travel

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust. The emissions estimates for travel on paved roads were calculated using the URBEMIS 2007 model. The estimated PM_{10} and $PM_{2.5}$ emissions from vehicles for fugitive dust are summarized in Table 3.2-15, *Summary of Interim Peak Operational Emissions (Without*

Mitigation), and Table 3.2-16, *Summary of Buildout Peak Operational Emissions (Without Mitigation).* To be consistent with the Traffic Impact Analysis, "interim" is defined as Year 2020 and "buildout" is defined as Year 2030.

It should be noted that the project plans to pave portions of Cahuilla Road (west of Laguna Seca Drive and east of Joshua Road) that are currently unpaved and utilized to access existing residences in the area. For the purposes of this analysis, the reduction in fugitive dust emissions resulting from the paving of this road was not quantified, however, it is conservatively estimated by the South Coast Air Quality Management District (SCAQMD) that paved roads generally reduce fugitive dust emissions by approximately 94 percent compared to unpaved roads. It should be noted that SCAQMD data was used based on their research on fugitive dust. Thus, the paving of this road segment has the potential to significantly reduce fugitive dust emissions resulting from vehicular travel.

Table 3.2-15
Summary of Interim Peak Operational Emissions (Without Mitigation)

Operational Activities (Summer)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	86.46	106.17	904.35	1.81	289.24	56.69
Natural Gas Use	2.84	36.88	16.25	0	0.07	0.07
Landscape Maintenance Emissions	13.98	0.9	79.07	0	0.21	0.21
Consumer Products	87.31	0	0	0	0	0
Architectural Coatings	7.32	0	0	0	0	0
Operational Emissions	**197.91**	**143.95**	**999.67**	**1.81**	**289.52**	**56.97**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**
Operational Activities (Winter)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	92.46	126.32	867.55	1.54	289.24	56.69
Natural Gas Use	2.84	36.88	16.25	0	0.07	0.07
Fireplace Emissions	0.83	14.12	6.01	0.09	1.14	1.13
Landscape Maintenance Emissions	13.98	0.9	79.07	0	0.21	0.21
Consumer Products	87.31	0	0	0	0	0
Architectural Coatings	7.32	0	0	0	0	0
Operational Emissions	**204.74**	**178.22**	**968.88**	**1.63**	**290.66**	**58.10**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-16
Summary of Buildout Peak Operational Emissions
(Without Mitigation)

Operational Activities (Summer)	VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Vehicle Emissions	93.73	91.58	874.74	2.54	397.75	77.50
Natural Gas Use	5.12	66.37	28.79	0	0.13	0.13
Landscape Maintenance Emissions	25.37	1.61	142.10	0	0.38	0.38
Consumer Products	159.75	0	0	0	0	0
Architectural Coatings	12.42	0	0	0	0	0
Operational Emissions	**296.39**	**159.56**	**1,045.63**	**2.55**	**398.26**	**78.01**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**
Operational Activities (Winter)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	98.74	108.84	837.58	2.15	397.75	77.50
Natural Gas Use	5.12	66.37	28.79	0	0.13	0.13
Fireplace Emissions	1.51	25.83	10.99	0.16	2.09	2.07
Landscape Maintenance Emissions	25.37	1.61	142.10	0	0.38	0.38
Consumer Products	159.75	0	0	0	0	0
Architectural Coatings	12.42	0	0	0	0	0
Operational Emissions	**302.91**	**202.65**	**1,019.46**	**2.32**	**400.35**	**80.08**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Combustion Emissions Associated with Natural Gas Use

Combustion emissions would be generated by the use of natural gas in the development. The emissions associated with natural gas use were calculated based on assumptions from the URBEMIS 2007 model. The estimated combustion emissions are provided in Table 3.2-15 and 3.2-16.

Emissions Resulting from Consumer Products

Consumer products include, but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with the use of consumer products were calculated based on assumptions from the URBEMIS 2007 model. The estimated emissions are provided in Table 3.2-15 and 3.2-16. Detailed emission calculations are provided in Appendix B.

Landscape Maintenance Emissions

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the development. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the URBEMIS 2007 model. It should be noted that the Project's Specific Plan provisions significantly reduce the amount of turf grass allowed in both individual residential yards and common landscape areas (i.e., parks and streetscapes). This limitation of turf grass when compared with typical residential, commercial and recreational developments results in a noticeably less need for lawnmowers which generate emissions. However, for the purposes of this analysis, the reduction in operational emissions resulting from the limited use of turf in the project area was not quantified.

Architectural Coatings

It is assumed that over a period of time the buildings that are part of this project would be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of project maintenance. The emissions associated with architectural coatings were calculated using the URBEMlS 2007 model.

Operations Emissions Summary

The project-related operations emissions summary for the Interim (2020) and Buildout (2030) phases of the project, along with a comparison of MDAQMD recommended significance thresholds, is presented in Table 3.2-15 and 3.2-16, respectively. Additionally, detailed emissions calculations are provided in Appendix B. The project related emissions levels for operational emissions would exceed the criteria pollutant thresholds established by the MDAQMD for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$ during the Interim and Buildout phases of project development. It should be noted that the Golf Course Overlay (which applies to Villages A and B), if implemented, would replace 400 to 500 homes with a golf course, and would inherently result in a decrease in emissions due to the associated reduction in vehicular trips. Also, the project would decrease emissions by limiting commercial delivery truck idling to three (3) minutes or less, and requiring electric outlets to plug in transportation refrigeration units (TRUs) (Mitigation Measure AQ-7). The goals, policies, and requirements in the Specific Plan would reduce emissions to the maximum extent possible.

Specific Plan Goals

The proposed project provides for a mixed-use, pedestrian friendly environment with access to a variety of transportation options, including walking, biking, public transit, or car.

The Specific Plan for the proposed project creates a regulatory framework which focuses on "Green Development". The Green Development Goals and Efficiency Provisions contained in the Specific Plan, and summarized below, are intended to result in a superior community development which reduces GHG emissions and conserves water and energy resources, as consistent with the California Global Warming Solutions Act (AB 32).

Four Green Development goals are incorporated to guide the implementation of the Specific Plan towards the Green Development principles of sustainable development and reduction of the proposed project's carbon footprint:

- Land Use Efficiency: Seeks to respect the natural site, increase land use efficiency, reduce GHG emissions, and increase public health of residents and surrounding neighborhoods.

- Transportation Efficiency: Seeks to increase overall transportation system efficiency, reduce GHG emissions and decrease demand for gasoline powered vehicles.

- Water Efficiency: Seeks to increase water use efficiency and decrease water use demand.

- Energy Efficiency: Seeks to increase the use of renewable energy sources, increase energy efficiency, reduce GHG emissions, and decrease energy demand.

These goals will be achieved through the Specific Plan regulations which govern the design and implementation of land use patterns, infrastructure, buildings, energy systems, landscapes, and other features at the project site.

Specific Plan Requirements

The following project design features will be implemented by the project as required by the Specific Plan in order to guide the implementation of the Specific Plan towards the Green Development principles of sustainable development and reduction of the proposed project's carbon footprint:

- Placement of neighborhood commercial, recreation areas, and public safety near residential uses in order to reduce vehicle miles traveled and reduce the number of vehicle trips through on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian and bicycle activity.

- Encourage the use of Neighborhood Electric Vehicles (NEVs) to access recreational and commercial areas through the establishment of maximum speed limits on all private streets.

- Designate multiple transit stops throughout the site in order to service future public transportation routes.
- Encourage pedestrian and bicycle activity by providing open pedestrian access to an adjacent street's sidewalk for the majority of local cul-de-sac streets.
- Increase water use efficiency and decrease water use demand through the following improvements:
    - Require a minimum of 90 percent of all non-turf planting areas in common areas and street right of ways to utilize drought tolerant and/or native plant materials.
    - Establish a maximum percentage of turf grass coverage in common and residential front yards for lots ¾ acre and larger (19 percent max) and less than ¾ acre (28 percent max).
    - Eliminate "non-functional" turf grass coverage allowed in recreation areas.
    - Provide a wastewater treatment system which reuses reclaimed water to irrigate common area and street right of way landscape.
    - Require micro-irrigation systems for watering of plants within common areas and street right of ways.
    - Implementation of Specific Plan Design Guidelines to strongly encourage incorporation of water saving features and technologies within residential and commercial buildings.
    - Provide community pool(s) at the community recreation areas within convenient distance from the majority of active adult homes to reduce the need for private pools at individual homes and thus decrease supplemental water requirements at individual lots.
    - Low flow faucets as well as high-efficiency toilets shall be installed in restrooms.
- Reduce energy requirements through implementation of the following community features:

- Establishment of a "dark sky" policy which limits street lighting and thereby the electricity requirements to decision making points (e.g., street intersections), night-use recreation areas or where County public safety officials deem them necessary.
- Provide community pool(s) at the community recreation areas within convenient distance from the majority of active adult homes in order to reduce the need for private pools at individual homes thereby decreasing pool equipment energy requirements at individual lots.

- Construction of buildings that exceed minimum statewide energy requirements 15 percent beyond Title 24; this may include, but is not limited to:
  - Require that a minimum of 25 percent of the total residential units constructed within the Specific Plan Area shall be powered primarily by solar energy
  - Encourage home orientation with the majority of window areas facing due north and south, by designing local streets in a predominantly east-west direction, to minimize transfer of heat generated by early morning and late afternoon summer sunlight through windowed surfaces. Conversely in the winter, exposed windows on the southern side of a home take advantage of the natural heating and lighting effects of the low sun position.
  - Use of low emission water heaters
  - Use of central water heating systems
  - Use of energy efficient appliances
  - Use of increased insulation
  - Use of automated controls for air conditioners
  - Use of energy-efficient parking lot lights
  - Use of lighting controls and energy-efficient lighting

Recommended Measures Identified by the California Attorney General's Office

Additionally, the project will implement the following applicable measures as part of the project design and construction as recommended by the California Attorney General's Office in the document *Addressing Global Warming Impacts at the Local Agency Level* (2008). These measures will also further the Green Development principles of sustainable development and reduction of the proposed project's carbon footprint:

Generally Applicable Measures

Energy Efficiency

- Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings.
- Install light colored "cool" roofs, cool pavements, and strategically placed shade trees.
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems.
- Install light emitting diodes (LEDs) for traffic, and other outdoor lighting.
- Limit the hours of operation of outdoor lighting.
- Use solar heating, automatic covers, and efficient pumps and motors for pools and spas.
- Provide education on energy efficiency. Specifically, the project Homeowner's Association (HOA) would provide these materials to residents.

Renewable Energy

- Install solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives. The project would require a minimum of 25 percent of the total constructed residential units to provide solar and/or tankless water heaters. Also, the project would require a minimum of 50 percent of the total constructed residential units to provide energy-efficient air conditioning systems.

- Install solar panels on carports and over parking areas.
- Use combined heat and power in appropriate applications.

Water Conservation and Efficiency

- Create water-efficient landscapes. For example, the project would implement drought tolerant and/or native plant materials.
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. The project would require micro-irrigation systems for plant watering.
- Use reclaimed water for landscape irrigation in new developments and on public property. Install the infrastructure to deliver and use reclaimed water. The project would provide a wastewater treatment system which reuses reclaimed water to irrigate landscaping.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances. Low flow faucets and high-efficiency toilets would be installed in restrooms.
- Restrict watering methods (*e.g.,* prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Restrict the use of water for cleaning outdoor surfaces and vehicles. The project HOA would provide these educational materials to residents.
- Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site.) The historic path of flow of Fairview Creek would be maintained.
- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. Provide education about water conservation and available programs and incentives. The project HOA would provide these educational materials to residents.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- Provide education and publicity about reducing waste and available recycling services. The project HOA would provide these educational materials to residents.

Land Use Measures

- Include mixed-use, infill, and higher density in development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods. The project includes a neighborhood commercial center for daily needs. Also, higher density housing would be located near recreation centers.
- Educate the public about the benefits of well-designed, higher density development.
- Incorporate public transit into project design. The project includes three (3) transit stop locations.
- Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.
- Include pedestrian and bicycle-only streets and plazas within developments. Create travel routes that ensure that destinations may be reached conveniently by public transportation, bicycling or walking.

Transportation Measures

- Limit idling time for commercial vehicles, including delivery and construction vehicles.
- Use low or zero-emission vehicles, including construction vehicles.
- Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for ride sharing, designating adequate passenger loading and

unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides.

- Create car-sharing programs. Accommodations for such programs include providing parking spaces for the car share vehicles at convenient locations accessible by public transportation.
- Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems. Project internal streets would have maximum speed limits, and would accommodate NEV systems.
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric charging facilities and conveniently located alternative fueling stations). The project would require installation of electric charging stations at the neighborhood commercial center.
- Provide shuttle service to public transit.
- Provide public transit incentives such as free or low-cost monthly transit passes.
- Promote "least polluting" ways to connect people and goods to their destinations.
- Incorporate bicycle lanes and routes into street systems, new subdivisions and large developments. The main project roads would contain on-street bicycle lanes.
- Incorporate bicycle-friendly intersections into street design.
- For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking.
- Create bicycle lanes and walking paths directed to the location of schools parks and other destination points.
- Work with the school district to restore or expand school bus services.
- Institute a telecommute work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences.

- Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation. The project HOA would provide these educational materials to residents.

As shown on Table 3.2-17, *Summary of Interim Peak Operational Emissions (With Mitigation)*, and Table 3.2-18, *Summary of Buildout Peak Operational Emissions (With Mitigation)*, long-term operational emissions would exceed MDAQMD significance thresholds for VOCs, NO_X, CO, and PM_{10}, even with implementation of the recommended mitigation measures.

Table 3.2-17
Summary of Interim Peak Operational Emissions
(With Mitigation)

Operational Activities (Summer)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	65.27	77.15	656.03	1.32	210.14	41.17
Natural Gas Use	2.42	31.35	13.81	0	0.06	0.06
Landscape Maintenance Emissions	13.98	0.90	79.07	0	0.21	0.21
Consumer Products	87.31	0	0	0	0	0
Architectural Coatings	7.32	0	0	0	0	0
Operational Emissions	**176.30**	**109.40**	**748.91**	**1.32**	**210.41**	**41.44**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**NO**	**YES**	**NO**	**YES**	**NO**
Operational Activities (Winter)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	68.34	91.77	629.50	1.11	210.14	41.17
Natural Gas Use	2.42	31.35	13.81	0	0.06	0.06
Fireplace Emissions	0.83	14.12	6.01	0.09	1.14	1.13
Operational Activities (Winter)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Landscape Maintenance Emissions	13.98	0.90	79.07	0	0.21	0.21
Consumer Products	87.31	0	0	0	0	0
Architectural Coatings	7.32	0	0	0	0	0
Operational Emissions	**180.20**	**138.14**	**728.39**	**1.20**	**211.55**	**42.57**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-18
Summary of Buildout Peak Operational Emissions
(With Mitigation)

Operational Activities (Summer)	VOC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Vehicle Emissions	77.08	72.88	696.58	2.02	316.58	61.69
Natural Gas Use	4.35	56.41	24.47	0	0.11	0.11
Landscape Maintenance Emissions	25.37	1.61	142.10	0	0.38	0.38
Consumer Products	159.75	0	0	0	0	0
Architectural Coatings	12.42	0	0	0	0	0
Operational Emissions	**278.97**	**130.90**	**863.15**	**2.03**	**317.07**	**62.18**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**NO**	**YES**	**NO**	**YES**	**NO**
Operational Activities (Winter)	**VOC (lbs/day)**	**NO_x (lbs/day)**	**CO (lbs/day)**	**SO_x (lbs/day)**	**PM_{10} (lbs/day)**	**$PM_{2.5}$ (lbs/day)**
Vehicle Emissions	79.84	86.63	666.93	1.72	316.58	61.69
Natural Gas Use	4.35	56.41	24.47	0	0.11	0.11
Landscape Maintenance Emissions	25.37	1.61	142.10	0	0.38	0.38
Fireplace Emissions	1.51	25.83	10.99	0	2.09	2.07
Consumer Products	159.75	0	0	0	0	0
Architectural Coatings	12.42	0	0	0	0	0
Operational Emissions	**283.24**	**170.48**	**844.49**	**1.89**	**319.16**	**64.25**
MDAQMD Regional Threshold	137	137	548	137	82	82
Significant?	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**

Source: Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 2008.

Secondary Effects Evaluation

The potential impact of the project on sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors; however, the project site is primarily surrounded by scattered single-family residential uses.

Localized Impacts

Based on MDAQMD guidance, a project is considered to have a significant impact on sensitive receptors if it proposes to locate any of the following land uses near sensitive receptors:

- Any industrial project within 1,000 feet
- A distribution center (40 or more trucks per day) within 1,000 feet

- A major transportation project (50,000 or more vehicles per day) within 1,000 feet
- A dry cleaner using perchloroethylene within 500 feet
- A gasoline dispensing facility within 300 feet

It should be noted that although the proposed project contains a neighborhood retail element, it is not anticipated that this portion of the project would generate significant truck traffic. Also, the Specific Plan does not permit the location of a gas station within the project area. Because the proposed project does not plan to develop any of these land uses, and does not plan to locate any sensitive receptors near any of these land uses, the proposed project is not anticipated to result in a significant impact with regard to sensitive receptors.

The potential for the project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming);
- Wastewater treatment plants;
- Food processing plants;
- Chemical plants;
- Composting operations;
- Refineries;
- Landfills;
- Dairies; and
- Fiberglass molding facilities.

Potential odor sources associated with the proposed project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities, and the temporary storage of typical solid waste (refuse) associated with the proposed project's (long-term operational) uses. The Equestrian (EQ) overlay is a design standards overlay which requires additional setbacks, and allows equestrian uses on-site. Potential odors from manure are not anticipated to be significant due to the number of horses allowed (maximum of three (3) per lot), and the lot sizes (one acre minimum). Odors from on-site wastewater treatments plants would be required to adhere to MDAQMD Rule 402, which specifies odor treatment standards for facilities that could pose a nuisance.

Standard construction requirements would minimize odor impacts resulting from construction activity. It should be noted that any construction odor emissions generated would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction activity and is thus considered less than significant. It is expected that project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the local agency's solid waste regulations. The proposed project would also be required to comply with MDAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed project construction and operations would be less than significant and no mitigation is required.

Carbon Monoxide "Hot Spot"

A carbon monoxide (CO) hotspot is a localized concentration of CO that is above State and/or Federal 1-hour or 8-hour ambient air standards that is generally associated with idling or slow moving traffic. It should be noted that the MDAQMD has not established CO hotspot methodology. As a result, the screening criterion recommended by the SCAQMD has been utilized, which recommends a CO hotspot analysis be performed if the project meets either of the following two conditions:

- The volume to capacity ratio increases by two percent or more as a result of a proposed project for intersections rated level of service (LOS) D or worse or if the LOS declines from C to D.
- The LOS declines from A, B, or C to D, E, or F.

According to data provided by the report *Hacienda at Fairview Valley Traffic Impact Analysis* (Urban Crossroads, Inc., March 7, 2008), none of the studied intersections would meet these conditions as a result of project generated vehicular traffic. Thus, because the project does not have the potential to create a CO hotspot and impacts are less than significant, a numerical CO hotspot analysis was not performed.

Mitigation Measures:

Emissions reduction measures to help reduce operational air quality impacts include:

AQ-7 The following shall be adhered to during operations of the proposed project:

- **All transportation refrigeration units (TRU's) shall be provided electric connections, when parked on-site; and**
- **The HOA shall include a policy restricting commercial delivery truck idling to three (3) minutes or less in the covenants, codes, and restrictions.**

Air Quality Management Planning

3.2-3: *Development associated with the proposed project would be consistent with regional plans.* **Level of Significance: Significant and Unavoidable Impact.**

The applicable air quality plans, the Federal Particulate Matter Attainment Plan and Ozone Attainment Plan for the Mojave Desert set forth a comprehensive set of programs that will lead the MDAB into compliance with federal and state air quality standards. The control measures and reduction estimates established in these plans are based on projections for future developments derived from the local existing land use plans. According to the MDAQMD's *CEQA and Federal Conformity Guidelines* (June 2007), a project is deemed not to exceed this significance threshold if it is consistent with the existing land use plan. However, it should be noted that zoning changes, specific plans, general plan amendments, and similar land use plan changes which do not increase dwelling unit density, vehicle trips, or vehicle miles traveled are also deemed not to exceed this threshold.

The majority of the project site is currently zoned RL-5 (Rural Living), with a maximum population density average of 343 persons per square mile and a minimum lot size of five (5) acres. Portions of the project site are currently zoned RL-20 and RL-40. Because the proposed project would exceed the maximum population density for the site and proposes a more intense land use, the project is considered not to be consistent with the applicable air quality management plans, and significant impacts may occur with regard to this threshold. Additionally, it should be noted that although the proposed project exceeds significance thresholds established by the MDAQMD during construction and operational activity, the project specific plan requires the implementation of several "green" project design features aimed at increasing land use efficiency, transportation efficiency, energy efficiency, and water efficiency. A detailed list of project design features to be implemented by the project specific plan is presented in Impact 3.2-2 (Operational Emissions Analysis), as well as Appendix B.

3.2.4 Analysis of Cumulative Impacts

The existing project area is designated as non-attainment for ozone, PM_{10}, and $PM_{2.5}$. The results of the analysis indicate that the air quality impacts for the proposed project are significant on an individual project basis. It should be noted that the MDAQMD recommends that the analysis of ozone impacts be limited to ROG and NOx, as these pollutants are ozone precursors. CEQA Section 2100 (e) addresses evaluation of cumulative effects allowing the use of approved land use documents in a cumulative impact analysis. CEQA Guidelines Section 15064 (i) (3) indicate that for an impact involving a resource that is addressed by an approved plan or mitigation program, the lead agency may determine that a project's incremental contribution is not cumulatively considerable if the project complies with the adopted plan or program. In addressing cumulative effects for air quality, the *MDAQMD 2004 Ozone Attainment Plan* and the

Final Mojave Desert Planning Area Federal Particulate Matter PM_{10} Attainment Plan are the most appropriate documents to use due to its comprehensive nature in identifying a plan that is expected to lead the air basin (including the project area) into compliance with all federal and state ambient air quality standards.

Because the proposed project is not consistent with the applicable attainment plans and project emissions are significant on an individual project basis, it is assumed that the project's incremental contribution to criteria pollutant emissions would be cumulatively considerable.

Introduction to Global Climate Change

GCC is simply defined as the change in average meteorological conditions on the Earth with respect to temperature, precipitation, and storms. Some data suggests that GCC has occurred in the past over the course of thousands or millions of years. These climate changes occurred naturally without human influence, as in the case of an ice age. However, some scientists believe that the climate shift presently taking place is occurring at a quicker rate and magnitude. Scientific evidence suggests that GCC is the result of increased concentrations of GHGs in the Earth's atmosphere, including carbon dioxide, methane, nitrous oxide, and fluorinated gases. Some scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

The purpose of this evaluation is to determine/inventory the GHG emissions associated with the development and operation of the proposed project and to provide mitigation and/or project design measures to reduce these emissions and the project's carbon footprint to the extent feasible. Due to the global nature of climate change, it is unlikely that GHG emissions resulting from any single project would likely have a significant impact on overall climate change. Instead, GHG emissions from the proposed project would combine with GHG emissions emitted across California, the United States, and the world to cumulatively contribute to GCC.

CEQA Evaluation of Global Climate Change

In the context of CEQA, GHGs and GCC associated with the project may be addressed in two ways:

1. *How does the project affect global climate change?* At this time, there is not enough evidence or data available to reasonably conclude the extent to which any single project will affect GCC. GHG emissions; however, may be quantified on an individual project basis for both direct and indirect emissions. This quantitative information is useful to consider when identifying the project's contribution to cumulative impacts (GCC is by nature a cumulative impact that cannot be attributable to any single project). The quantification of GHG emissions can also be

useful to evaluate design features of a project that serve to reduce potential GHG emissions.

2. *How does climate change affect the project?* Due to the global nature of climate change, this cannot be forecast in a project-specific manner, but potential effects of GCC can have adverse impacts such as sea level rise, wildfire hazard, and water supply reliability, these items should be discussed in the climate change section of the report.

The preliminary proposed amendments to Appendix G of the *CEQA Guidelines* provide the following recommendations to lead agencies for determining the significance of GHG emissions in the Initial Study:

- *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*
- *Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing emissions of greenhouse gases?*

The proposed amendments to the *CEQA Guidelines* Section 15064.4 (Determining the Significance of Impacts from Greenhouse Gas Emissions) provides as:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from the project. A lead agency shall have the discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify greenhouse gas emissions associated with a project and which of any available model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

2. Rely on qualitative or other performance based standards.

(b) A lead agency may consider the following, when assessing the significance of impacts from greenhouse gas emissions, if any, on the environment:

1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements, an EIR must be prepared for the project.

The Natural Resources Agency received the OPR recommended amendments to the *CEQA Guidelines* for GHG emissions on April 13, 2009. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05.

Milestones in the rulemaking process include:

- The Resources Agency has published its Notice of Proposed Action and an Initial Statement of Reasons. It has made the Proposed Guidelines Amendments available on its website (http://www.ceres.ca.gov/ceqa/guidelines/proposed_guidelines_amendments_and_related_materials.html).

- Publication of the Notice started a 45-day public comment period on the Proposed Guidelines Amendments, which ended on August 20, 2009.

- The Resources Agency hosted two (2) public hearings, on August 18, 2009 in Sacramento and August 20, 2009 in Los Angeles, to receive oral comments during the public comment period.

- The Resources Agency has considered all comments received and has made changes to the Proposed Guidelines Amendments. The Resources Agency has opened a public comment period for the proposed revisions to the Proposed Guidelines Amendments. The written comments period extended from October 23, 2009 through November 10, 2009.

The construction and operation of the proposed project would incrementally contribute to GHG emissions along with past, present, and future activities. As such, impacts of GHG emissions are analyzed here on a cumulative basis. In that regard, this analysis determines whether the GHG emissions from the project are cumulatively considerable. (*CEQA Guidelines*, Section 15065(a) (3)).

Currently, there is no adopted threshold of significance for determining the cumulative significance of a project's GHG emissions on GCC. However, the available scientific evidence suggests that even without a net increase in GHG emissions, effects would remain significant due to past and existing emissions levels. In the 2007 Intergovernmental Panel on Climate Change (IPCC) assessment report (IPPC 2007b, Synthesis Report), the IPCC acknowledges that anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks even if GHG concentrations were to be stabilized. The IPCC further found that both past and future anthropogenic CO_2 emissions will continue to contribute to warming and sea level rise for more than a millennium, due to the time scales required for the removal of this gas from the atmosphere (IPPC 2007b, Synthesis Report). Further, the IPCC assessment noted that defining what is dangerous anthropogenic interference with the climate system and, consequently, the limits to be set for policy purposes are complex tasks that can only be partially based on science, as such definitions inherently involve normative judgments (IPCC 2007b – Working Group III).

In the absence of adopted thresholds, in accord with the proposed *CEQA Guidelines* section 15064.4(a)(2), this analysis determines whether the project is consistent with the recommended actions set forth in the 2008 CARB Scoping Plan and the GHG emission reduction measures set forth in the 2006 Climate Action Team (CAT) Report, compliance with the California Attorney General's Mitigation Measures, and compliance with reduction goals or AB 32.

Greenhouse Gas Emissions Inventories

It is estimated that the United States produces approximately 20 percent of global GHG emissions. Each year, the USEPA prepares an inventory of national GHG emissions in order to track emissions trends and compare data on a global level. In the United States, the most abundant GHG emitted by human activity is carbon dioxide, comprising approximately 85 percent of total GHG emissions. Methane emissions, which are associated with livestock and waste decomposition, have steadily declined since 1990. Nitrous oxide emissions, produced by agricultural processes and motor vehicle exhaust, have decreased slightly since 1990. Overall, GHG emissions in the United States have risen by 16.3 percent between 1990 and 2005.

Although California's rate of growth of GHG emissions is slowing, the State is still a substantial contributor. In 2004, the state produced an estimated 492 $MMTCO_2E$ of GHG emissions. It should be noted; however, that between the years of 1990 and 2004, California's population

increased by 16 percent while over the same period the growth of GHG emissions slowed by 9.7 percent. Much of this reduction in GHG emissions can be attributed to energy conservation measures in residential and commercial buildings and appliances implemented under Title 24 of the California Building Code. With the implementation of the stricter 2005 Building Energy Efficiency Standards, the California Energy Commission estimates that residential electricity consumption will be reduced by 20.4 percent, and natural gas consumption will be reduced by 8.3 percent compared to 2001 standards.

Based on the California Energy Commission's estimates, California's residential and commercial sectors are already in compliance with the goals set by AB32 to reduce GHG emissions to 1990 levels, as is presented in Table 3.2-19, *California Greenhouse Gas Emissions (*$MMTCO_2E$*)*.

Table 3.2-19
California Greenhouse Gas Emissions

Sector	1990	2004
Residential	28.97 $MMTCO_2E$	27.86 $MMTCO_2E$
Commercial	12.65 $MMTCO_2E$	12.19 $MMTCO_2E$

Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Building related energy consumption was further reduced by the 2005 Building Energy Efficiency Standards, which apply to new residential and commercial construction. The California Energy Commission estimates that these new standards will reduce energy consumption for nonresidential buildings by 8.3 percent. Compliance with these updated California Building Code Title 24 standards will not only reduce energy consumption and costs, but will further reduce emissions of GHGs when compared to older construction.

Water use efficiency is another measure through which GHG emissions can be reduced. According to the California CAT Report, "19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute, and use water and wastewater. When a unit of water is saved, so too is the energy required to convey, treat, affect local delivery, perform wastewater treatment, and safely dispose of that unit of water." Thus, reduced energy use resulting from water conservation leads to reduced GHG emissions and a reduced project carbon footprint.

Project-Related GHG Emissions

GHG emissions associated with the development and operation of the proposed project were estimated for the following six (6) categories:

(1) increases in emissions from short-term construction activity (fossil-fuel consumption);

(2) increase in emissions from electricity generation to provide power to project uses;

(3) increase in emissions from natural gas use for project uses;

(4) increase in emissions from water/wastewater consumption for project uses;

(5) increase in emissions from solid waste disposal; and

(6) increase in emissions from vehicular-exhaust emissions from daily vehicular activity as a result of the project.

Construction GHG Emissions

During the construction phase of the project, GHG emissions would be released through the burning of fossil-fuel in construction equipment. Emission forecasts for CO_2 and CH_4 were calculated based on CARB's OFFROAD 2007 emissions inventory model and associated methodology. Emissions of nitrous oxide resulting from construction equipment were estimated based on emission factors provided in the Climate Registry document *General Reporting Protocol for the Voluntary Reporting Program*[14] and CARB's OFFROAD 2007 model. Construction equipment and phasing estimates are based on discussions with the project team and are consistent with the construction scenarios presented in Chapter 3.12, *Traffic and Circulation*, of this Draft EIR.

The South Coast Air Quality Management District's (SCAQMD) "Tier-3 methodology" was used to calculate the proposed project-related GHG emissions. As shown in Table 3.2-20, *Construction Greenhouse Gas Emissions*, the construction emissions were totaled for all phases of construction and then amortized over the economic lifetime of the project. These amortized emissions are later added to the annual operational emissions to show the average annual GHG emissions that would occur over the economic lifetime of the project.

Mitigation measures Q1 through Q6 provide co-benefits in terms of reducing the proposed project's criteria pollutants and GHGs produced during the construction phase. However, the extent to which these measures would specifically reduce GHG emissions cannot be accurately estimated at this time; thus, for purposes of this evaluation, no reduction credit in GHG emissions is taken. GHG emissions by construction phase are summarized in Table 3.2-20 and the detailed OFFROAD 2007 emissions inventory outputs and associated construction emission hand calculations summarizes are contained in Appendix B.

[14] The Climate Registry, *General Reporting Protocol for the Voluntary Reporting Program,* October 29, 2007.

Area Source GHG Emissions

Another substantial source of GHG emissions is the combustion of fossil fuels for electricity production, cooking, and heating. While not released on-site, increased GHG emissions resulting from the added electrical demands of the project would be created, since electricity is often generated through the burning of coal, oil, or natural gas. Also, GHGs would be released through commercial natural gas use.

GHG emissions resulting from project energy use were calculated based on average annual commercial energy usage rates published in the *SCAQMD CEQA Air Quality Handbook 1993*. Power generation emission factors for carbon dioxide were obtained from the EPA's eGRID2006 database for the California/Mexico subregion.

Table 3.2-20
Construction Greenhouse Gas Emissions

Phase	Construction Activity	CO_2	N_2O		CH_4	
		mtpy	mtpy	$MTCO_2$ E/yr	mtpy	$MTCO_2$ E/yr
1	Grading	4,592	0.202	62.6	0.047	0.99
	Underground Utility Construction	2,195	0.111	34.4	0.214	4.5
	Paving	847	0.051	15.8	0.106	2.2
	Building/Architectural Coating	3,550	0.270	83.7	0.344	7.2
2	Grading	4,602	0.160	49.6	0.324	6.8
	Underground Utility Construction	2,201	0.081	25.1	0.139	2.9
	Paving	851	0.036	11.2	0.069	1.4
	Building/Architectural Coating	3,572	0.175	54.3	0.208	4.4
3	Grading	4,603	0.150	46.5	0.288	6.0
	Underground Utility Construction	2,202	0.078	24.2	0.122	2.6
	Paving	851	0.033	10.2	0.061	1.3
	Building/Architectural Coating	3,574	0.159	49.3	0.182	3.8
4	Grading	4,606	0.141	43.7	0.233	4.9
	Underground Utility Construction	2,203	0.071	22.0	0.097	2.0
	Paving	852	0.303	93.9	0.048	1.0
	Building/Architectural Coating	3,579	0.137	42.5	0.144	3.0
Total Construction Emissions		44,880	2.158	669.0	2.626	54.99
Annualized Emissions		823.83	0.038	11.87	0.053	1.11

Notes:

Phase	Construction Activity	CO_2	N_2O		CH_4	
		mtpy	mtpy	$MTCO_2$ E/yr	mtpy	$MTCO_2$ E/yr
1. Construction emissions are first totaled over the economic lifetime of the project and then amortized over 30 years, consistent with SCAQMD guidance						
2. Annual Emissions are the average of summer and winter emissions, includes emissions from mobile and area sources.						
Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 2008.						

Commercial natural gas use would be another contributor of GHG emissions for the proposed project. In order to forecast the GHG emissions resulting from natural gas combustion, usage estimates consistent with the URBEMIS 2007 model were used. GHG emissions from natural gas usage were calculated based on EPA emission factors.[15]

Emissions of GHGs would also occur as a result of project water consumption. Water use and energy consumption are closely linked, especially in Southern California, where water supplies are limited and a significant portion of the water supply must be imported. Large amounts of energy are required for the conveyance, treatment, distribution, and end use of water, as well as wastewater treatment. Based on water service demand estimates from the project's *Water Supply Assessment* (Terra Nova Planning and Research, June 2008), it is estimated that the project would require approximately 435 million gallons of water per year at project buildout. With delivered water carrying an estimated embodied energy of 0.0085 kWh/gallon and an emission factor of 0.879 pounds of CO_2 emitted per kWh of electricity produced, it is estimated that water consumption would result in emissions of approximately 1,474 metric tons of CO_2 annually. It should be noted that the embodied energy factor of 0.0085 kilowatt-hours per gallon (kWh/gal) includes 0.0058 kWh/gal for supply, 0.00067 kWh/gal for distribution, and 0.002 kWh/gal for wastewater treatment.[16]

GHG emissions would also occur as a result of municipal solid waste generated by the proposed project. Solid waste generated by the proposed project has the potential to be disposed of in a landfill, where it would emit methane gas as it decomposes. Solid waste generation rates were estimated utilizing data provided by the California Integrated Waste Management Board, and emissions of methane gas resulting from project generated solid waste were estimated utilizing data provided in the document *Solid Waste Management and Greenhouse Gases*.[17]

[15] Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, Volume 1, Chapter 1, External Combustion Sources—Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, Table 1.4-1*, 1998.
[16] QEI, Inc., *Electricity Efficiency Through Water Efficiency, Report for the Southern California Edison Company, p. 24*, 1992.
[17] Environmental Protection Agency, *Solid Waste Management and Greenhouse Gases*, September 2006.

Mobile Source GHG Emissions

The majority of GHG emissions associated with the daily project operations are the result of increased project-related motor vehicle activity. Emissions for carbon dioxide, methane, and nitrous oxide were calculated using trip generation rates available in the report *Hacienda at Fairview Valley Traffic Impact Analysis* (Urban Crossroads, Inc., March 7, 2008). Trip characteristics, such as trips, trip lengths, and percentage of trips, were estimated consistent with the methodology utilized in Section 4.0 of this report. Vehicle emission factors for both starting and running emissions were obtained using the EMFAC 2007 model. Finally, hand calculations consistent with URBEMIS 2007 were applied in order to forecast GHG emissions resulting from project related trips. In order to calculate vehicle emissions of nitrous oxide, a conversion factor based on CARB findings (*Estimates of Nitrous Oxide Emissions from Motor Vehicles and the Effects of Catalyst Composition and Aging*, 2005) was applied to emission factors for oxides of nitrogen. Cruising speeds utilized for the EMFAC 2007 model were estimated at 30 miles per hour (consistent with the URBEMIS 2007 model). Emission factors were calculated by EMFAC 2007 based on the project build out years of 2020 (Phase 1) and 2030 (Phase 2), consistent with the project air and traffic studies. In order to obtain accurate forecasts of GHG emissions resulting from the project, emissions were calculated for both summer and winter temperatures of 80°F and 60°F, respectively. These temperatures were utilized based on the conservative URBEMIS 2007 model default temperatures for the project area. Emissions were also calculated based on project generated trips with and without trip reducing mitigation measures. Table 3.2-21, *Interim 2020 Total Annual Greenhouse Gas Emissions* , and Table 3.2-22, *Buildout 2030 Total Annual Greenhouse Gas Emissions* , summarize GHG emissions resulting from Phase 1 and Phase 2 project-related traffic (respectively). Refer to Appendix B for detailed calculations for mobile source GHG emission.

It is extremely important to note that the Vehicle Miles Traveled (VMT) related to the project emissions estimates do not necessarily represent "new" VMTs. At least some portion of the VMT calculated for the project are likely the product of re-directed VMTs, meaning, trips that would already occur at another geographic location irrespective to development of the proposed project. Therefore the emissions summarized in Tables 3.2-21 and 3.2-22 are likely an overestimation of actual GHG emissions resulting from the proposed project.

Table 3.2-21
Interim 2020
Total Annual Greenhouse Gas Emissions

Source	CO_2	N_2O		CH_4	
	mtpy	mtpy	$MTCO_2$ E/yr	mtpy	$MTCO_2$ E/yr
Construction Activity (Phases 1-4)	823.83	0.038	11.87	0.053	1.11
Mobile Source Emissions	21,538.01	0.65	200.01	1.06	22.22
Energy Use Emissions	5,726.99	0.05	16.16	0.23	4.93
Water Use Related Emissions	807.64	0.01	3.10	0.03	0.63
Municipal Solid Waste Generation				51.19	1,074.96
Natural Gas Emissions	5,061.98	0.09	28.77	0.10	2.04
Total (metric tons per year)	33,958.45	0.84	259.91	52.66	1,105.89
Total (Metric Tons CO_2 Equivalent)	35,324.25				
CO_2 = Carbon Dioxide; N_2O = Nitrous Oxide; CH_4 = Methane					

Notes:
1. Construction emissions are first totaled over the economic lifetime of the project and then amortized over 30 years, consistent with SCAQMD guidance
2. Annual Emissions are the average of summer and winter emissions, includes emissions from mobile and area sources.
Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

Table 3.2-22
Buildout 2030
Total Annual Greenhouse Gas Emissions

Source	CO_2	N_2O		CH_4	
	mtpy	mtpy	$MTCO_2$ E/yr	mtpy	$MTCO_2$ E/yr
Construction Activity (Phases 1-4)	823.83	0.038	11.87	0.053	1.11
Mobile Source Emissions	33,135.08	0.61	188.84	1.21	25.34
Energy Use Emissions	9,582.08	0.09	27.04	0.39	8.24
Water Use Related Emissions	1,473.73	0.01	3.10	0.06	1.26
Municipal Solid Waste Generation				88.50	1,858.44
Natural Gas Emissions	9,056.33	0.17	51.47	0.17	3.65
Total (metric tons per year)	54,071.05	0.92	282.32	90.38	1,898.04
Total (Metric Tons CO_2 Equivalent)	56,251.41				
CO_2 = Carbon Dioxide; N_2O = Nitrous Oxide; CH_4 = Methane					

Notes:
1. Construction emissions are first totaled over the economic lifetime of the project and then amortized over 30 years, consistent with SCAQMD guidance
2. Annual Emissions are the average of summer and winter emissions, includes emissions from mobile and area sources.
Source: Urban Crossroads, Hacienda at Fairview Valley Air Quality Impact Analysis, December 2008.

It is estimated that the proposed project (at buildout) would result in approximately 56,251 $MTCO_2E$. It should be noted that implementation of the project design features for construction and operational activities presented in the Operational Emissions Analysis (Impact 3.2-2) not only reduce emissions of criteria pollutants, but also emissions of GHGs through reduced equipment exhaust emissions, and reduced project water and electrical use.

Consistency with State, Regional and Local Greenhouse Gas Reduction Plans

With the passage of AB 32, the State of California adopted a goal of reducing state-wide emissions to 1990 levels by 2020 and directed CARB to develop a Scoping Plan to meet that goal utilizing cost effective reductions. This threshold is consistent with OPR's proposed draft *CEQA Guidelines* amendments in Appendix G.. The County is currently in the process of preparing a detailed GHG Emissions Inventory and Reduction Plan for all county-controlled operations per the Settlement agreement with the California Attorney General's Office. The Countywide GHG Emissions Reduction Plan is being developed to be consistent with AB32 and the reduction measures therein would focus on reducing vehicle miles traveled, increasing energy efficiency, promoting water conservation, and developing mixed-use developments. By being consistent with the CARB Scoping Plan, the project is anticipated to also be consistent with the Countywide GHG Emissions Reduction Plan GHG Plan, when completed, the CAT strategies, as well as recommendations by the California Air Pollution Control Officers Association (CAPCOA) and the AG's office.

The CAT proposed early action measures to mitigate climate change to meet the Governor's climate reduction targets in the 2006 CAT Report. This report also proposes measures and strategies to help reduce climate change impacts and achieve the Governor's reduction targets defined in Executive Order S-3-05. The project would help achieve State's reduction goal by complying with the reduction strategies specified within the CAT Report (see Table 3.2-23). In addition, the proposed project will implement the recommended Attorney General's Mitigation Measures to reduce California's emissions to levels proposed in Executive Order S-3-05.

Table 3.2-23
Project Compliance with Applicable 2006 CAT Report Greenhouse Gas Emissions Reduction Strategies

Strategy	Project Compliance
Vehicle Climate Change Standards. AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.	**Compliant.** Commercial vehicles that would access the project site during construction would be in compliance with CARB vehicle standards. Additionally, the project requires other measures for all construction equipment that will reduce climate change emissions, including the use of low-sulfur fuel, the use of CARB Tier II Certified or better equipment, and the use of existing power sources or clean-fuel generators. These requirements are imposed by mitigation measures AQ-3 through AQ-5 and will further the CAT strategies regarding vehicle emissions. The CAT strategies will be further met by Specific Plan requirements encouraging the use of Neighborhood Electric Vehicles, which will result in reduced passenger vehicle emissions.
Other Light Duty Vehicle Technology. New standards would be adopted to phase in beginning in the 2017 model	
Heavy-Duty Vehicle Emission Reduction Measures. Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling. In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	**Compliant.** Construction equipment, including heavy-duty diesel trucks that access the project site would be required to limit idling to no more than five (5) minutes by mitigation measure AQ-1.
Hydrofluorocarbon Reduction. 1) Ban retail sale of HFC in small cans; 2) Require that only low GWP refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leaktightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs.	**Compliant.** This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to would comply with the measures.
Alternative Fuels - Biodiesel Blends. CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	**Not Applicable, although** the project does require measures that will reduce emission associated with fuel emissions, including the use of low-sulfur fuel, the use of CARB Tier II Certified or better equipment, and the use of existing power sources or clean-fuel generators. These requirements are imposed by mitigation measures AQ-3 through AQ-5 and will further the purposes underlying the CAT strategies regarding alternative fuels.
Alternative Fuels – Ethanol. Increased use of ethanol fuel.	Not Applicable, although the project does require measures that will reduce emission associated with fuel emissions, including the use of low-sulfur fuel, the use of CARB Tier II Certified or better equipment, and the use of existing power sources or clean-fuel generators. These requirements are imposed by mitigation measures AQ-3 through AQ-5 and will further the purposes underlying the CAT strategies regarding alternative fuels.
Achieve 50 percent Statewide Recycling Goal. Achieving	**Compliant.** Project design includes provisions for recycling

Strategy	Project Compliance
the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	by residents. Additionally, the current rate of recycling/diversion for the Apple Valley area, of which the Hacienda Specific Plan area is a part, is approximately 59 percent; therefore, already meets the State's 50 percent recycling goal and also meets the goal of providing recycling beyond the State's 50 percent goal. (CIWMB 2008, Diversion Rate Measurement Calculation). A curbside recycling program is also in place such that future residents of the project would be able to continue recycling household materials in furtherance of these CAT goals.
Zero Waste - High Recycling. Additional recycling beyond the State's 50 percent recycling goal.	
Landfill Methane Capture. Install direct gas use or electricity projects at landfills to capture and use emitted methane.	**Not Applicable,** because this is not a landfill project.
Urban Forestry. A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	**Compliant**. The project site is currently not in an urban area, but when developed, it would provide native vegetation consistent with the County's Landscape Standards thus furthering the urban forestry program.
Afforestation/Reforestation Projects. Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	
Water Use Efficiency. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	**Compliant**. The project will implement EPA Certified WaterSense labeled or equivalent faucets and high-efficiency toilets (HETs) in residential uses, and implement water-conserving shower heads to the extent feasible. Other examples of water efficiency features included in the project are: the construction of a wastewater treatment plant and reservoir which will hold the reclaimed water and use it for irrigation within the project, the use of drought tolerant plants on a minimum of 90 percent of the project' landscaped areas; limitations on the installation of turf, the use of micro-irrigation methods for watering plants within streets and common areas; and the installation of neighborhood pools to eliminate the need for private pools at individual homes.
Building Energy Efficiency Standards in Place and in Progress. Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings)	**Compliant.** Project would be compliant because buildings within the project will be constructed in a manner that **exceeds** the energy efficiency provisions of Title 24 by a minimum of 15 percent.
Appliance Energy Efficiency Standards in Place and in Progress. Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	**Consistent.** Appliances purchased for use in project would be consistent with existing energy efficiency standards. Additionally, the project will include the installation of cool roofs, energy efficient appliances (such as water heaters and heating/cooling systems), energy efficient insulation, and place limitations on the hours of outdoor lighting.

Strategy	Project Compliance
Smart Land Use and Intelligent Transportation Systems (ITS). Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment.	**Compliant.** The proposed project locates retail next to residential land uses, which is considered smart land use. Because the project is locating retail next to residential, providing higher density development, and providing local jobs, the project would likely reduce the number of vehicle trips and vehicle miles traveled, reducing greenhouse gas emissions as a result. In addition the project incorporates three transit stops which have the potential to reduce trips as well.
Measures to Improve Transportation Energy Efficiency. Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.	**Compliant.** The proposed project promotes fuel conservation through design features, which promote pedestrian traffic. Other examples of traffic efficiency features included in the project are: streets designed for Neighborhood Electric Vehicles; multiple public transit stops; recreation areas within walking distance of majority of active adult residences, the provision of bicycle lanes,; and the promoting of ride-share programs.
Green Buildings Initiative. Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels.	**Compliant.** With implementation of the recommended mitigation and project design features, the project will reduce energy use as compared to more traditional, business-as-usual developments. Additionally, the project is consistent with energy standards required by Title 24. With implementation of the 2008 Title 24 standards electricity use is estimated to be reduced by 22.7 percent compared to 2005 standards for residential uses and 27.6 percent compared to 2005 standards for nonresidential newly constructed buildings.
California Solar Initiative. Installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	**Compliant.** Project Specific Plan requires a minimum of 25 percent of total residential units to be powered primarily by solar energy.

Source: State of California, *Environmental Protection Agency, Climate Action Team*, 2006.

As indicated in section 15064(b) of the CEQA Guidelines, the determination of significance of any impact is not "ironclad;" rather, the "determination of whether a project may have a significant effect on the environment calls for a "careful judgment" by the County based, to the extent possible, on scientific and factual data. As stated above, the County has not yet adopted a numeric threshold of significance for emissions of GHGs. Table 3.2-23 presents an explanation as to how the project is consistent with the CAT Report GHG reduction strategies

and also notes whether the strategy is applicable to the project. A project that is consistent with CAT strategies is consistent with the strategies suggested to reduce California's emissions to the levels proposed by Executive Order S-3-05 and AB 32.

GHG Emissions Reductions Quantification

There are existing and proposed State measures that would contribute towards the reduction of GHG emissions for the project. Those that would apply to the Interim phase of the proposed project are presented in Table 3.2-24, *Existing and Proposed State Measures-Greenhouse Gas Emissions Reductions (Interim [2020])*. These measures would result in a reduction of approximately 5,118 $MTCO_2E$ (15 percent) of 2020 BAU emissiions for the Interim phase of the proposed project. Emissions Reductions are expressed in comparison to "business as usual (BAU)," which represent the emissions that would be expected to occur in the absence of any GHG reductions actions.

Table 3.2-24
Existing and Proposed State Measures
Greenhouse Gas Emissions Reductions
(Interim 2020)

Measure	Sector	Percent Reduction from BAU (Sector Specific)	$MTCO_2E$
Renewable Portfolio Standard	Energy Use	6.2	356.38
AB 1109 Energy Efficiency Standards for Lighting (Residential and Commercial Indoor and Outdoor Lighting)	Energy Use	10 (residential) 9.3 (commercial)	464.69 (residential) 100.45 (commercial)
Electricity Energy Efficiency (AB32)	Energy Use	5.9	339.14
Assembly Bill 1493: Pavley I	Transportation	9.3	2,023.70
Assembly Bill 1493: Pavley II	Transportation	1.3	282.88
Executive Order S-1-07 (Low Carbon Fuel Standard)	Transportation	7.4	1,610.26
Subtotal – $MTCO_2E$ Reduced			**5,177.50**
2020 BAU Emissions			**35,324.25**

Table 3.2-25, *Project Mitigation Measures-Greenhouse Gas Emissions Reductions (Interim 2020)*, includes the quantification of GHG emissions reductions as a result of implementation of project Mitigation Measures. These measures are recommended by the California Attorney General's Office to be considered during design and construction of the project, which address energy efficiency, transportation, water conservation, and solid waste. These measures would result in a reduction of 5,948 $MTCO_2E$ (17 percent) of 2020 BAU emissions. The total reduction of State measures and Mitigation Measures for Interim phase of the project would be approximately 11,126 $MTCO_2E$, and the reduction from BAU would be approximately 32 percent.

Table 3.2-25
Project Mitigation Measures
Greenhouse Gas Emissions Reductions
(Interim 2020)

Measure	Sector	Percent Reduction from BAU (Sector Specific)	CO_2E
Require that a minimum of 25 percent of the total residential units constructed within the Specific Plan Area shall be powered primarily by solar energy.	Energy Use (Residential Only)	25.0	1,161.71
Construction of buildings that exceed minimum statewide energy requirements 15 percent beyond Title 24.	Energy Use	15.0	697.03
Provide shade (within 5 years) and/or use light-colored/high albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's nonroof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50 percent of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the parking lot area. The mitigation measure reduces heat islands (thermal gradient differences between developed and undeveloped areas to minimize impact on microclimate and human and wildlife habitats. This measure requires the use of patented or copyright protected methodologies created by the ASTM. The SRI is a measure of the constructed surface's ability to reflect solar heat, as shown by a small rise in temperature. It is defined	Energy Use (CAPCOA Mitigation Measure E-8)	1.0	57.48

so that a standard black (reflectance 0.05, emittance 0.90) is "0" and a standard white (reflectance 0.80, emittance 0.90) is 100. To calculate SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980-01. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Default values for some materials will be available in the LEED-NC v2.2 Reference Guide.			
Project will require a minimum of 25 percent of the total constructed residential units shall provide solar and/or tankless water heaters. Project will require a minimum of 50 percent of the total constructed residential units shall provide energy-efficient air conditioning systems.	Energy Use (Residential Only)	5.0	232.34
"Pass-By" Trips (Commercial Trips)	Transportation	13.53	2,944.16
Internal streets will have maximum speed limits which accommodate neighborhood electric vehicles (NEVs). Project will require installation of electric charging station(s) at the neighborhood commercial center.	Transportation	1.0	217.60
Designate multiple transit stops throughout the site in order to service future public transportation routes.	Transportations	1.0	217.60
Entire project is located within one-half mile of an existing/planned Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility. Project design includes a designated bicycle route connecting all units, onsite bicycle parking facilities, offsite bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within one half mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet have Class II bicycle lanes on both sides.	Transportation (CAPCOA Mitigation Measure T-4)	0.625	136.00
Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance between project and existing or planned adjacent uses is minimized or nonexistent. Setback distance between different buildings on project site is minimized. Setbacks between project buildings	Transportation (CAPCOA Mitigation Measure D-2)	0.5	108.80

and planned or existing sidewalks are minimized. Buildings are oriented towards existing or planned street frontage. Primary entrances to buildings are located along planned or existing public street frontage. Project provides bicycle access to any planned bicycle corridor(s). Project provides pedestrian access to any planned pedestrian corridor(s).			
Increase water use efficiency and decrease water use demand through the following improvements: • Require a minimum of 90 percent of all non-turf planting areas in common areas and street right of ways to utilize drought tolerant and/or native plant materials. • Establish a maximum percentage of turf grass coverage in common and residential front yards for lots ¾ acre and larger (19 percent max) and less than ¾ acre (28 percent max). • Eliminate "non-functional" turf grass coverage allowed in recreation areas. • Provide a wastewater treatment system which reuses reclaimed water to irrigate common area and street right of way landscape. • Require micro-irrigation systems for watering of plants within common areas and street right of ways. • Implementation of Specific Plan Design Guidelines to strongly encourage incorporation of water saving features and technologies within residential and commercial buildings. • Provide community pool(s) at the community recreation areas within convenient distance from the majority of active adult homes to reduce the need for private pools at individual homes and thus decrease supplemental water requirements at individual lots. • Low flow faucets as well as high-efficiency toilets shall be installed in restrooms.	Water Use Related Emissions	15.0	121.71
• Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). • Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. • Provide education and publicity about reducing waste and available recycling services.	Solid Waste Generation	5.0	53.75

Subtotal – $MTCO_2E$ Reduced	**5,948.18**
2020 BAU Emissions	**35,324.25**

The existing and proposed State measures that would apply to the Buildout phase of the proposed project are presented in Table 3.2-26, *Existing and Proposed State Measures-Greenhouse Gas Emissions Reductions (Buildout 2030)*. These measures would result in a reduction of 8,117 $MTCO_2E$ (14 percent) of the 2030 Buildout emissions.

Table 3.2-26
Existing and Proposed State Measures
Greenhouse Gas Emissions Reductions
(Buildout 2030)

Measure	Sector	Percent Reduction from BAU (Sector Specific)	CO_2E
Renewable Portfolio Standard	Energy Use	6.2	596.28
AB 1109 Energy Efficiency Standards for Lighting (Residential and Commercial Indoor and Outdoor Lighting)	Energy Use	10 (residential) 9.3 (commercial	850.19 (residential) 100.45 (commercial)
Electricity Energy Efficiency (AB32)	Energy Use	5.9	567.42
Assembly Bill 1493: Pavley I	Transportation	9.3	3,101.48
Assembly Bill 1493: Pavley II	Transportation	1.3	433.54
Executive Order S-1-07 (Low Carbon Fuel Standard)	Transportation	7.4	2,467.85
Subtotal – $MTCO_2E$ Reduced			**8,117.21**
2030 BAU Emissioins			**56,251.41**

Table 3.2-27, *Project Mitigation Measures-Greenhouse Gas Emissions Reductions (Buildout 2030)*, includes the quantification of GHG reductions as a result of implementation of project Mitigation Measures. These measures are recommended by the California Attorney General's Office to be considered during design and construction of the project, which include energy efficiency, transportation, water conservation, and solid waste. These measures would result in a reduction of approximately 8,781 $MTCO_2E$ (16 percent) of 2030 Buildout emissions. The total reduction for the Buildout phase of the project between State measures and Mitigation

Measures would be approximately 16,898 $MTCO_2E$, and the reduction from BAU would be approximately 30 percent.

Table 3.2-27
Project Mitigation Measures
Greenhouse Gas Emissions Reductions
(Buildout 2030)

Measure	Sector	Percent Reduction from BAU (Sector Specific)	CO_2E
Require that a minimum of 25 percent of the total residential units constructed within the Specific Plan Area shall be powered primarily by solar energy.	Energy Use (Residential Only)	25.0	2,125.49
Construction of buildings that exceed minimum statewide energy requirements 15 percent beyond Title 24.	Energy Use	15.0	1,442.60
Provide shade (within 5 years) and/or use light-colored/high albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's nonroof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50 percent of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the parking lot area. The mitigation measure reduces heat islands (thermal gradient differences between developed and undeveloped areas to minimize impact on microclimate and human and wildlife habitats. This measure requires the use of patented or copyright protected methodologies created by the ASTM. The SRI is a measure of the constructed surface's ability to reflect solar heat, as shown by a small rise in temperature. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is "0" and a standard white (reflectance 0.80, emittance 0.90) is 100. To calculate SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980-01. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Default values for some materials will be available in the LEED-NC v2.2 Reference Guide.	Energy Use (CAPCOA Mitigation Measure E-8)	1.0	96.17

Project will require a minimum of 25 percent of the total constructed residential units shall provide solar and/or tankless water heaters. Project will require a minimum of 50 percent of the total constructed residential units shall provide energy-efficient air conditioning systems.	Energy Use (Residential Only)	5.0	425.09
"Pass-By" Trips (Commercial Trips)	Transportation	10.0	3,334.93
Internal streets will have maximum speed limits which accommodate neighborhood electric vehicles (NEVs). Project will require installation of electric charging station(s) at the neighborhood commercial center.	Transportation	1.0	333.49
Designate multiple transit stops throughout the site in order to service future public transportation routes.	Transportations	1.0	333.49
Entire project is located within one-half mile of an existing/planned Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility. Project design includes a designated bicycle route connecting all units, onsite bicycle parking facilities, offsite bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within one half mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet have Class II bicycle lanes on both sides.	Transportation (CAPCOA Mitigation Measure T-4)	0.625	208.43
Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance between project and existing or planned adjacent uses is minimized or nonexistent. Setback distance between different buildings on project site is minimized. Setbacks between project buildings and planned or existing sidewalks are minimized. Buildings are oriented towards existing or planned street frontage. Primary entrances to buildings are located along planned or existing public street frontage. Project provides bicycle access to any planned bicycle corridor(s). Project provides pedestrian access to any planned pedestrian corridor(s).	Transportation (CAPCOA MM D-2)	0.5	166.75
Increase water use efficiency and decrease water use demand through the following improvements:	Water Use Related Emissions	15.0	221.71

• Require a minimum of 90 percent of all non-turf planting areas in common areas and street right of ways to utilize drought tolerant and/or native plant materials. • Establish a maximum percentage of turf grass coverage in common and residential front yards for lots ¾ acre and larger (19 percent max) and less than ¾ acre (28 percent max). • Eliminate "non-functional" turf grass coverage allowed in recreation areas. • Provide a wastewater treatment system which reuses reclaimed water to irrigate common area and street right of way landscape. • Require micro-irrigation systems for watering of plants within common areas and street right of ways. • Implementation of Specific Plan Design Guidelines to strongly encourage incorporation of water saving features and technologies within residential and commercial buildings. • Provide community pool(s) at the community recreation areas within convenient distance from the majority of active adult homes to reduce the need for private pools at individual homes and thus decrease supplemental water requirements at individual lots. • Low flow faucets as well as high-efficiency toilets shall be installed in restrooms.			
• Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). • Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. • Provide education and publicity about reducing waste and available recycling services.	Solid Waste Generation	5.0	92.92
Subtotal – $MTCO_2E$ Reduced			**8,781.07**
2030 BAU Emissioins			**56,251.41**

Conclusion

GHG emissions would be reduced with implementation of the project design features and Mitigation Measures. The proposed Specific Plan establishes goals and requirements to reduce GHGs by addressing land use, transportation, water, and energy efficiency. As shown in Tables

3.2-24 through 3.2-27, the proposed project would comply with existing and proposed State measures for reducing GHGs and would include design features recommended by the California Attorney General's office that would result in GHG reductions. GHGs resulting from the Interim phase of the project would be reduced by approximately 11,125.68 $MTCO_2E$, and the reduction from BAU would be approximately 32 percent. GHGs from the buildout phase of the project would be reduced by approximately 16,898 $MTCO_2E$, and the reduction from BAU would be approximately 30 percent. The reductions from BAU under both the Interim and Buildout phases of the project would; therefore, comply with AB 32. AB 32 requires the reduction of GHG emissions to 1990 levels which would require a 28 to 33 percent reduction in BAU of GHG emissions for the entire State. Although the proposed project would not hinder the State from meeting its GHG reduction goal, and GHG emissions are less than significant on an individual project basis, the project's incremental contribution to GHG emissions may be cumulatively considerable.

3.2.5 SIGNIFICANT UNAVOIDABLE IMPACTS

Implementation of the proposed project would result in a significant and unavoidable impact for the following areas:

- Regional Construction Related Emissions – As shown in Tables 3.2-11 through 3.2-14, activities related to construction of the project would exceed the MDAQMD daily emission threshold for after implementation of all feasible mitigation measures. Therefore, the construction of the project would have a significant and unavoidable impact on regional air quality.

- Long-term operational project emissions – For regional emissions, after the implementation of the recommended mitigation measures, emissions resulting from long-term operational activity would exceed the regional pollutant threshold for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$.

- Because the proposed project would exceed the maximum population density for the site and proposes a more intense land use, the project is considered not to be consistent with the applicable air quality management plans, and significant impacts may occur with regard to this threshold.

  Cumulative Emissions – Because the proposed project is not consistent with the applicable AQMP and project emissions are significant on an individual project basis, it is assumed that the project's incremental contribution to criteria pollutant emissions may be cumulatively considerable. The proposed project would not hinder the State from meeting its GHG reduction goal and GHG emissions are less than significant on an individual project basis; however, it is assumed that the project's incremental contribution to GHG emissions may be cumulatively considerable.

If the County of San Bernardino approves the project, the County shall be required to cite their findings in accordance with Section 15091 of CEQA and prepare a Statement of Overriding Considerations in accordance with Section 15093 of CEQA.

3.3 BIOLOGICAL RESOURCES

This section evaluates biological resources and the short-term and long-term impacts resulting from the buildout of the Hacienda at Fairview Valley Specific Plan. Information in this section is based on the *Final Focused Biological Survey and Jurisdictional Delineation*, prepared by Tom Dodson & Associates in January 2009 (located in Appendix C), the *Final Focused Biological Survey and General Biological Assessment for Offsite Improvements Associated with the Hacienda at Fairview Valley Project*, prepared by Tom Dodson & Associates in February 2009 (located in Appendix D), the *Joshua Tree Survey Report,* prepared by PCR Services Corporation in December 2008, and the *Joshua Tree Management Program,* prepared by PCR Services Corporation in March 2009 (located in Appendix E).

3.3.1 ENVIRONMENTAL SETTING

On-site Conditions

The proposed project is generally located northwest of the Town of Apple Valley in Fairview Valley. Specifically, the site is in a bajada nestled between Fairview Mountain, Sidewinder Mountain, and the Granite Mountains. On-site topography generally ranges from approximately 3,080 to 4,000 feet above mean sea level (msl). With the exception of some isolated rocky outcrops and peripheral hills, topography is relatively flat with an overall slope at 9 percent or less.

The local area climate is semi-arid, characterized by hot summers, mild winters, infrequent rainfall, and dry humidity. The average annual temperature is 62 degrees Fahrenheit, with a range from 9 to 112 degrees Fahrenheit. The average annual rainfall is approximately 4.5 inches with a range of 1.1 to 11.2 inches.

The proposed project area shows moderate levels of disturbance that are both historical and ongoing. There are historical structures and old trash dumps as well as evidence of off-road-vehicle use, feral dogs, and recent dumping. The land use in the vicinity of the proposed project are rural residential.

Off-site Conditions

The proposed off-site improvements bordering the Hacienda at Fairview Valley development are generally located northeast of the Town of Apple Valley in Fairview Valley, in a bajada nestled between Fairview Mountain, Sidewinder Mountain, and the Granite Mountains. The total area of disturbance proposed by the four potential off-site detention basins and water

tank/reservoir areas is approximately 34.5 acres and the total area of disturbance proposed for the road improvements is approximately 12.4 acres.

There are high levels of ongoing disturbance along Cahuilla Road and Chicago Road. There are residential structures and old trash dumps as well as evidence of off-road-vehicle use, feral dogs, and recent dumping. There is very little evidence of disturbance in the vicinity of the potential off-site detention basins and water tank/reservoir sites. The land uses in the vicinity of the proposed project are rural residential.

Plant Communities

The proposed project site and surrounding areas are characterized by a single plant community, Mojave creosote bush scrub. Mojave creosote bush scrub is dominated by creosote bush, Joshua tree, burrobrush, and California buckwheat. A small patch of wetland habitat also exists within the proposed project area near Quail Spring.

Sensitive Biological Resources

The biological resource analysis for the proposed project area includes an evaluation of both onsite and offsite sensitive biological resources. The California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) identifies plants and habitats considered to be sensitive, due to their scarcity or their potential to support State and/or Federal listed endangered or threatened plants. All records of special status species were reviewed that occur within the 7.5-minute United States Geological Survey (USGS) Fairview Valley Quadrangle as well as the surrounding quads: Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North.

Botanical Surveys

Botanical surveys were conducted on March 7, 2005 and September 4, 2007. Prior to visiting the site, CNDDB was checked for known occurrences of special status species in the area. The CNDDB did not indicate the known presence of plant species of concern within the proposed project area. However, twelve sensitive plant species were identified as potentially occurring within the vicinity of the proposed project area, including; Shockley's rock cress, Cushenbury milkvetch, alkali mariposa lily, Booth's evening primrose, desert springparsley, Barstow wooly sunflower, Parish's phacelia, Parish's popcorn-flower, Parish's alkali grass, Latimer's woodland-gilia, Salt Spring checkerbloom, and white pygmy-poppy.

Shockley's Rock Cress

Shockley's rock cress is an herbaceous perennial in the Brassicaceae plant family. It occurs in southeastern California, southern Nevada, and western Utah. It occurs in the 875-2205m elevational range in pinyon and juniper woodland on ridges, rocky outcrops and openings on limestone or quartzite.

While the proposed project site is marginally within elevational range of Shockley's rock cress, it is more arid than is typical for this species, and there is no pinyon-juniper woodland located onsite. This species was not found during the botanical surveys. The nearest recorded collection of this species is 12 miles to the southeast at 1250m elevation.

Cushenbury Milk-vetch

Cushenbury milk-vetch is an herbaceous perennial in the Fabaceae plant family. It is a California endemic that occurs in the 1095-2000m range. Cushenbury milk-vetch occurs on sandy or stony flats, rocky hillsides, canyon, washes, or fans on granite or mixed granitic-calcareous debris associated with Joshua tree woodland, mojavean desert scrub or pinyon and juniper woodland.

While the proposed project site is marginally within elevational range of Cushenbury Milk-vetch, it is more arid than is typical for this species. In addition, calcareous derived soils do not exist on or adjacent to the proposed project site to support this species. This species was not found during the botanical surveys. The nearest recorded collection of this species is approximately 18.5 miles southeast of the proposed project site.

Alkali Mariposa Lily

Alkali mariposa lily is an herbaceous perennial in the Liliaceae plant family. It occurs in southern California and southern Nevada in the 90-1595m elevation range. It is associated with chaparral, chenopod scrub, mojavean desert scrub, alkaline meadows and ephemeral wash communities, but it is primarily an alkaline meadow species.

Alkali mariposa lily is primarily an alkaline meadow species, a habitat that does not occur on the proposed project site. Some potential habitat could occur at Quail Spring, but the springs are well drained and did not accumulate on site and no meadow or alkaline marsh formed. No Calochortus species were found during the botanical surveys. The nearest known occurrence of this species is approximately 8.2 miles southeast of the proposed project site.

Booth's Evening Primrose

Booth's evening-primrose is an annual species in the Onagraceae plant family that occurs throughout the western United States and into Mexico. In California, it occurs 900-2400-meter (m) elevation on sandy flats and steep, loose slopes associated with Joshua tree woodland or pinyon-juniper woodland.

The proposed project site is within the elevational range of Booth's evening-primrose and there was apparent habitat for the species. However, the species was not found on the proposed project site. The species is distinctive in form with fruiting skeletons recognizable for a year or more past senescence. The nearest recorded occurrence for this species is approximately 10.5 miles to the west-southwest.

Desert Springparsley

Desert springparsley is an herbaceous perennial in the Apiaceae plant family. It is a western Mojave Desert endemic occurring between 625 m and 910 m elevations. It is associated with fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand in Joshua tree woodland and mojavean desert scrub.

Most occurrences of desert springparsley are located near or in Edwards Airforce Base, but there are historic occurrences of the species recorded in the general Apple Valley area. However, there is no recorded evidence of the species east of the 15 freeway since 1920. The site is located above the reported elevational range for the species, although soil types are appropriate. This species was not found during the botanical surveys.

Barstow Wooly Sunflower

Barstow wooly sunflower is an annual in the Asteraceae plant family. It is a central Mojave Desert endemic occurring between 500-900 m elevation. It is associated with open, silty or sandy areas or margins of playas in desert chenopod scrub and mojavean desert scrub.

Barstow woolly flower is very similar to the congeneric *E. pringlei* which has been collected in the area. However, *E. pringlei* was also not found to occur on the proposed project site. The site is located slightly above the known elevational range with marginal habitat. However, the species was not found during the botanical surveys. There are historical collections from the general area, approximately 15.5 miles northeast near Stoddard Wells.

Parish's Phacelia

Parish's phacelia is an annual in the Hydrophyllaceae plant family. It occurs in San Bernardino County, California, southern Nevada, and western Arizona at elevations of 535-1200 m. It is associated alkaline flats and slopes, clay soils and playas in Mojavean desert scrub.

The proposed project site is within the elevational range of Parish's phacelia. However, there are no developed alkali flats or clay areas. Two congeneric species occur on the proposed project site, including *P. campanularia* and *P. distans.* Of these two, *P. campanularia* is most similar to Parish's Phacelia. However, *P. campanularia* is much taller and generally larger with flowers five to six times larger than those of Parish's Phacelia. This species was not found during the botanical surveys. The nearest known collection of this species is located approximately 8.2 miles southeast of the proposed project site.

Parish's Popcorn-Flower

Parish's popcorn-flower is an annual in the Hydrophyllaceae (formerly Boraginaceae) plant family. It is a Mojave Desert endemic that occurs at 750-1400 m elevation. It is associated with alkaline soils and mesic sites in Great basin scrub and Joshua tree woodlands.

The proposed project site is within the elevational range of Parish's popcorn-flower and there is potential habitat for this species at Quail Spring. However, as noted above, there are no developed alkali flats and no hydrophyllaveae were found in the mesic habitat at Quail Spring. The nearest collection of this species is located approximately 8.2 miles southeast of the proposed project site.

Parish's Alkali Grass

Parish's alkali grass is an annual species in the Poaceae plant family. It occurs in California, Arizona and New Mexico at 695-1000 m elevations within desert meadows and seeps. Parish's alkali grass is associated with alkali springs and seeps in Joshua tree woodland.

The proposed project site is located above the elevational range for Parish's alkali grass. There is potential habitat around Quail Spring. However, the species was not found during the botanical surveys. There were six species of grass found to occur on the proposed project site, including three annual species. None occurred in the appropriate habitat at Quail Spring and the annual species were widespread and non-native species. The nearest collection of this species is located approximately 8.2 miles southeast of the proposed project site.

Latimer's Woodland-Gilia

Latimer's woodland-gilia is an annual in the Polemoniaceae plant family. It occurs only in California at the elevation 400-1900 m. It is associated with sandy or rocky substrates in chaparral and mojavean desert scrub.

The proposed project site is located within the elevational range for Latimer's woodland gilia. A *gilia sp* was found on the proposed project site but was not identifiable. This specimen was found on the lower bajada in mesic rocky outcrops and upper drainage where *Saltugulia* species would be expected. A number of *Gilia* have been collected in the area and it is likely one of these species that are common to the area. The nearest collection of Latimer's woodland-gilia is located approximately 12.3 miles south-southeast of the proposed project site.

Salt Spring Checkerbloom

Salt Spring checkerbloom is an herbaceous perennial in the Malvaceae plant family that occurs throughout western North America at 0-1500 m elevation. It is associated with alkali playas and brackish marshes in chaparral, coastal scrub, lower montane coniferous forest and mojavean desert scrub.

There was potential habitat at Quail Spring for Salt Spring checkerbloom, but as discussed above, the spring does not form an alkali playa or marsh. This species was not found and no similar species were found in this area. The nearest collection of this species is approximately 8.2 miles southeast of the proposed project site.

White Pygmy-Poppy

White pygmy-poppy is an annual herb that is native to Calfornia. It occurs only in California. It is associated with creosote bush scrub, mojavean desert scrub, and Joshua tree woodland areas.

Suitable habitat occurs onsite. However, this species was not found during site surveys.

Table 3.3-1, *Special Status Plant Species Occurring On-Site and Off-Site,* lists the 12 sensitive plants that have been recorded within the USGS-Fairview Valley Quadrangle as well as the surrounding Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North Quadrangels, and therefore, could potentially occur on the proposed project site. As identified in Table 3.1-1, no sensitive plant species were identified on-site or in the vicinity of the off-site improvements during the 2005 and 2007 surveys.

Table 3.3-1:
Special Status Plant Species Occurring On-Site and Off-Site

Species	Status	Habitat	Presence/Description
Alkali Mariposa Lily *(C. striatus)*	Sensitive Species	Chaparral, Chenopod Scrub, Mojavean Desert Scrub, Meadows	No suitable habitat occurs on Site. **Species was not found during surveys.**
Barstow Wooly Sunflower *(E. mohavense)*	Sensitive Species	Desert Chenopod Scrub, Mojavean Desert Scrub, Desert Playas	Suitable habitat occurs on site. **Species was not found during surveys.**
Booth's Evening Primrose *(C. boothii ssp. boothii)*	Sensitive Species	Joshua Tree Woodland, Pinyon-Juniper Woodland	Marginally suitable habitat occurs on site. **Species was not found during surveys**.
Cushenbury Milkvetch *(A. albens)*	Endangered	Joshua Tree Woodland, Mojavean Desert Scrub, Pinyon-Juniper Woodland	Suitable habitat occurs on site. **Species was not found during surveys.**
Desert Springparsley *(C. deserticola)*	Sensitive Species	Joshua Tree Woodland, Mojavean Desert Scrub	Suitable habitat occurs on site. **Species was not found during surveys.**
Latimer's Woodland-Gilia *(S. latimeri)*	Sensitive Species	Chaparral, Mojavean Desert Scrub	Suitable habitat occurs on site. **Species was not found during surveys.**
Parish's Alkali Grass *(Puccinellia parishii)*	Sensitive Species	Meadows and Seeps	No suitable habitat occurs on Site. **Species was not found during surveys.**
Parish's Phacelia *(Phacelia parishii)*	Sensitive Species	Mojavean Desert Scrub, Playas	No suitable habitat occurs on Site. **Species was not found during surveys.**
Parish's Popcorn-Flower *(Plagiobothrys parishii)*	Sensitive Species	Great Basin Scrub, Joshua Tree Woodland	No suitable habitat occurs on Site. **Species was not found during surveys.**
Salt Spring Checkerbloom *(S. neomexicana)*	Sensitive Species	Alkali Playas, Brackish Marshes, Chaparral, Coastal Scrub, Lower Montane Coniferous Forest, Mojavean Desert Scrub	No suitable habitat occurs on Site. **Species was not found during surveys.**
Shockley's Rock Cress *(A. Shockley)*	Sensitive Species	Pinyon-Juniper Woodland	No suitable habitat occurs on Site. **Species was not found during surveys.**
White Pygmy-Poppy *(Canbya candida)*	Sensitive Species	Joshua Tree Woodland, Mojavean Desert Scrub	Suitable habitat occurs on site. **Species was not found during surveys.**

Joshua Tree Survey

Joshua trees are not a Federally or State protected endangered species, threatened species, or species of concern; however, they are a biologically valuable resource to wildlife in the region and are hence regulated under the County Development Code Ordinance prohibiting the removal of Joshua trees without a required finding by the review authority concerning the tree's location or condition (Section 88.01.050). This Ordinance also requires that all transferable Joshua trees that are proposed for removal be transplanted or stockpiled for future transplanting whenever possible.

A Joshua tree survey was conducted to determine the size of the existing Joshua tree population found on-site to satisfy the County's Joshua tree reporting requirements for CEQA. A total of 948 Joshua trees were fully assessed in the focused Joshua tree surveys within three sampling areas of the proposed project site. These trees were inventoried, mapped and assessed for their health condition and transferability. Out of the surveyed trees: 361 trees (38 percent) were considered transferable, 172 trees (18 percent) are classified as potentially transferable and 415 trees (44 percent) percent were classified as non-transferable. Based on the methodology and results of the focused survey areas and density category mapping across the entire site, the estimated total number of Joshua trees on the 1,557 acre proposed project site is 3,891 trees (2.5 trees per acre average density). The exact locations, health and transferability of these trees shall be inventoried prior to approval of any tentative tract maps per the County Ordinance requirements (Section 88.01.050).

Sensitive Wildlife Species

The California Native Diversity Data Base (CNDDB) indicated eleven sensitive species have been documented to occur in USGS-Apple Valley South Quadrangle, 7.5 Minute Series. The special status wildlife species identified to have a potential to occur within the vicinity of the proposed project area include pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), Mohave ground squirrel (*Spermophilus mohavensis*), desert tortoise (*G. agassizii*), burrowing owl (*A. cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Silver-haired bat (*Laioinycteris noctivagans)*, and Coast (San Diego) horned lizard (*Phrynosoma coronatum).*

Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*)

Pallid San Diego pocket mouse is considered a moderately sized pocket mouse, ranging in length from 170 to 200 mm and weighing from 17 to 22 grams. There is very little difference in size between males and females. Both are colored a dark brown on top and white underneath, with spines that are black on the rump and white on the hips. The tail length is shorter than the

body by about 20 mm, it has a darkly colored dorsal crest and is light below. The northwestern San Diego pocket mouse inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. It inhabits open, sandy areas of both the Upper and Lower Sonoran life-zones of southwestern California and northern Baja California. The San Diego pocket mouse generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates and to a lesser extent, shrubby areas. In western Riverside County, the San Diego pocket mouse also commonly is found in disturbed grassland and open sage scrub vegetation with sandy-loam to loam soils.

Like other desert-adapted heteromyid rodents, the San Diego pocket mouse primarily is a granivore (seed eater). Arid grassland and desert environments support a surprising diversity of coexisting rodent granivores. The diversity and number of coexisting species vary depending on local conditions and the requirements of the constituent species. Pocket mice and other heteromyid rodents dig burrows, which moves the soils and provides habitat and refugia for other species, including other rodents, reptiles, amphibians, birds and invertebrates. The San Diego pocket mouse appears to be sensitive to habitat fragmentation and degradation. The San Diego pocket mouse tended to occur in habitat patches with 90-100 percent shrub cover, with only two of eight occupied patches having shrub cover of 50 percent and 75 percent. This species is still relatively common in sage scrub, chaparral, and grassland habitats.

Townsend's Big-Eared Bat *(C. townsendii)*

Townsend's big-eared bat sports prominent ears that look almost like wings. Townsend's big-eared bat largely preys on moths over open pasture and forest canopy. For females, foraging increases during pregnancy and lactation, from one or two foraging bouts per night to three, and the distance traveled also increases, from 1.0 km to more than 4.0 km per night. Females form maternity groups in the spring, in caves and shelters, where they give birth to a single pup. In addition to winter hibernation, these bats also experience daily periods of torpor during cooler weather, a sleeplike state of reduced motor and metabolic activity. Townsend's big-eared bat occurs in the western United States, northward to British Columbia, as far east as the Rocky Mountain States from Idaho to Texas, including Kansas and Oklahoma, and there are also populations in Arkansas, Missouri, Kentucky, Virginia, and West Virginia.

Townsend's big-eared bats are found throughout western North America, from British Columbia south to Oaxaca, Mexico, with two endangered subspecies in isolated areas in the Ozark and Central Appalachian regions of the United States. Their most typical habitat is arid western desert scrub and pine forest regions. These agile fliers venture out to forage only after dark, using their keen echolocation to hunt moths and other insects. In the spring and summer, females form maternity colonies in mines, caves, or buildings, while males roost individually. In winter, these bats hibernate in caves and abandoned mines. They are extremely sensitive to

disturbance at their roosting sites and have suffered severe population declines throughout much of the United States.

Western Mastiff Bat *(E. perotis californicus)*

Western mastiff bat is the biggest North American bat, with a body length of 5.5 to 7.5" and a wingspan of over 22". The western mastiff bat has dark brown fur which is white at the base. This species has huge ears, joined at base and extending out over forehead like a bonnet. They occur in two populations: one population is from the southwestern United States to central Mexico, and the second is located in the central and northern portions of South America. The western mastiff bat is found in desert scrub, chaparral, mixed conifer forest, giant sequoia forests, and montane meadows. In the southwestern United States, day roosts are generally found in areas with rugged, rocky canyons and cliffs. Crevices in granitic rocks and consolidated sandstone are a common roosting substrate. These bats will also roost in building crevices—as nearly as many day roosts are known in buildings as in natural crevices. Western mastiff bats are insectivorous and feed primarily on moths. They forage in broad open areas including dry desert washes, floodplains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.

Mohave Ground Squirrel *(S. mohavensis)*

Mohave ground squirrel (MGS) is endemic to two (2) million hectares in the western Mojave Desert. It typically inhabits sandy soils of alkali sink and creosote bush scrub habitat. MGS are listed as threatened by CDFG due to habitat loss, fragmentation, and deterioration.

MGS measure about nine (9) inches from nose to tip of tail, forage on leaves and seeds, and aestivate/hibernate for long periods of the year. Aestivation (reduction of body temperature, heart rate, and metabolism) begins usually in the early summer when vegetation begins to dry up. MGS reanimate after winter rains have produced new vegetative growth, generally in February. Males may travel up to a mile per day in search of mates after they have emerged from aestivation in the spring. Litters of six (6) –to– nine (9) young are born by the end of March; young are weaned by early May and disperse within a few weeks. Young often establish home ranges adjacent to the maternal home range; however some young will disperse up to four (4) miles. When winter rains fail, MGS do not reproduce and can enter dormancy as early as April. As a result, MGS numbers decline after a low rainfall year, and two successive years of drought can lead to the extinction of local populations. Young can recolonize suitable habitat rapidly after good reproductive seasons.

According to the West Mojave Plan Environmental Impact Report/Environmental Impact Statement and the Mohave Ground Squirrel Partnership workshop, the proposed project area is located outside of the Mohave ground squirrel range. Therefore, no protocol surveys were

conducted and it is assumed that the proposed project site is not occupied by Mohave ground squirrel.

Desert Tortoise *(G. agassizi)*

Desert tortoise is listed under both State and Federal law as a threatened species. Throughout its range it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates. Critical habitat for the desert tortoise was designated on February 8, 1994. The proposed project site is not located within designated critical habitat. The desert tortoise is typically found in creosote bush scrub. They are most often found on level ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and in hillsides. Recent activity at tortoise burrows may be indicated by footprints, fresh dirt on the apron of the burrow, fresh scat, crushed vegetation or recently exposed roots in the burrow wall. Tortoise scat is very distinctive and may remain on the desert floor for many years. General estimates of the age of tortoise scat can be made based upon sun bleaching and moisture levels. Home ranges for desert tortoise vary, depending upon the size and sex of a tortoise as well as the availability of food and shelter. According to the CDFG, information on the western Mojave population of desert tortoise, home range typically varies from five (5) to 38 acres. Neonatal tortoises can travel up to 3-5 km after hatching. Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict exact numbers of individuals on a site based upon burrow numbers.

In 1992 the U.S. Bureau of Land Management (BLM) issued the California Statewide Desert Tortoise Management Policy which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable populations. The management goal for Category III areas is to limit population declines to the extent feasible. The entire proposed project occurs in desert tortoise habitat designated as Class II.

Burrowing Owl *(A. cunicularia)*

Burrowing owl is a state Species of Special Concern. This owl is a mottled brownish and sand colored, dove sized raptor, with large yellow eyes, a rounded head lacking ear tufts, white eyebrows, and long legs compared to other owl species. It is a ground dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The burrowing owl is heavily dependent upon the presence of mammal burrows, commonly ground squirrel, in its habitat to provide shelter from predators, inclement weather, and to provide a nesting place. They are also known to make use of human-created structures such as cement culverts and pipes for burrows.

Burrowing owls spend a great deal of time standing on dirt mounds at the entrance to a burrow, or perched on a fence post or other low to the ground perch from which they hunt for prey. Burrowing owls frequently hunt by hovering in place above the ground and dropping on their prey from above. Burrowing owls feed primarily on insects, such as grasshoppers, June beetles and moths, but will also take small rodents, birds and reptiles. They are active during the day and night, but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for the burrowing owl is February 1 through August 31. Typically seven (7) –to- nine (9) eggs are laid in a burrow, abandoned pipe, or other subterranean hollow where incubation is complete in 28-30 days. Young burrowing owls fledge in 44 days. The burrowing owl is considered a migratory species in portions of its range, which includes western North America from Canada to Mexico, and east to Texas and Louisiana. Burrowing owl populations in California are considered to be sedentary or locally migratory.

Throughout its range, burrowing owls are vulnerable to habitat loss, predation, vehicular collisions, destruction of burrow sites and poisoning of ground squirrels. Burrowing owls have disappeared from significant portions of their range in the last 15 years and overall nearly 60 percent of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s. The burrowing owl is not listed under the State or Federal Endangered Species Act. The burrowing owl is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

Prairie Falcon *(F. mexicanus)*

Prairie falcon is a medium to large bird with wingspans approaching 3.5 feet (106.7 cm). The female tends to be considerably larger than the male, in some cases a full one-third bigger. Adult prairie falcons are a pale brown to sandy brown across the top of their wings and back. The head is streaked with light areas around the face. A faint dark mustache appears on either side of the bill. Underneath the birds are creamy white with brown spotting or streaking on the breast and belly. Falcons all have slender bodies, long tails and characteristic long, pointed wings. Prairie falcons can be abundant when suitable habitats for nesting and foraging are present. They do migrate in the spring and fall, but some birds may reside in the area the entire year. Prairie falcons prefer rough broken terrain, which is where they establish nesting territories. Nesting occurs in mid-April through July. Their nests are often found in rock crevices and sometimes in vacated stick nests left by other birds.

The prairie falcon is a locally common bird. These falcons prey chiefly on small birds and mammals, and on a variety of reptiles and insects. Prairie falcons hunt using low, rapid, searching flight, usually capturing prey on or near the ground. The prairie falcon swoops down upon its prey from behind, as do other species of falcons. Prairie falcons nest primarily on cliff ledges, but may also nest on low ridges. All birds of prey are protected by law; it is illegal to

harm them or to disturb their nests. It is also against the law to have in your possession any artifacts from birds of prey, such as feathers, talons or preserved specimens. Injured hawks and owls should be reported to the Department of Game, Fish and Game or the U.S. Fish and Wildlife Service. Officials will arrange for birds that can be saved to be cared for at rehabilitation centers.

Bendire's Thrasher *(T. bendirei)*

Bendire's thrasher is 23-28 cm (nine [9] to 11 inches) in length, with a long tail and a short bill. It is colored grayish-brown on its upperparts and has paler underparts with faint dark streaks. The eyes are bright yellow, and the tips of the tail are tipped with white. The Bendire's thrasher lives in the brush-filled deserts and valleys and drylands of the south-western United States, mainly along the southern border that Arizona and New Mexico shares with Mexico.

The Bendire's thrasher constructs a cup-shaped nest from twigs, lining the interior with grass stems and rootlets. It is usually placed in a cactus or an otherwise thorny desert shrub or tree. The female lays three or four eggs, which are pale green to blue in color, and speckled with brown and purple. Bendire's thrasher, like the majority of thrashers, feed on small ground-dwelling insects.

Le Conte's Thrasher *(T. lecontei)*

Le Conte's thrasher is a permanent resident of the deserts of the southwestern U.S. and northwestern Mexico. An uncommon and hard-to-find bird, it characteristically exists only in low densities; in good habitat for the bird there may be only ten (10) adults per square kilometer. Its typical habitat is sparsely vegetated desert flats, dunes, or gently rolling topography with a high proportion of species of saltbush or shadscale and cholla cactus. Most of the shrubs are below 2.5 m in height. A requirement is that there be accumulated leaf letter under plants since the bird feeds almost entirely on arthropods taking shelter in this litter during the day. It also consumes plant seeds and opportunistically takes small snakes, lizards, and bird's eggs. All its basic water requirements are met through its diet, as it lives in an environment where surface water is only rarely available.

As a nest site, it prefers cholla cactus or thick, dense and thorny desert shrubs in deep shade from overhanging branches. Though the extent of its known range has not changed since the late 19th Century, much of its U.S. habitat within that range has been lost to development, resulting in great reductions locally in its numbers. One threat is degradation and destruction of habitat by ATV use; ATVs crush vegetation and destroy underlying litter and soil surface, making the area unsuitable for the thrasher.

Coast (San Diego) Horned Lizard *(Phrynosoma coronatum)*

The Coast horned lizard is relatively large and less rounded than other horned lizards. Numerous pointed scales stick out along the sides of the body and over the back, though only the horns around the head are rigid. The Coast horned lizard's range extends from northern California to the tip of Baja California. It frequents areas with abundant, open vegetation, such as chapparal or coastal sage scrub in arid and semi arid climates.

Silver-Haired Bat *(Lasionycteris noctivagans)*

The silver-haired bat is primarily a coastal and montane forest dweller feeding over streams, ponds, and open brushy areas. The silver-haired bat grows up to four (4) inches in length with a wingspan of approximately 11.5 inches. This species is primarily a forest bat, using hollow trees, tree cavities, and crevices beneath peeling bark. Silver-haired bats primarily use stream corridors and lake and pond margins for foraging.

Focused Surveys

Burrowing Owl Survey

Focused burrowing owl surveys were conducted for the proposed project site and for potential offsite improvement areas in accordance with the "Burrowing Owl Survey Protocol and Mitigation Guidelines" prepared by the California Burrowing Owl Consortium in April 1993 and the October 17, 1995 California Department of Fish and Game staff report on Burrowing Owl Mitigation. Burrowing owl focused surveys for the proposed project site were conducted from May 12 to September 8, 2005 and between April 13 and May 9, 2007 on the southern parcel between May 10 and September 11, 2007. Burrowing owl focused surveys for the offsite improvement areas were conducted in October 2008.

The protocol consists of four phases, a habitat assessment, burrow survey, owl survey and census and report. If it is determined that there is burrowing owl habitat, then a 100 percent coverage survey is conducted. The site was surveyed at 30 meter (~100 foot) intervals. The bases of perennial shrubs were checked for burrows and signs. Natural and non-natural substrates were examined for potential burrow sites. All burrows encountered were examined for shape, scat, pellets, and tracks. Burrowing owl burrow locations were marked using a Global Positioning System (GPS) unit. Habitat characteristics were photo documented and all species encountered were recorded, as well as date, time, and weather conditions.

A high number of burrowing owls were detected in the early months of the survey, including over 45 individuals in one survey. During subsequent surveys, the colony had moved east in response to predation and disturbance from a pack of feral dogs. All of the previously occupied burrows had been excavated. When the owls viewed during previous surveys were identified

again, their numbers had dropped. By July, the colony had moved again in response to feral dogs. The colony migrated southeast and settled in the corner of the proposed project site, and their numbers dropped to about 15 individuals. It is assumed that some of the owls left the site completely, and some succumbed to the feral dogs. In August, no owls were detected on the proposed project site. However, two small clusters of burrows were found south of the proposed project site, near the end of Chicago Road. White wash and feathers were identified near burrows but all of the burrows had been dug out recently by dogs. No burrowing owl individuals were identified on the southern parcel, but there was evidence that they were there previously.

Desert Tortoise Survey

Focused desert tortoise surveys were conducted in accordance with the desert tortoise protocol. The desert tortoise surveys were conducted in 2005 and 2007 and an additional survey for the offsite improvement areas was conducted in October 2008.

The desert tortoise surveys consisted of 100-percent coverage with transects spaced 30-feet apart and zone of influence transects set at 100, 200, 400, 600, and 1200-foot intervals. Survey transects were conducted to 1,200 feet where possible. The proposed project site is not located within designated critical habitat for the desert tortoise. However, suitable habitat occurs on both parcels and desert tortoise are known to occur in the near vicinity of the proposed project site. Signs of desert tortoise such as scat, tracks, scuts, remains, and burrows, can remain for several years. No desert tortoise or their sign (i.e., burrows, scat, scutes, or tracks) were detected during both the 2005 and 2007 focused surveys.

Table 3.3-2, *Special Status Wildlife Species Occurring On-Site*, lists the 11 sensitive wildlife species that have been recorded within the USGS-Fairview Valley Quadrangle as well as the surrounding Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North Quadrangles, and therefore, could potentially occur on the proposed project site. As identified in Table 3.3-2, burrowing owls were identified during the early months of the survey but their numbers continually dropped due to predation by feral dogs. No other sensitive wildlife species were identified within the proposed project site during the 2005 and 2007 surveys.

Table 3.3-2:
Special Status Wildlife Species Occurring On-Site

Species	Status	Habitat	Presence/Description
Bendire's Thrasher (Toxostoma bendirei)	Species of Special Concern	Migratory; local Spring/Summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert.	Suitable habitat occurs on site. **Species was not found during surveys.**
Burrowing Owl (A. cunicularia)	Species of Special Concern	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation.	Suitable habitat occurs on site. **Species was found at the beginning of the survey but by the conclusion of the survey, all burrowing owls had been forced to migrate or succumbed to predation by feral dogs.**
Coast (San Diego) Horned Lizard *(Phrynosoma coronatum)*	Species of Special Concern	Inhabits Coastal Sage Scrub and Chaparral in Arid and Semi-Arid Climates.	No suitable habitat occurs on Site. **Species was not found during surveys.**
Desert Tortoise *(G. agassizii)*	Threatened	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat	Suitable habitat occurs on site. **Species was not found during surveys.**
Le Conte's Thrasher *(Toxostoma lecontei)*	Species of Special Concern	Desert resident; primarily open desert wash, desert scrub and desert succulent scrub habitats.	Suitable habitat occurs on site. **Species was not found during surveys.**
Mohave Ground Squirrel (Spermophilus mohavensis)	Threatened	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert.	Marginally suitable habitat occurs on site. **Species was not found during surveys**.
Pallid San Diego Pocket Mouse *(Chaetodipus fallax pallidus)*	Species of Special Concern	Desert border areas in eastern San Diego County. In desert wash, desert scrub, desert succulent scrub, Pinyon-Juniper, etc.	Suitable habitat occurs on site. **Species was not found during surveys.**
Prairie Falcon (Falco mexicanus)	Sensitive Species	Inhabits dry, open terrain, either level or hilly.	Suitable habitat occurs on site. **Species was not found during surveys.**
Silver-Haired Bat *(Lasionycteris noctivagans)*	Species of Special Concern	Primarily a coastal and montane forest dweller	No suitable habitat occurs on Site. **Species was not**

Species	Status	Habitat	Presence/Description
		feeding over streams, ponds, and open brushy areas.	**found during surveys.**
Townsend's Big-Eared Bat *(Corynorhinus townsendii)*	Species of Special Concern	Throughout California in a wide variety of habitats. Most common in moist sites.	Suitable habitat occurs on site. **Species was not found during surveys.**
Western Mastiff Bat (Eumops perotis californicus)	Species of Special Concern	Many open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Suitable habitat occurs on site. **Species was not found during surveys.**

Table 3.3-3, *Special Status Wildlife Species Occurring Off-Site*, lists the 11 sensitive wildlife species that have been recorded within the USGS-Fairview Valley Quadrangle as well as the surrounding Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North Quadrangles, and therefore, could potentially occur on the proposed project site. As identified in Table 3.3-3, Burrowing owl and prairie falcon were observed within the vicinity of the off-site improvements during the 2005 and 2007 surveys.

Table 3.3-3:
Special Status Wildlife Species Occurring Off-Site

Species	Status	Habitat	Presence/Description
Bendire's Thrasher (Toxostoma bendirei)	Species of Special Concern	Migratory; local Spring/Summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert.	Suitable habitat occurs on site. **Species was not found during surveys.**
Burrowing Owl (A. cunicularia)	Species of Special Concern	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation.	Suitable habitat occurs on site. **Species present during surveys**
Coast (San Diego) Horned Lizard *(Phrynosoma coronatum)*	Species of Special Concern	Inhabits Coastal Sage Scrub and Chaparral in Arid and Semi-Arid Climates.	No suitable habitat occurs on Site. **Species was not found during surveys.**
Desert Tortoise *(G. agassizii)*	Threatened	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert	Suitable habitat occurs on site. **Species was not found during surveys.**

Species	Status	Habitat	Presence/Description
		habitat	
Le Conte's Thrasher *(Toxostoma lecontei)*	Species of Special Concern	Desert resident; primarily open desert wash, desert scrub and desert succulent scrub habitats.	Suitable habitat occurs on site. **Species was not found during surveys.**
Mohave Ground Squirrel (Spermophilus mohavensis)	Threatened	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert.	Marginally suitable habitat occurs on site. **Species was not found during surveys**.
Pallid San Diego Pocket Mouse *(Chaetodipus fallax pallidus)*	Species of Special Concern	Desert border areas in eastern San Diego County. In desert wash, desert scrub, desert succulent scrub, Pinyon-Juniper, etc.	Suitable habitat occurs on site. **Species was not found during surveys.**
Prairie Falcon (Falco mexicanus)	Sensitive Species	Inhabits dry, open terrain, either level or hilly.	Suitable habitat occurs on site. **Species present during surveys**
Silver-Haired Bat *(Lasionycteris noctivagans)*	Species of Special Concern	Primarily a coastal and montane forest dweller feeding over streams, ponds, and open brushy areas.	No suitable habitat occurs on Site. **Species was not found during surveys.**
Townsend's Big-Eared Bat *(Corynorhinus townsendii)*	Species of Special Concern	Throughout California in a wide variety of habitats. Most common in moist sites.	Suitable habitat occurs on site. **Species was not found during surveys.**
Western Mastiff Bat (Eumops perotis californicus)	Species of Special Concern	Many open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Suitable habitat occurs on site. **Species was not found during surveys.**

Jurisdictional Delineation

A jurisdictional delineation was conducted for the proposed project site in 2005 and 2007 by Tom Dodson and Associates. The primary focus of these investigations was to determine the presence of jurisdictional waters and to calculate their extent. Potential jurisdictional areas were measured on an aerial photo provided by the Project Applicant and in the field. The 2005 and 2007 jurisdictional delineations were conducted according to the Army Corps of Engineers (ACOE) 1987 manual and CDFG guidelines. The study area for the jurisdictional delineation was defined as those areas bound by the cut channel banks. All areas identified as supporting non-wetland jurisdictional waters were measured to the nearest foot. General site characteristics and a biological inventory were also noted. Jurisdictional waters were calculated by multiplying the drainage width by the length and then converting to acres. Washes were

evaluated based on the ACOE definition for ephemeral, intermittent, and perennial streams. Amount and type of vegetation (hydrophytic versus upland) present within the drainage, soil moisture, and the presence of running or standing water were evaluated.

Jurisdictional limits were marked with lath and then surveyed by engineers. Once the data was input, engineers mapped jurisdictional limits on to the proposed project site topographical map. Staff members from CDFG and the ACOE met with biologists in the field to verify the jurisdictional limits that had been mapped. The ACOE stated that they would be taking jurisdiction over the areas that looked to be a traveled road because there was evidence of flow and the conditions fit the connectivity and nexus rule. The ACOE did not consider these areas to be erosional features or ditches. The ACOE considered locations where the channels clearly ended in sheet flow to be non-jurisdictional. CDFG considered all areas showing evidence of bed bank and channel to be jurisdictional.

A total of four desert dry washes were identified on the northern parcel and three desert dry washes were identified on the southern parcel. A total of 4.59 acres of jurisdictional waters occur on the northern parcel and 1.71 acres occur on the southern parcel. Refer to Exhibits 3.3-1a and 3.3-1b, *Jurisdictional Delineation Map.*

Regional Connectivity/Wildlife Movement

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. A wildlife corridor is generally represented by a linear patch of habitat that provides a connection between two core areas of the same habitat, allowing for the large-scale movement of species within their native habitats. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations. Wildlife movement corridors are considered sensitive by the County of San Bernardino as well as by the resource and conservation agencies.

The County identifies Wildlife Corridors and Areas of Critical Environmental Concern in their Open Space Element of the County *General Plan* EIR. The proposed project site is not identified within the County *General Plan* as a Wildlife Corridor or Linkage; refer to Exhibit 3.3-2, *San Bernardino County Corridor Locations*.

3.3.2 REGULATORY FRAMEWORK

Federal

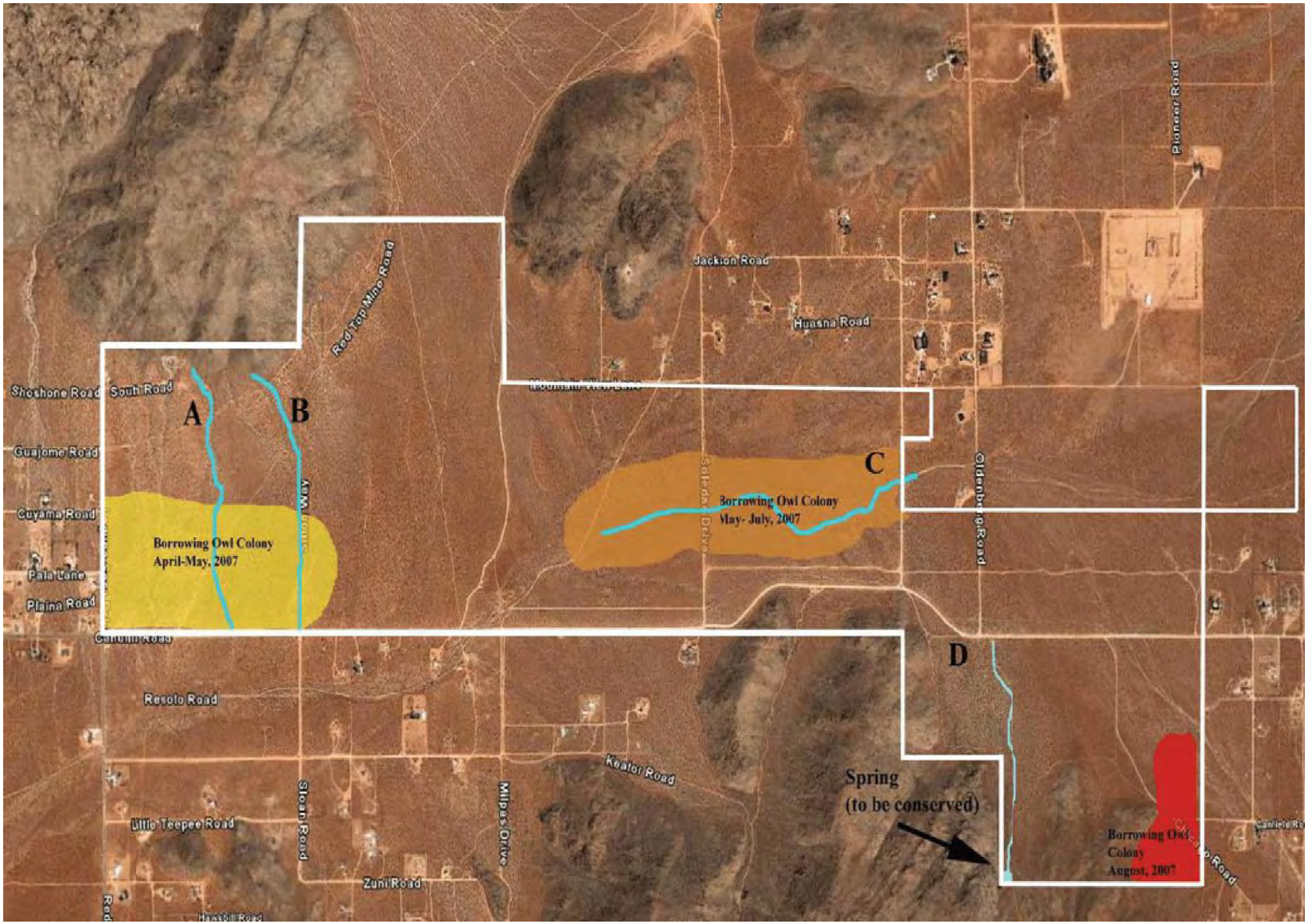
Federal Endangered Species Act

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." "Harm" has been defined by the regulations of the United States Fish and Wildlife Service (USFWS) to include types of "significant habitat modification or degradation." The U.S. Supreme Court, in *Babbit v. Sweet Home*, 515 U.S. 687, ruled that "harm" may include habitat modification "...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." Activities that may result in "take" of individuals are regulated by USFWS.

USFWS produced an updated list of candidate species for listing in June 2002 (Federal Resister: Volume 67, Number 114, 50 CFR Part 17). Candidate species are regarded by USFWS as candidates for addition to the "List of Endangered and Threatened Wildlife and Plants." Although candidate species are not afforded legal protection under the ESA, they typically receive special attention from Federal and State agencies during the environmental review process.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).



NOT TO SCALE

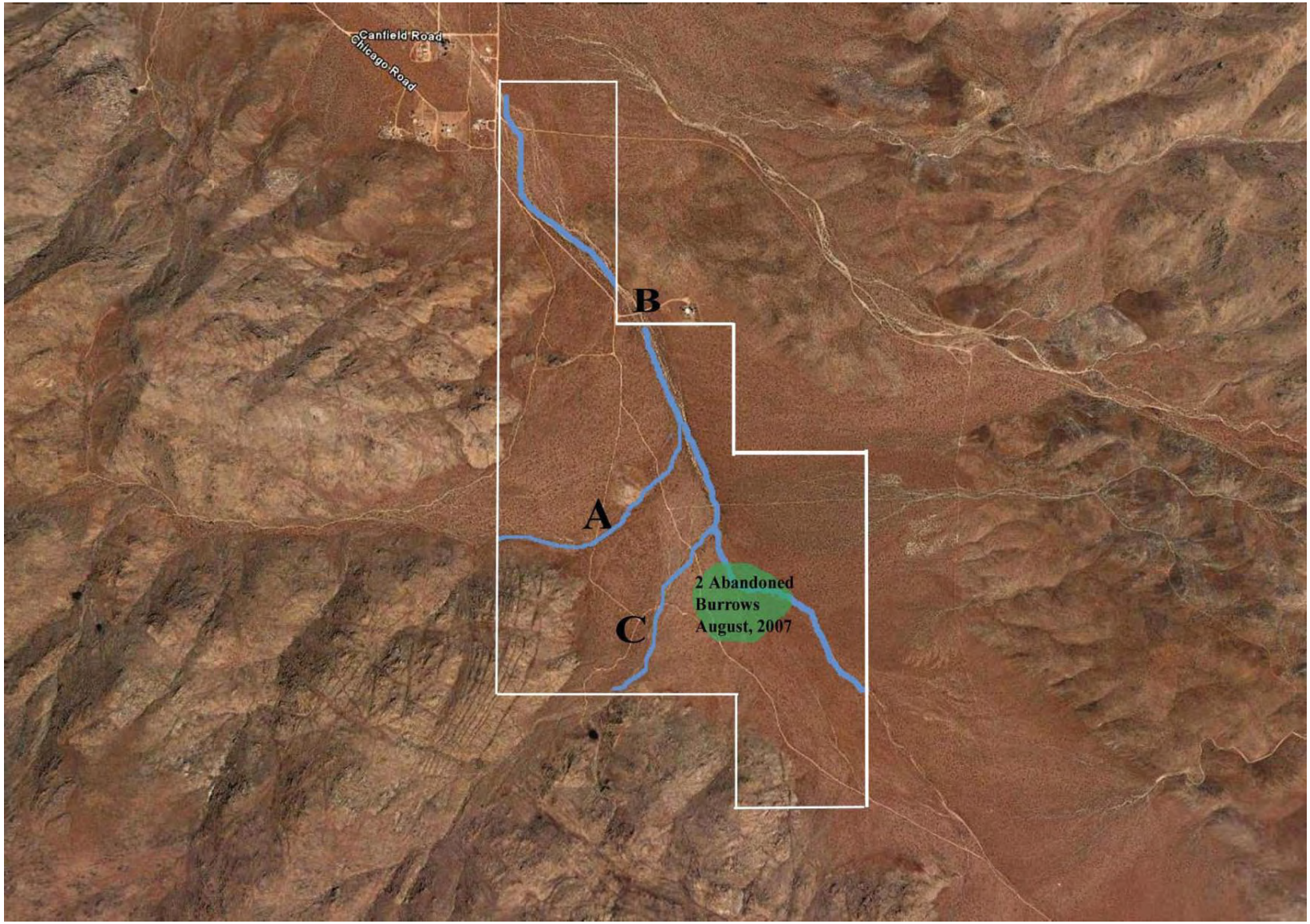
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

JURISDICTIONAL DELINEATION MAP

Exhibit 3.3-1A

This page was intentionally left blank



RBF CONSULTING

NOT TO SCALE

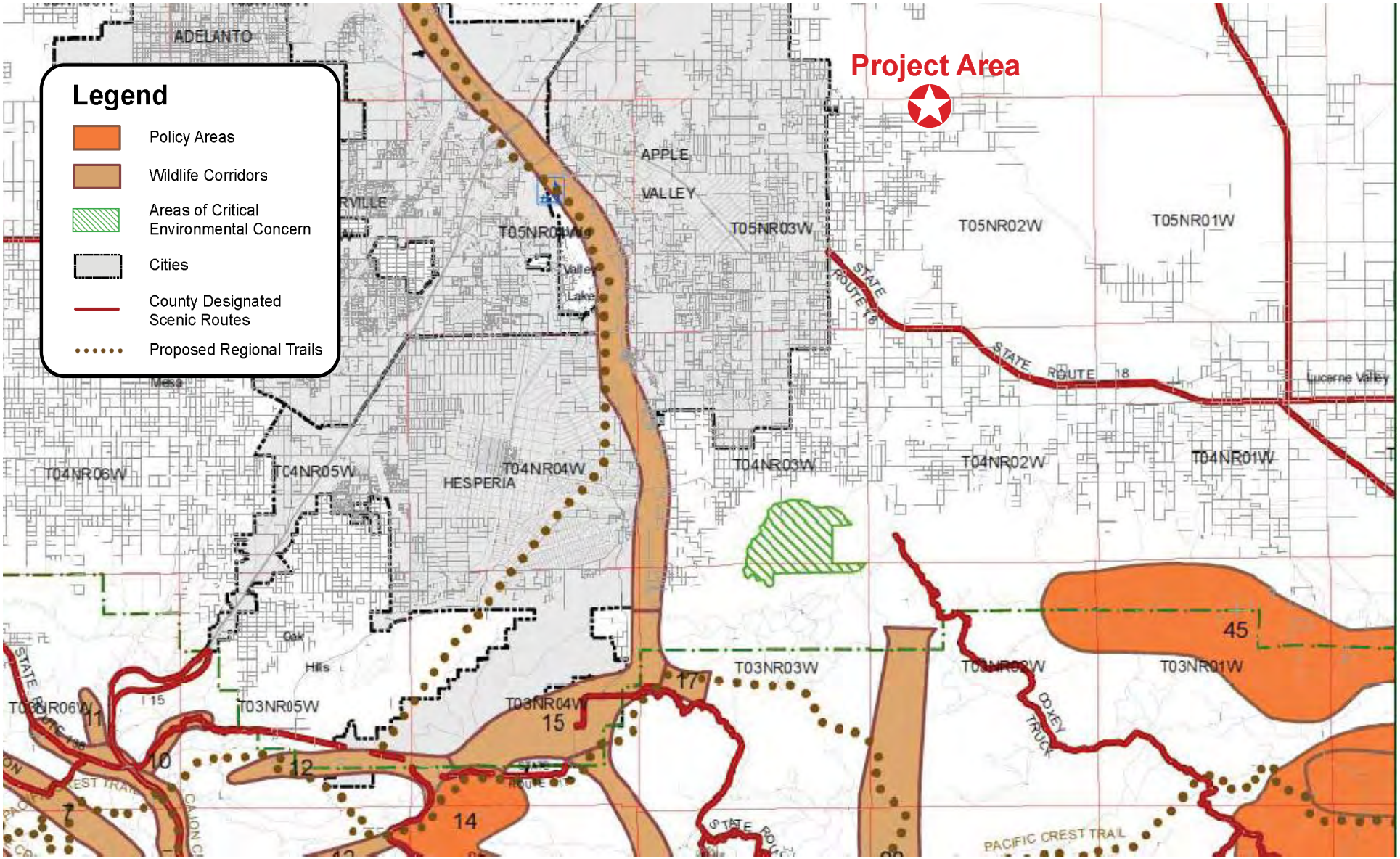
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

JURISDICTIONAL DELINEATION MAP

Exhibit 3.3-1B

This page was intentionally left blank



NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

SAN BERNARDINO COUNTY CORRIDOR LOCATIONS

Exhibit 3.3-2

This page was intentionally left blank

Clean Water Act §404

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the U. S. Army Corps of Engineers (ACOE) under the Clean Water Act (CWA) (1972). The ACOE, under provisions of Section 404 of the CWA, has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as Waters of the U.S., tributaries of waters otherwise defined as Waters of the U. S., the territorial seas, and wetlands adjacent to Waters of the U.S. (33 CFR, Part 328, Section 328.3).

Areas generally not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and, under certain circumstances, water-filled depressions created in dry land incidental to construction activity (51 Federal Register 41217, November 13, 1986).

State

California Fish and Game Code

State-listed threatened and endangered species are protected under provisions of the California Endangered Species Act (CESA). Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by the California Department of Fish and Game (CDFG). Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFG has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

CDFG and USFWS Species of Concern

The CDFG has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the Federal level, USFWS also uses the label species of concern, an informal term that refers to species which might be in need of concentrated conservation actions.

As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

California Fish and Game Code §3503.5

Birds of prey are protected under the California Fish and Game Code. Section 3503.5 of the code states that it is "unlawful to take, possess, or destroy any birds in the order 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 this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG.

California Native Plant Society Rare or Endangered Plant Species

Vascular plants listed as rare or endangered by the California Native Plant Society (CNPS) (2001), but which have no designated status under State or Federal endangered species legislation, are defined as follows:

- **List 1B.** Plants rare, threatened, or endangered in California and elsewhere.
- **List 2.** Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- **List 3.** Plants about which we need more information - a review list.
- **List 4.** Plants of limited distribution - a watch list.

California Fish and Game Code Section 1600 et seq.

The California Fish and Game Code establishes CDFG jurisdiction over alterations to streams in Sections 1601-1603. Also known as "Streambed Alteration," this jurisdiction generally extends to the "hinge points" on the top-of-bank of opposing channel banks and/or the full lateral extent of riparian vegetation beyond the top-of-bank. Definitions used in the identification of the CDFG's jurisdiction are contained in various documents including the Fish and Game Code, Title 14 of the California Code of Regulations (Cal. Code Regs., tit. 14 Section699.5), and *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code* (1994). These areas generally include rivers, streams, creeks, or lakes. In addition, canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

California Department of Fish and Game Jurisdiction

The California Fish and Came Commission has also defined "wetlands" pursuant to section 703 of the Fish and Game Code. The CDFG maintains a specific policy regarding impacts to wetland habitats because these habitats are important to a wide variety of plant and wildlife species. The CDFG considers projects that impact these resources as significant under CEQA if they result in a net loss of wetland acreage or habitat value. When wetland habitat cannot be avoided, impacts to wetlands are required to be compensated for with the creation of new habitat, preferably on-site, at a minimum ratio of 1:1. Wetlands that have been inadvertently created by leaks, dams, or other structures, or failures in man-made water systems are not exempt from this policy.

The CDFG potentially extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream dependent terrestrial wildlife" (CDFG 1994). Such areas on the site were determined using methodology described in *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607* (CDFG 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream, or which substantially change its bed, channel or bank, or which utilize any materials (including vegetation) from the streambed, may require that a project applicant enter into a Streambed Alteration Agreement (SAA) with the CDFG.

California Desert Native Plants Act

The *California Desert Native Plants Act* was passed in 1981 to protect non-listed California desert native plants from unlawful harvesting on both public and privately owned lands. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit. The following plants are under the protection of the California Desert Native Plants Act:

- *Dalea spinosa* (smoketree)
- All species of the genus *Prosopis* (mesquites)
- All species of the family *Agavaceae* (century plants, nolinas, yuccas)
- All species of Cactus
- Creosote Rings, ten feet in diameter or greater

- All Joshua Trees

Local

Southern California Association of Government (SCAG) Regional Comprehensive Plan and Guide (RCPG)

Goals and policies from the Growth Management and Open Space Chapters of the RCPG are applicable to the proposed project. Focus is placed on providing for the conservation of the region's open space resources with respect to:

- Interconnections among resources;
- Future land use decisions that will either strengthen or impair the region's ability to sustain the resources; and,
- Opportunities for inter-jurisdictional planning

The intent of the RCPG is to conserve regional open space resources in order to ensure sustainability of such resources over time. To guide this effort, open space resources are grouped into three categories: natural lands, community open space, and farmlands and rangelands.

West Mojave Plan

The West Mojave Plan is a Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. The goal of the West Mojave Plan is to conserve and protect the desert tortoise, Mohave Ground Squirrel, and nearly 100 other sensitive plants and animals, as well as the ecosystems on which they depend. At the same time, the West Mojave Plan is intent on providing developers of public and private projects with a streamlined program for compliance with the California and Federal Endangered Species Acts that regulates consistently, reduces delays and expenses, eliminates uncertainty, and applies the costs of compensation and mitigation equitably to all agencies and parties.

The West Mojave Plan is an attempt at defining a regional strategy for conserving plant and animal species and their habitats and to define an efficient, equitable, and cost-effective process for complying with threatened and endangered species laws. In March of 2006, the Bureau of Land Management signed a Record of Decision for the Final Version of the Plan. However, in August of the same year, an alliance of conservation groups filed suit in Federal Court to overturn the Plan, charging that it does not protect land and wildlife from off-road vehicles. As a result, the Habitat Conservation Plan component of the West Mojave Plan is still considered to be a draft, and is anticipated to require at least two more years for completion. At this time,

since the Plan is still considered to be in draft form, it cannot be relied upon for compliance with Federal, State, and local laws and regulations pertaining to endangered and sensitive plant and animal species.

County of San Bernardino *General Plan*

The Conservation Element of the *General Plan* includes concepts and guidelines to manage, preserve, and utilize natural resources. The following goals, policies, and programs are applicable to the proposed project:

Goal CO 1: **The County will maintain to the greatest extent possible natural resources that contribute to the quality of life within the County.**

Policy CO 3.1: The County will coordinate with appropriate agencies and interested groups to develop, fund and implement programs to maintain the County's natural resources' base.

Programs: 1. The County shall coordinate with local interest groups, State, and Federal agencies, prior to the approval of land use conversion to ensure adequate protections are in place to preserve habitat for resident and migratory species that may depend on aquatic, riparian, and/or unique upland habitat within the County. The Overlay will be designed to identify the known distribution of rare, threatened and endangered species and the habitats they rely upon.

2. The County will coordinate with appropriate agencies (e.g., USFWS, California Natural Diversity Data Base, BLM, National Park Service, California Native Plant Society, and so forth) and interested groups (e.g., Audubon Society, San Bernardino County Museum) to develop, fund and implement a geographic information and web-based database system for identifying important biological resources and natural open space areas within the Valley, Mountain, and Desert Regions of the County. The implementation of the aforementioned geographic information and database system is a commitment to update and enhance the Biological and Open Space Overlays within a specific area prior to approval of any subsequent development plans. This program includes the maintenance of the web-based database with completed Biological Opinions that will contribute to the evaluation of cumulative impacts from previously approved projects. Furthermore, the County shall quarterly fund the San Bernardino County Museum (Museum) to review and update the Biological Resources and Open Space Overlays to facilitate an accurate

and current spatial data based on local, State, and Federally protected species and their habitats.

Goal CO 2: **The County will maintain and enhance biological diversity and healthy ecosystems throughout the County.**

Policy CO 2.1: The County will coordinate with State and Federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs.

Programs: 1. All County Land Use Map changes and discretionary land use proposals, for areas within the Biotic Resource Overlay or Open Space Mapping on the Resources Overlay, shall be accompanied by a report that identifies all biotic resources located on the site and those on adjacent parcels, which could be adversely affected by the proposal. The report shall outline mitigation measures designed to eliminate or reduce impacts to identified resources. An appropriate expert such as a qualified biologist, botanist, herpetologist or other professional "life scientist" shall prepare the report.

2. The County shall require the conditions of approval of any land use application to incorporate the County's identified mitigation measures in addition to those that may be required by State or Federal agencies to protect and preserve the habitats of the identified species. This measure is implemented through the land use regulations of the County Development Code and compliance with the CEQA, CESA, ESA and related environmental laws and regulations.

3. The County shall coordinate with local, State, and Federal agencies to create a specific and detailed wildlife corridor map for the County of San Bernardino. The map will identify movement corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays.

4. The County shall coordinate with State and Federal agencies and departments to ensure that their programs to preserve rare and

endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs. This coordination shall be accomplished by notification of development applications and through distributed CEQA documents.

5. The San Bernardino County Museum (Museum) will review and update the Biological Resources Overlay and Open Space Overlay to provide accurate and current spatial data based on rare, threatened, endangered species and the habitats that they rely on. An updated database that integrates CNDDB data with other occurrence data from the Museum and other sources such as the USFWS, CDFG, USFS, BLM, National Park Service, California Native Plant Society to identify areas where biological surveys are required. Overlay maps will identify movement corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. South Coast Wildlands Corridor Project and other data from the resource agencies will be consulted as an information reference base. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays.

Policy CO 2.2: Provide a balanced approach to resource protection and recreational use of the natural environment.

Policy CO 2.3: In addition to conditions of approval that may be required for specific future development proposals, the County shall establish long-term comprehensive plans for the County's role in the protection of native species because preservation and conservation of biological resources are Statewide, Regional, and local issues that directly affect development rights. The conditions of approval of any land use application approved with the BR overlay district shall incorporate the mitigation measures identified in the report required by Section 82.13.030 (Application Requirements), to protect and preserve the habitats of the identified plants and/or animals.

Programs: 1. Prepare or participate in Habitat Conservation Plans when there is sufficient support of such plans, and adequate funding for their preparation, and a strong likelihood of success.

2. Establish a land ownership transfer program.

3. Establish a land conservation easement program.

4. The County shall work with local communities to improve trash collection, recycling programs, and reduce illegal dumping in unincorporated areas. The County shall sponsor mitigation efforts that minimize landfill growth, reduce trash haul routes that spread litter and increase predator species numbers (i.e., raven or crow in the Desert Region), and reduce illegal dumping of large bulk items (e.g., furniture, appliances, tires, batteries).

5. The County shall participate with Regional plans to improve water quality and habitat that are downstream but may be beyond County limits. The County shall coordinate with Regional plans to minimize degradation of water quality within the County that affects downstream resources and habitats.

Policy CO 2.4: All discretionary approvals requiring mitigation measures for impacts to biological resources will include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible.

Programs: 1. The monitoring program will be designed to determine whether the mitigation measures were implemented and effective.

2. The monitoring program will be funded by the project applicant to ensure compliance with and effectiveness of conditions of approval.

3. The County shall not permit land conversion until adequate mitigation is provided to reduce impacts to less than significant in cases where a Mitigated Negative Declaration is used for CEQA compliance. Direct and growth inducing impacts determined to cause a significant adverse effect on rare, threatened or endangered desert species shall be mitigated by avoidance, habitat restoration or compensated by off-site mitigation and evaluated through a project level EIR. Mitigation will be required for adverse impacts to critical areas around residential land conversion when it can be shown that the indirect effects of pets, associate human activity and other encroachments into sensitive habitats will be significant.

4. The County shall require all new roadways, roadway expansion, and utility installation within the wildlife corridors identified in the Open

Space and Biological Resource Overlays to provide suitable wildlife crossings for affected wildlife. Design will include measures to reduce or prevent habitat fragmentation and provide wildlife a means of safe egress through respective foraging and breeding habitats. A qualified biologist will assist with the design and implementation of wildife crossing including culverts, overcrossings, undercrossings, and fencing.

County of San Bernardino Development Code

Chapter 82.11, Biotic Resources (BR) Overlay, of the County of San Bernardino Development Code, includes regulations pertaining to the protection and conservation of beneficial rare and endangered plants and animal resources and their habitats, which have been identified within unincorporated areas of the county. The Overlay may be applied to areas that have been identified by a County, State or Federal agency as habitat for species of unique, rare, threatened or endangered plants or animals or their habitats as listed in the County *General Plan*. The Chapter outlines application requirements for a project proposed within a BR Overlay, including a biotic resources report.

3.3.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

Appendix G of the *CEQA Guidelines* contains the Initial Study Checklist form, which includes questions relating to biological resources. The issues presented in the Initial Study Checklist have been utilized as Thresholds of Significance in this Section. Accordingly, a project may create a significant environmental impact if one or more of the following occurs:

- If the project has a substantial adverse effect, 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 CDFG or USFWS.
- If the project has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.
- If the project 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 the direct removal, filling, hydrological interruption, or other means.

- If the project interferes substantially with the movement of any native or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.
- If the project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- If the project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Section 15065 (a), Mandatory Findings of Significance, of the *CEQA Guidelines* states that a project may have a significant effect on the environment if "the project has the potential to substantially 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, [or] reduce the number or restrict the range of an endangered, rare, or threatened species."

The significance of an impact on biological resources considers the resource itself and the importance of that resource in a regional or local context. Those impacts that diminish, or result in the loss of, an important biological resource, or those that would conflict with local, State, or Federal resource conservation plans, goals, or regulations are considered to be significant. Impacts may be locally adverse but not significant if they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis, although they may result in an adverse alteration of existing conditions. The "region" in this analysis is defined as Banning and the surrounding area.

Environmental Impacts and Mitigation Measures

Sensitive Species

3.3-1: *Implementation of the proposed project may have substantial adverse effects, either directly or through habitat modification, 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.* **Level of Significance: Less Than Significant With Mitigation.**

On-site Improvements

The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. Construction

activities and operation of the proposed project may result in potential direct or indirect impacts on sensitive biological resources. The removal or alteration of native and non-native habitats within a project area could result in the temporary or permanent displacement of plants, vegetation types, small mammals, reptiles, and other animals. Short-term construction-related impacts would also include increased noise, lessened air quality due to fugitive dust and equipment emissions, and construction traffic on local roads. These factors could disrupt the behavioral and reproductive patterns of wildlife.

Sensitive biological resources are defined as species under study for classification as threatened or endangered, or have low population densities or a highly restricted range. As discussed above, the California Natural Diversity Database (CNDD) identified 23 sensitive species as being known to exist, may exist, or have been seen in the vicinity of the proposed project site. However, appropriate habitat only exists within the proposed project site for 15 sensitive species. The proposed project site may contain Barstow wooly sunflower, Bendire's thrasher, Booth's evening primrose, burrowing owl, Cushenbury milk-vetch, desert springparsley, desert tortoise, Latimer's woodland-gilia, Le Conte's thrasher, Mohave ground squirrel, pallid San Diego pocket mouse, prairie falcon, Townsend's big-eared bat, western mastiff bat, and white pygmy-poppy. As identified in Tables 3.1-1 and 3.1-2 above, although appropriate habitat exists for several special status species to occur within the proposed project area, only evidence of the burrowing owl was observed. During the 2005 survey, a colony of burrowing owls, over 45 individuals, was identified. However, a subsequent survey determined that the number of burrowing owls had dropped down to 15 due to the disturbances to their burrows and predation by a pack of feral dogs. In 2007, a high number of burrowing owls were detected within the proposed project site during the early months of the surveys. The owls moved west to east in response to predation and disturbance by feral dogs. During the most recent 2007 burrowing owl focused survey, no burrowing owls were detected. It is assumed that the owls migrated off-site or succumbed to predation by dogs. Based on the survey results, the proposed project site should be considered occupied by burrowing owl and any proposed impacts will require a permit from the CDFG. In addition, the Specific Plan states that no invasive plant species shall be utilized in areas where developed areas and natural areas meet. Implementation of mitigation measures BIO-1 through BIO-6 would reduce potential impacts to a level of less than significant.

Off-site Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of two off-site reservoirs.

As identified in Table 3.1-3, above, the two (2) sensitive species that were observed within the boundaries of the offsite improvements was the Prairie falcon and burrowing owl. One (1)

prairie falcon was observed flying over the site during the surveys. There is a high potential for this species to utilize the site for foraging. The surrounding rugged topography indicates that prairie falcon may reside in the area, using the rocky surroundings for roosting or nesting. The rocky terrain provides appropriate habitat capable of supporting prairie falcon nesting. There was no evidence of a prairie falcon territory near any of the offsite facility locations. Evidence of burrowing owl was found east of Chicago Road. Two (2) burrows were found in the southeastern quarter of the proposed road improvements that had white wash, castings, and feathers near the burrow entrances. One (1) burrowing owl individual was identified near one of the burrows during the offsite surveys. Implementation of mitigation measures BIO-1 through BIO-5 would reduce potential impacts to a level of less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B.

Construction activities and the day to day operation of the Golf Course Overlay may result in similar potential direct or indirect impacts on sensitive biological resources as those described in the on-site improvements section. The removal or alteration of native and non-native habitats within a project area could result in the temporary or permanent displacement of plants, vegetation types, small mammals, reptiles, and other animals. These factors could disrupt the behavioral and reproductive patterns of wildlife. Implementation of mitigation measures BIO-1 through BIO-5 would reduce potential impacts to a level of less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots one (1) acre or greater in portions of Village B, C, and D.

Construction activities and operation of the Equestrian Overlay may result in similar potential direct or indirect impacts on sensitive biological resources as those described in the on-site improvements section. The removal or alteration of native and non-native habitats within a project area could result in the temporary or permanent displacement of plants, vegetation types, small mammals, reptiles, and other animals. These factors could disrupt the behavioral and reproductive patterns of wildlife. Implementation of mitigation measures BIO-1 through BIO-5 would reduce potential impacts to a level of less than significant.

BIO-1: **At least 30 days prior to the start of any land disturbance activities, a qualified biologist shall survey the site to determine if tortoise or burrowing owls are present. If tortoise or burrowing owls are encountered, land disturbance activities shall not commence until the biologist has implemented appropriate measures required by CDFG and USFWS to clear the site for construction.**

BIO-2: **A biologist/monitor shall be present at the site during all land disturbance activities.**

BIO-3: **All personnel associated with construction on the site will attend a worker education class. This class will include information regarding the Mohave ground squirrel, desert tortoise, burrowing owl, and relevant Federal and State laws and worker responsibilities (e.g avoid touching of animals; biologist notification; etc.) when working in the Mojave Desert.**

BIO-4: **The biologist/monitor shall remain on-call during construction activities. If tortoise or burrowing owls are encountered during construction, construction activities shall halt in the vicinity of the find and the biologist/monitor shall be called to the site. The contractor will implement the recommendations of the biologist/monitor.**

BIO-5: **To avoid an illegal take of active bird nests, any grubbing, brushing, or tree removal will be conducted outside the State identified nesting season (February 15 through September 1). Alternatively, the site will be evaluated by a qualified biologist prior to any ground disturbance activities to determine the presence or absence of nesting birds. If an active nest is located in the project construction area, it will be flagged and a 300 foot-buffer will be placed around it. No activity will occur within the 300 food buffer until the birds have fledged the nest.**

BIO-6: **The Home Owners Association shall review and approve landscape plans for residential lots and park landscape located within 100 feet of natural areas to regulate invasive plant species selection within these areas.**

Riparian and Sensitive Habitat

3.3-2: *Implementation of the proposed project may have 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 U.S. Fish and Wildlife Service.* **Level of Significance: Less Than Significant With Mitigation Incorporated.**

On-site Improvements

Based on data collected and analyzed, it was determined that the proposed project may result in the discharge of fill material into waters that technically meet the parameters for non-wetland waters of the United States. Seven desert dry washes were identified within the proposed project site, totaling 6.30 acres of streambed. Of these 6.30 acres of streambed, CDFG holds jurisdiction over 6.30 acres and the ACOE and RWQCB hold jurisdiction over approximately 5.69 acres. The ACOE and RWQCB do not hold jurisdiction over waters that terminate into sheet flow across the proposed project site. CDFG has jurisdiction over these jurisdictional waters. Any proposed impacts to these dry washes would require a permit from CDFG, RWQCB, and the ACOE. Activities that usually require permits from these agencies include, but are not limited to, grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting, stockpiling excavated material, mechanized removal of vegetation, driving of piles for certain types of structures, clearing of vegetation using hand held equipment and working above the ground surface, pumping water, and walking or driving vehicles. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

Off-site Improvements

There are a number of natural springs mapped outside of the Hacienda at Fairview Valley proposed project area and the southerly potential offsite facility locations are proposed near two of these springs. Natural spring habitat is considered unique and sensitive and is capable of supporting a variety of locally rare flora and fauna. They provide water which is a limiting resource to many terrestrial animals and aquatic life forms. The water provided by the springs draws a variety of unique insects, birds and mammals. Natural spring habitat is considered sensitive and poses a potential constraint. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. The impacts resulting from the construction of the golf course would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots one (1) acre or greater in portions of Village B, C, and D. The impacts resulting from the construction of the equestrian district would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

BIO-7: **All project activities will be limited to a well-defined area to contain construction activity and ground disturbance. Prior to grading and construction activities, a qualified biologist shall clearly mark the limits of disturbance will be clearly marked with flagging, stakes, or fencing.**

BIO-8: **Impacts to the desert dry washes or springs will require CDFG Streambed Alteration Agreement under Section 1603 and the California Fish and Game Code.**

BIO-9: **Impacts to the desert dry washes or springs will require ACOE 404 permit.**

BIO-10: **Impacts to the desert dry washes or springs will require RWQCB 401 Certification including agency required performance standards.**

BIO-11: **Permanent impacts to jurisdictional waters will be mitigated at a 1:1 ratio; credits may be purchased from a mitigation bank approved by the ACOE, CDFG and RWQCB.**

BIO-12: **Temporary impacts to jurisdictional waters will be mitigated in a 1:1 ratio through on site habitat restoration.**

Wetlands

3.3-3: *Implementation of the proposed project may have 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.* **Level of Significance: Less Than Significant With Mitigation Incorporated.**

On-site Improvements

As stated above, implementation of the proposed project may result in potential impacts to drainages under the jurisdiction of the ACOE and/or CDFG.

A small patch (less than 500 square feet) of wetland habitat is located near Quail Spring. Natural spring habitat is considered unique and sensitive and is capable of supporting a variety of locally rare flora and fauna. They provide water which is a limiting resource to many terrestrial animals and aquatic life forms. The water provided by the springs draws a variety of unique insects, birds and mammals. They also provide refuge for neotropical migrant bird species, many of which are uncommon. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

Off-site Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of two off-site water tank/reservoir areas.

There are a number of natural springs mapped outside of the Hacienda at Fairview Valley proposed project area and the southerly potential offsite facility locations are proposed near two of these springs. Natural spring habitat is considered unique and sensitive and is capable of supporting a variety of locally rare flora and fauna. They provide water which is a limiting resource to many terrestrial animals and aquatic life forms. The water provided by the springs draws a variety of unique insects, birds and mammals. They also provide refuge for neotropical migrant bird species, many of which are uncommon.

In order to properly and clearly define the boundaries of the spring wetland habitat, delineation surveys would need to be conducted in the early spring prior to tentative tract map approval. The general biological surveys and constraints analysis conducted for the detention basin and water tank/reservoir sites noted springs mapped in the vicinity of the southerly sites, but could not identify them in the field. The surveys were conducted during the dry season and the timing is not considered appropriate to identify wetland habitat boundaries. Natural spring habitat is considered sensitive and poses a potential constraint. Furthermore, many of the proposed offsite facility locations occur near jurisdictional, blue-line streams. Depending on the potential area of impact relative to jurisdictional limits, these water courses may pose another constraint. If there are impacts to the spring habitat or stream courses associated with the construction, maintenance and operation of the offsite facilities, then regulatory approvals will be required. In order to identify potential impacts to jurisdictional waters or wetlands, a delineation would be conducted during the appropriate season. Implementation of mitigation measures BIO-7 through BIO-13 would reduce impacts to a level of less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. The impacts resulting from the construction of the golf course would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. The impacts resulting from the construction of the equestrian district would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-7 through BIO-12 would reduce impacts to a level of less than significant.

BIO-13: **Delineation surveys shall be conducted for offsite improvements in early spring to determine the boundaries of offsite wetland habitat. If it is determined that wetland habitat is located within the boundaries of offsite improvements, detention basins and water tank sites would be designed to avoid any wetland habitat. In addition, if wetland habitat is found within the boundaries of the offsite improvements, the Project Applicant would be required to obtain permits from CDFG and RWQCB which would reduce impacts.**

Wildlife Movement

3.3-4: *Implementation of the proposed project may 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.* **Level of Significance: Less Than Significant With Mitigation Incorporated.**

On-site Improvements

The County identifies Wildlife Corridors and Areas of Critical Environmental Concern in their Open Space Element of the *General Plan* Environmental Impact Report. The proposed project site is not identified within the San Bernardino County *General Plan* as a Wildlife Corridor or Linkage; refer to Exhibit 3.3-2, *San Bernardino County Corridor Locations*. The proposed project may disrupt the integrity or continuity of an important habitat or habitat/wildlife corridor

relative to burrowing owl and other avian species. There is a potential for the loss of sensitive species habitat and foraging grounds. Implementation of mitigation measures BIO-1, BIO-3, and BIO-5 would reduce impacts to a level of less than significant.

Off-site Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of two off-site reservoirs. This proposed project may disrupt the integrity or continuity of an important habitat or habitat/wildlife corridor relative to burrowing owl and other avian species. Implementation of mitigation measures BIO-1, BIO-3, and BIO-5 would reduce impacts to a level of less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. The impacts resulting from the construction of the golf course would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-1, BIO-3, and BIO-5 would reduce impacts to a level of less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. The impacts resulting from the construction of the equestrian district would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-1, BIO-3, and BIO-5 would reduce impacts to a level of less than significant.

Conflict with Adopted Plans

3.3-5: *Implementation of the proposed project may conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.* **Level of Significance: Less Than Significant With Mitigation Incorporated.**

On-site Improvements

Joshua trees and other cactus species occur within the project area. Joshua trees are not a Federally or State protected endangered species, threatened species, or species of concern; however, they are a biologically valuable resource to wildlife in the region and are regulated under the County of San Bernardino Development Code Ordinance prohibiting the removal of Joshua trees without a required finding by the review authority concerning the tree's location or condition (Section 88.01.050). This Ordinance also requires that all transferable Joshua trees which are proposed for removal, be transplanted or stockpiled for future transplanting whenever possible.

The proposed project contains 280 acres of Open Space Conservation areas (OS-C). These natural open space areas are located throughout the site at and adjacent to rock outcroppings and foothills, and along natural drainage courses. Joshua trees in these areas will remain in place unless transplantation is required to allow for detention basins or drainage courses as may be required by County Public Works.

A Joshua tree survey was conducted to determine the size of the existing Joshua tree population found on-site to satisfy the County's Joshua tree reporting requirements for CEQA. A total of 948 Joshua trees were fully assessed in the focused Joshua tree surveys within the three sampling areas of the proposed project site. These trees were inventoried, mapped and assessed for their health condition and transferability. Out of the surveyed trees: 361 trees (38 percent) were considered transferable, 172 trees (18 percent) are classified as potentially transferable and 415 trees (44 percent) percent were classified as non-transferable.

Full Joshua tree surveys will be required for each phase of the proposed project as a part of the EIR approval requirements. A Joshua tree report will be prepared for each phase's full Joshua tree survey, for acceptance by the County. Each report will include the mapped location, size, health, and transferability of the trees surveyed, and specific recommendations for maximizing Joshua tree preservation within that phase.

A Joshua Tree Transplantation Plan shall be prepared along with each phase's Joshua tree report. Proposed project phase-specific timeframes, maintenance, monitoring, and reporting specifications will be provided to ensure maximum survivability of the Joshua trees within each phase. Only those Joshua trees that occur within the boundary of each individual phase shall be addressed within the Transplantation Plan, unless specifically authorized by the County.

The goals of each Transplantation Plan will be:

- Minimize the time each Joshua tree remains stockpiled by providing coordination with construction activities within each phase
- Ensure maximum survivability by outlining good tree care guidelines for both stockpiled and transplanted trees
- Maximize the number of Joshua trees that remain in place or are transplanted back into each phase

Implementation of mitigation measures BIO-12 through BIO-15 would reduce impacts to a level of less than significant.

The proposed project site is not located within the boundaries of any other local policies or ordinances that protect biological resources.

Off-site Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of two (2) off-site reservoirs.

Full Joshua tree surveys will be required prior to the construction of any off-site improvements. A Joshua tree report will be prepared for each full Joshua tree survey, for acceptance by the County. Each report will include the mapped location, size, health, and transferability of the trees surveyed, and specific recommendations for maximizing Joshua tree preservation within that phase.

A Joshua Tree Transplantation Plan shall be prepared along with each Joshua tree report. Project-specific timeframes, maintenance, monitoring, and reporting specifications will be provided to ensure maximum survivability of the Joshua trees within each phase. Only those Joshua trees that occur within the boundary of each individual phase shall be addressed within the Transplantation Plan, unless specifically authorized by the County.

The goals of each Transplantation Plan will be:

Minimize the time each Joshua tree remains stockpiled by providing coordination with construction activities within each phase;

- Ensure maximum survivability by outlining good tree care guidelines for both stockpiled and transplanted trees; and

- Maximize the number of Joshua trees that remain in place or are transplanted back into each phase.

Implementation of mitigation measures BIO-14 through BIO-17 would reduce impacts to a level of less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. The impacts resulting from the construction of the golf course would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-14 through BIO-17 would reduce impacts to a level of less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. The impacts resulting from the construction of the equestrian district would be similar to those described in the on-site improvements section above. Implementation of mitigation measures BIO-13 through BIO-16 would reduce impacts to a level of less than significant.

BIO-14: **A County Tree Removal Permit shall be required for the removal of a Joshua tree or other regulated desert native plant.**

BIO-15: **A Joshua tree survey and report and a Joshua Tree Management Program shall be completed and submitted with a land use application for Tentative Tract Map.**

BIO-16: **A land use application for Final Tract Map shall also include a Joshua tree survey and report.**

BIO-17: **The required Joshua tree survey and report will be prepared by a Desert Native Plant Specialist and will include a field inventory of Joshua trees throughout the site, indicating their approximate height, age, health rating, transferability, and whether they are a clone or single-trunked tree. The report will include a plot plan showing the on-site locations of all Joshua trees and will identify any regulated desert native plants.**

3.3.4 ANALYSIS OF CUMULATIVE IMPACTS

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that substantially diminish or result in the loss of an important biological resource, or those that would conflict with local, State, and/or Federal resource conservation plans, goals, or regulations. Impacts can be locally adverse but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

In the case of biological resources within the proposed project site, the development of the site would conflict with the Ordinance prohibiting the removal of Joshua trees unless appropriate findings are determined by the County (Section 88.01.050). Also, the loss of potential habitat for burrowing owl within the proposed project area associated with the development of the property would reduce the biological habitat within the immediate area. This reduction of potential habitat and introduction of suburban uses within the proposed project area could cumulatively be considered a considerable impact.

The cumulative impacts associated with the proposed project and surrounding areas where similar types of development are occurring or proposed would be considered significant due to a loss of biological habitat within the Victor Valley region (associated with development), and a potential threat to the threatened and endangered species that depend on these resources. In addition, the lack of an adopted comprehensive habitat mitigation plan (West Mojave Plan) further compounds the potential for habitat and species losses within the Victor Valley region. Once this Plan has been adopted by Federal, State, and local agencies, it is anticipated that cumulative impacts to biological resources within the Victor Valley would be better defined and mechanisms to reduce habitat loss would be in place, further reducing these impacts. In this regard, cumulative impacts associated with biological resources are considered significant and unavoidable with implementation of the proposed project.

Level of Significance After Mitigation

After mitigation, implementation of the proposed project would result in less than significant impacts on biological resources. However, the cumulative impacts associated with the proposed project and surrounding areas where similar types of development are occurring or proposed would be considered significant due to a loss of biological habitat within the Victor Valley region (associated with development), and a potential threat to the threatened and endangered species that depend on these resources. Therefore, implementation of the proposed project would result in unavoidable significant cumulative impacts related to biological resources.

3.4 CULTURAL RESOURCES

The purpose of this section is to analyze potential project-related impacts to paleontological, archaeological, and historic resources. Mitigation measures are recommended to minimize significant impacts that would occur as the result of project implementation. Information and analysis in this section are based mainly on the *Cultural Resources Assessment*, prepared by LSA Associates, Inc., December 2008, *Cultural Resources Assessment – Offsite Improvements*, prepared by LSA Associates, Inc., December 2008, and *Paleontological Resources Assessment,* prepared by LSA Associates, Inc., June 2009.

3.4.1 ENVIRONMENTAL SETTING

Paleontological Resources

Paleontological resources are fossilized remnants of prehistoric plants or animals preserved in soil or rock layers over time. Fossils and trace fossils are typically preserved in sedimentary rock units, typically in fine-to-medium-grained marine lake and stream deposits such as limestone, sandstone, or shale, and in ancient soils (paleosols). Fossils are also typically found in coarse-grained sediments including coarse alluvium or conglomerates.

The proposed project area is situated in Fairview Valley, straddled by the Granite Mountains. The proposed project is within the Mojave Desert Geologic Province and is bounded by the Transverse Range Geologic Province on the south, which includes the San Bernardino Mountains to the south and the San Gabriel Mountains to the southwest. The proposed project location contains late Quaternary alluvial sediments derived from the nearby Granite Mountains which are Miocene in age. The surface is covered by a thin veneer of Holocene sediments from the underlying alluvial materials. These younger sediments (Holocene) are most likely to contain cultural deposits.

In June 2009, LSA Associates, Inc. prepared a Paleontological Resources Assessment (PRA) and Paleontological Resource Impact Mitigation Program (PRIMP). The PRA/PRIMP included archival research, field survey, and a records search through the San Bernardino County Museum. As a result of the study, LSA determined that the proposed project location has not been surveyed for paleontological resources. The San Bernardino County Paleontological Resources Map does not identify paleontological resources within or adjacent to the project. However, as a result of the records search and archival research several significant paleontological resources have been uncovered in the surrounding vicinity within similar sediments. These resources consist of Pleistocene fauna including Giant Ground Sloth, Southern Mammoth, Llama, Camel, Horse, and various rodents and rabbits).

Archaeological Resources

Archaeological resources are defined as the material remains of any area's pre-historic (aboriginal/Native American) or historic (European and Euro-American) human activity in addition to the traditional cultural resources associated with archaeological sites and historic buildings and structures.

The area in which the proposed project is located is within an area formerly inhabited by the Serrano Indians, which are Takic-speakers of the large Uto-Aztecan language family. The Serrano tribe includes four (4) groups, each with distinct territories: the Kitanemuk, Tataviam, Vanyume, and Serrano. The Vanyume was found along the Mojave River near Apple Valley, and possibly within the current boundaries at the time of Spanish contact. The Kitanemuk lived to the north and west, while the Tataviam lived to the west. The Serrano lived mainly to the south. All groups may have used the western Mojave area seasonally; however, historical records are unclear concerning precise territory and village locations, and it is doubtful that any group, except the Vanyume, actually lived in the region for several seasons yearly. The proposed project boundaries are populated with prehistoric sites reminiscent of nomadic hunter-gatherers.

Cultural deposits are likely to exhibit locally occurring clasts derived from Miocene to Holocene sediments utilized for flaked tools and ground stone tools. In spite of their coarse grained and fractured condition, some granitic cobbles and boulders have been utilized for cultural grinding implements within the proposed project boundaries. Micro-crystalline silicates (MCS) (including pumpkin-colored chert, red jasper, and white and pink chalcedony) and gray quartzite were commonly observed within the proposed project boundaries and many were prehistorically altered for use as chipped stone tools. Obsidian has also been used locally during prehistory, but in much smaller quantities than MCS, probably due to its more remote source location.

A record search conducted by LSA Associates identified that four (4) cultural resources studies had taken place within one (1) mile of the proposed project boundaries, resulting in the recording of 24 archaeological resources. Of these, 19 previously recorded cultural resources occur within the proposed project boundaries. Thirteen of these resources are prehistoric lithic scatters, two (2) are milling slicks accompanied by lithic scatters, two (2) are possible hearths accompanied by lithic scatters, one (1) is an isolated projectile point, and one (1) was originally recorded as the remnants of a historic homestead.

In addition, a field survey of the proposed project area was conducted by LSA Associates between April 18 and August 1, 2007. During the field survey, archaeologists documented each of the 19 previously recorded cultural resources and 53 newly recorded cultural resources. Nine (9) of the previously recorded resources were not observed during the survey effort by

LSA. The newly recorded sites included 11 historic sites, and four (4) prehistoric sites. The prehistoric sites included a prehistoric hearth feature with an accompanying lithic scatter, a lithic scatter with a ceramic potsherd, and two (2) additional lithic scatters. In addition, 38 isolated artifacts were also identified during the field survey.

LSA Associates conducted an analysis of the cultural resources to determine their eligibility for the California Register. The 16 cultural resources that are considered potentially eligible for the California Register are described briefly in Table 3.4-1, *Eligible Cultural Resources*.

Table 3.4-1
Eligible Cultural Resources

Resource Number	Previously Recorded Contents	Existing Contents	Site Condition
CA-SBR-725	Four (4) poorly defined milling slicks on four (4) exfoliating granite boulders accompanied by two (2) jasper flakes and two (2) quartz flakes (1991).	Two (2) milling slicks on the granitic boulder outcrop; however, no artifacts were noted. A large vertical boulder in the center of the outcrop contained a woodrat nest, which contained several pieces of non-diagnostic burnt bones. Examination by the San Bernardino County Deputy Coroner and Forensic Specialist did not find the bones to be diagnostically human. Further examination by LSA Paleontologist and Faunal Analyst indicated that several portions were indicative of bovine butchering.	Fair. The site appears to be disappearing due to natural processes combined with possible unauthorized collection.
CA-SBR-2134	Artifact scatter that included lithic flakes, projectile points, and pottery (1970); chert, quartzite, metavolcanic, and quartz flakes accompanied by a single granitic metate fragment (1991).	Low-density lithic scatter including 15 waste and core reduction flakes of dark grey quartzite, jasper, and brown, tan, and green chert.	Fair, with disturbances including sheet washing, aeolian deflation, and some modern dumping associated with Cahuilla Road. The site is probably disappearing due to natural and artificial processes, including erosion, modern dumping, and possible unauthorized collection.
CA-SBR-3401H	Historic homestead, including a historic building and associated trash pit, with some evidence of pot-hunting and disturbances related to off-road vehicle activity.	Collapsed masonry structure, a stone retaining wall, and a small rock ring.	Good, although the building retains no structural integrity. Site disturbances have taken place from natural processes as well as off-road vehicle activity and some possible unauthorized collection.
CA-SBR-6969	100+ flakes of primarily quartzite and andesite,	Low-density lithic scatter, including 10+ waste and core reduction flakes of	Fair. Disturbances include sheet washing and aeolian

Resource Number	Previously Recorded Contents	Existing Contents	Site Condition
	with some obsidian and chert flakes mixed in (1991).	quartzite, chert, and jasper.	deflation. The site is probably disappearing due to natural and artificial processes, including erosion, modern dumping, and possible unauthorized collection.
CA-SBR-6970	30 flakes of chert, chalcedony, jasper, and quartzite material accompanied by a single granitic deep-basin metate fragment (1991).	Low-density lithic scatter consisting of 20+ waste and core reduction flakes of brown and orange chert, dark gray and gray quartzite, and white chalcedony.	Fair. Disturbances include erosion related to an intermittent on-site drainage, in addition to aeolian deflation.
CA-SBR-6971	25-30 flakes of chert, chalcedony, and andesite accompanied by a single felsite knife (1991).	Low-density lithic scatter, including 5+ waste and core reduction flakes of jasper, chalcedony, quartzite, and brown chert.	Poor. Disturbances include sheet washing and aeolian deflation in addition to modern trash associated with nearby Cahuilla Road.
CA-SBR-6972	100+ flakes of chert, chalcedony, jasper and felsite accompanied by one (1) andesite core scraper, one (1) chert spokeshave, one (1) felsite spokeshave, one (1) jasper hammerstone, and one (1) felsite leaf-shaped projectile point (1991).	Very low-density lithic scatter, consisting of 8+ waste and core reduction flakes of chert and quartzite.	Poor. Disturbances include sheet washing and aeolian deflation in addition to modern trash and off-road vehicle tracks associated with nearby Cahuilla Road. The site is probably disappearing due to natural and artificial processes, including erosion, modern dumping, and possible unauthorized collection.
CA-SBR-6973	6 flakes of quartzite, jasper, quartz, and chalcedony (1991).	Low-density lithic scatter consisting of one (1) small bifacially flaked obsidian tool (likely an unfinished/discarded projectile point) and 10+ orange chert, chalcedony, and quartzite core reduction and waste flakes.	Fair. The 1991 recording revealed a lower density of cultural materials than the current study. This may indicate that natural processes (particularly erosion related to on-site intermittent drainage) have revealed buried artifacts.
CA-SBR-6978	150+ flakes of chalcedony, chert, jasper, and felsite, with one (1) quartzite mano, seven (7) granitic slab metates, one (1) chalcedony dart point,	Low-density lithic scatter consisting of 40+ waste and core reduction flakes of chalcedony, quartzite, and dark-brown chert. Some fire-cracked granitic cobbles are also present.	Fair. Disturbances include sheet washing, aeolian deflation, and erosion associated with drainage. The site is probably disappearing due to natural and artificial processes,

Resource Number	Previously Recorded Contents	Existing Contents	Site Condition
	one (1) jasper leaf-shaped point, one (1) chalcedony bladelet, two (2) felsite scrapers, and one (1) notched serpentine pendant (1991).		including erosion and possible unauthorized collection related to easy site access from nearby Soledad Road.
CA-SBR-6979	15+ flakes of chalcedony, chert, and felsite, with one (1) granitic mano, one (1) granitic slab metate, and one (1) "triangular bird point" (1991).	Low-density lithic scatter consisting of 50+ waste and core reduction flakes of chalcedony, quartzite, chert, and jasper. The diagnostic artifacts were not recovered, which indicates a possibility that some unauthorized collection has taken place.	Fair. Disturbances include sheet washing and aeolian deflation. The 1991 recording revealed a lower density of cultural materials than the current study. This may indicate that natural processes (aeolian deflation, sheet washing, etc.) have revealed buried artifacts.
CA-SBR-12680 (LSA-SEH0701-S1)	Not applicable.	Low-density artifact scatter, including a caramel-colored chert core reduction flake, one (1) tested quartz/termoline conglomerate cobble, and one (1) dark gray quartzite core reduction flake. Two (2) possible blown-out hearth features are also present.	Fair.
CA-SBR-12681 (LSA-SEH0701-S2)	Not applicable.	Low-density artifact scatter consisting of 10+ jasper, chert, chalcedony, and obsidian core reduction and waste flakes. One (1) buffware ceramic potsherd and a single piece of non-diagnostic burnt bone were also present.	Fair. Disturbances include erosion related to an on-site intermittent drainage, as well as sheet washing, and aeolian deflation.
CA-SBR-12682 (LSA-SEH0701-S3)	Not applicable.	Low-density artifact scatter, including 5+ chert core reduction and waste flakes.	Fair. Disturbances include modern trash, sheet washing and aeolian deflation.
CA-SBR-12683 (LSA-SEH0701-S4)	Not applicable.	Low-density artifact scatter including 5+ chert core reduction and waste flakes, one (1) chert core/cobble, and one (1) chert scraper tool.	Fair. Disturbances include off-road vehicle activity associated with a nearby road, sheet washing, and aeolian deflation.
CA-SBR-12690H (LSA-SEH0701-H7)	Not applicable.	Nine (9) features associated with water distribution, habitation, and possibly livestock, including a stone cobble structure foundation, an octagonal concrete foundation next to galvanized (likely windmill) supports, a linear cobble alignment, three granitic cobble piles, a canal, a large rubble and cobble building foundation/rubble pile, and a linear rubble	Not applicable.

Resource Number	Previously Recorded Contents	Existing Contents	Site Condition
		pile. One (1) large prehistoric pink and white chert core reduction/waste flake is also present.	
CA-SBR-12691H (LSA-SEH0701-H8)	Not applicable.	Seven (7) features associated with historic occupation, including four (4) cobble/boulder piles and three refuse scatters.	Good, although there are some disturbances related to off-road vehicle activity.

Historic Resources

Historic resources generally consist of buildings, structures, improvements, and remnants associated with a significant historic event or person(s) and/or have a historically significant style, design, or achievement. In general, resources greater than 50 years old have the potential to be considered a historic resource.

In California, the historic era is generally divided into three periods: the Spanish or Mission Period (1749 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

A record search conducted by LSA Associates identified that four (4) cultural resources studies have taken place within one (1) mile of the proposed project boundaries, resulting in the recording of one (1) built environment historic resource, a historic homestead from 1918.

In addition, a field survey of the proposed project area was conducted by LSA Associates between April 18 and August 1, 2007. During the field survey, archaeologists documented each of the 19 previously recorded cultural resources and 53 newly recorded cultural resources. The newly recorded sites included 11 historic sites, and four (4) prehistoric sites. The historic resources include five water containment and distribution sites, five historic refuse scatters, and one (1) historic homestead residence. The cultural resources that are considered potentially eligible for the California Register are described briefly in Table 3.4-1, *Eligible Cultural Resources*.

Existing Conditions – Offsite

A cultural resources records search, literature review, and intensive survey were conducted for the offsite improvements. The records search and literature review revealed that three cultural resources studies had taken place within one (1) mile of the offsite improvements alignment, resulting in the recording of seven (7) archaeological sites; however, none of these resources were within the proposed project boundaries. No cultural resources were identified during the field survey.

Additional research was conducted to assess approximate locations of two (2) proposed water tanks/reservoirs (R-1 and R-2) and seven (7) potential debris basins (DB-1 through DB-7) for potential cultural resources sensitivity. Research in these areas was limited to previous cultural resources records and a determination as to whether the area's terrain is likely to exhibit high, moderate, or low sensitivity for cultural resources. Research results indicate that DB-1, DB-6 and DB-7 contain high sensitivity for cultural resources due their proximity to known archaeological sites. All other conceptual offsite infrastructure locations contain moderate sensitivity for cultural resources.

The field survey did not identify any cultural resources, as the majority of the proposed project surface had been previously disturbed by activities associated with the use and construction of Cahuilla Road and Chicago Road.

Regulatory Framework

The following existing policies/regulations are intended to ensure the preservation of cultural, historical, archaeological, and paleontological resources in San Bernardino County:

Federal

National Register of Historic Places

The National Historic Preservation Act (NHPA) was originally adopted in 1966 provides the most comprehensive national policy with regards to historic preservation. The Act is designed to encourage the preservation and wise use of historic resources within the U.S and establishes the policy of the U.S. Government regarding historic preservation. The Act is intended to "coordinate and support public and private efforts to identify, evaluate, and protect...historic and archaeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture."[1]

Eligibility for listing in the National Register is evaluated for a particular historic resource by applying four (4) basic criteria. The criteria generally require that the resource be at least 50 years of age and of significance at the local, state, or national level, according to one (1) or more of the following:

A. It is associated with events that have made a significant contribution to the broad patterns of local or regional history;

B. It is associated with the lives of persons significant in our past;

[1] National Park Service – National Register of Historic Places. http://www.nps.gov/nr/about.htm, accessed January 2007.

C. It embodies the distinctive characteristic of a type, period, region, or method or construction, or represents the work of an important creative individual, or possesses high artistic values, or that represent a significant and distinguishable entity whose components lack individual distinction; and/or,

D. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Eligibility for listing on the National Register requires that a resource possess integrity, or the ability of a property to convey its significance. Location, design, setting, materials, workmanship, feeling and association can influence a site's integrity. The particular National Register criterion under which the resource is considered eligible for listing are considered in determining which of these factors applies.

State

California Register of Historical Resources

Criterion for eligibility listing on the California Register is based on the National Register criteria, with modifications made to apply to resources within the State of California. For a property to be eligible for inclusion on the California Register, one (1) or more of the following criteria must be met[2]:

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 United States;

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 or 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.

[2] California State Parks - Office of Historic Preservation. http://ohp.parks.ca.gov/default.asp?page_id=21238, accessed January 2007.

Senate Bill 18 (SB 18)

SB 18 requires jurisdictions to contact and consult with California Native American Tribes prior to adopting or amending General Plans, or when designating land as Open Space for the purpose of protecting Native American cultural resources.

Local

County of San Bernardino *General Plan*

The Conservation Element of the *General Plan* includes concepts and guidelines to manage, preserve, and utilize natural resources. The following goals, policies, and programs are applicable to the proposed project:

Goal CO 3: **The County will preserve and promote its historic and prehistoric cultural heritage.**

Policy CO 3.1: Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.

Programs: 1. Require a cultural resources field survey and evaluation prepared by a qualified professional for projects located within the mapped Cultural Resource Overlay area.

2. Mitigation of impacts to important cultural resources will follow the standards established in Article 9 of the California Environmental Quality Act Guidelines, as amended to date.

Policy CO 3.2: Identify and protect important archaeological and historic cultural resources in all lands that involves disturbance of previously undisturbed ground.

Programs: 1. Require the Archaeological Information Center at the San Bernardino County Museum to conduct a preliminary cultural resource review prior to the County's application acceptance for all land use applications in planning regions lacking Cultural Resource Overlays and in lands located outside of planning regions.

2. Should the County's preliminary review indicate the presence of known cultural resources or moderate to high sensitivity for the potential presence of cultural resources, a field survey and evaluation prepared by a qualified professional will be required with project submittal. The

format of the report and standards for evaluation will follow the "Guidelines for Cultural Resource Management Reports" on file with the San Bernardino County Land Use Services Department.

Policy CO 3.3: Establish programs to preserve the information and heritage value of cultural and historical resources.

*Policy CO 3.*4: The County will comply with Government Code Section 65352.2 (SB 18) by consulting with tribes as identified by the California Native American Heritage Commission on all General Plan and specific plan actions.

Programs: 1. Site record forms and reports of surveys, test excavations, and data recovery programs will be filed with the Archaeological Information Center at the San Bernardino County Museum, and will be reviewed and approved in consultation with that office.

a) Preliminary reports verifying that all necessary archaeological or historical fieldwork has been completed will be required prior to project grading and/or building permits.

b) Final reports will be submitted and approved prior to project occupancy permits.

2. Any artifacts collected or recovered as a result of cultural resource investigations will be catalogued per County Museum guidelines and adequately curated in an institution with appropriate staff and facilities for their scientific information potential to be preserved. This shall not preclude the local tribes from seeking the return of certain artifacts as agreed to in a consultation process with the developer/project archaeologist.

3. When avoidance or preservation of an archaeological site or historic structure is proposed as a form of mitigation, a program detailing how such long-term avoidance or preservation is assured will be developed and approved prior to conditional approval.

4. In areas of potential but unknown sensitivity, field surveys prior to grading will be required to establish the need for paleontologic monitoring.

5. Projects requiring grading plans that are located in areas of known fossil occurrences, or demonstrated in a field survey to have fossils

present, will have all rough grading (cuts greater than 3 feet) monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Fossils include large and small vertebrate fossils, the latter recovered by screen washing of bulk samples.

6. A report of findings with an itemized accession inventory will be prepared as evidence that monitoring has been successfully completed. A preliminary report will be submitted and approved prior to granting of building permits, and a final report will be submitted and approved prior to granting of occupancy permits. The adequacy of paleontologic reports will be determined in consultation with the Curator of Earth Science, San Bernardino County Museum.

Policy CO 3.5: Ensure that important cultural resources are avoided or minimized to protect Native American beliefs and traditions.

Programs: 1. Consistent with SB 18, as well as possible mitigation measures identified through the CEQA process, the County will work and consult with local tribes to identify, protect and preserve "traditional cultural properties" (TCPs). TCPs include both man-made sites and resources as well as natural landscapes that contribute to the cultural significance of areas.

2. The County will protect confidential information concerning Native American cultural resources with internal procedures, per the requirements of SB 922, an addendum to SB 18. The purpose of SB 922 is to exempt cultural site information from public review as provided for in the Public Records Act. Information provided by tribes to the County shall be considered confidential or sacred.

3. The County will work in good faith with the local tribes, developers/applicants and other parties if the local affected tribes request the return of certain Native American artifacts from private development proposed projects. The developer is expected to act in good faith when considering the local tribe's request for artifacts. Artifacts not desired by the local tribe will be placed in a qualified repository as established by the California State Historical Resources Commission. If no facility is available, then all artifacts will be donated to the local tribe.

4. The County will work with the developer of any "gated community" to ensure that the Native Americans are allowed future access, under

reasonable conditions, to view and/or visit known sites within the "gated community." If a site is identified within a gated community proposed project, and preferably preserved as open space, the development will be conditioned by the County allow future access to Native Americans to view and/or visit that site.

5. Because contemporary Native Americans have expressed concern over the handling of the remains of their ancestors, particularly with respect to archaeological sites containing human burials or cremations, artifacts of ceremonial or spiritual significance, and rock art, the following actions will be taken when decisions are made regarding the disposition of archaeological sites that are the result of prehistoric or historic Native American cultural activity:

a) The Native American Heritage Commission and local reservation, museum, and other concerned Native American leaders will be notified in writing of any proposed evaluation or mitigation activities that involve excavation of Native American archaeological sites, and their comments and concerns solicited.

b) The concerns of the Native American community will be fully considered in the planning process.

c) If human remains are encountered during grading and other construction excavation, work in the immediate vicinity will cease and the County Coroner will be contacted pursuant to the state Health and Safety Code.

d) In the event that Native American cultural resources are discovered during project development and/or construction, all work in the immediate vicinity of the find will cease and a qualified archaeologist meeting U.S. Secretary of Interior standards will be hired to assess the find. Work on the overall project may continue during this assessment period.

e) If Native American cultural resources are discovered, the County will contact the local tribe. If requested by the tribe, the County will, in good faith, consult on the discovery and its disposition with the tribe.

County of San Bernardino Development Code

Chapter 82.12, Cultural Resources Preservation (CP) Overlay, of the County of San Bernardino Development Code, includes regulations pertaining to the identification and preservation of important archaeological and historical resources. The CP Overlay may be applied to areas where archaeological and historic sites that warrant preservation are known or are likely to be present. The Chapter outlines application requirements for a project proposed within a CP Overlay, as well as development standards and explanation of need for a Native American monitor.

The Development Code states that the CP Overlay may be applied to areas where archaeological and historic sites that warrant preservation are known or are likely to be present. Specific identification of known cultural resources is indicated by listing in one (1) or more of the following inventories:

(a) California Archaeological Inventory;

(b) California Historic Resources Inventory;

(c) California Historical Landmarks;

(d) California Points of Historic Interest; and/or

(e) National Register of Historic Places.[3]

3.4.2 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The criteria given in the Initial Study checklist in Appendix G of the State *CEQA Guidelines* were used to evaluate potential significant impacts on cultural resources as the result of proposed project implementation. The proposed project would result in significant impact related to cultural resources if it would:

1. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.

3. Cause a substantial adverse change in the significance of an historical resource as defined in *CEQA Guidelines* Section 15064.5.

[3] County of San Bernardino Development Code, Chapter 82.12, 2007.

4. Disturb any human remains, including those interred outside of formal cemeteries.

Environmental Impacts and Mitigation Measures

Paleontological Resources

3.4-1: *Implementation of the proposed project may have a substantial adverse change in the significance of a paleontological resource or site or unique geologic feature.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

Implementation of the proposed project would result in mass grading, trenching and construction of a mixture of residential, neighborhood commercial, parks and open space. As the proposed project area contains sediments with the potential to support significant, non-renewable paleontological resources, site development activities would have the potential to result in significant impacts to such resources during the grading and construction phases.

The preparation of a PRA/PRIMP for the grading and excavation phase of the proposed project has been prepared in order to reduce potential impacts to unknown paleontological resources to less than significant. The PRIMP has determined that excavation activities should be monitored by a qualified paleontologist, during ground disturbing activities on-site. The program includes monitoring, salvage, processing and collection of discovered resources (as appropriate), with findings of the evaluation submitted to the County of San Bernardino. With implementation of mitigation measures CUL-1 through CUL-5, impacts would be less than significant.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of two (2) offsite water tank/reservoir areas. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

During the field survey no cultural resources were identified within the offsite improvement areas. Since the valley floor of the proposed project area has undergone alluvial activity, and significant paleontological resources have been identified in the vicinity in similar sediments, there is a potential for buried paleontological deposits. The implementation of mitigation measures CUL-1 through CUL-5 would reduce impacts to less than significant levels.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow developers an option of constructing a golf course within Villages A and B. Development of the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to paleontological resources as well as mitigation measures CUL-1 through CUL-6. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D.

Development associated with the proposed Equestrian Overlay would be required to comply with all applicable federal, state, and local statutes related to paleontological resources as well as mitigation measures CUL-1 through CUL-5. Therefore, less than significant impacts would occur in this regard.

CUL-1: **In accordance with the paleontological resource impact mitigation program (PRIMP) prepared for this proposed project , a trained paleontological monitor, working under the supervision of a qualified paleontologist, shall be present during ground-disturbing activities within the proposed project area in sediments determined likely to contain paleontological resources. The monitoring for paleontological resources shall be conducted on a half-time basis. If after a reasonable amount of excavation is done, and it is determined, by the qualified paleontologist, that the sediments in question are not fossiliferous, or have low potential to contain fossils the monitoring can be reduced. If paleontological resources are located within the proposed project, the monitoring program will increase to full-time. The monitor shall be empowered to temporarily halt or redirect construction activities to ensure avoidance of adverse impacts to paleontological resources. The monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, if fossiliferous sediments are found samples shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.**

CUL-2: **Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.**

CUL-3: **All fossils collected during the proposed project shall be prepared to a reasonable point of identification by a qualified paleonotogist. Excess**

sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the San Bernardino County museum repository along with the specimens.

CUL-4: **A report documenting the results of the monitoring and salvage activities and the significance of the fossils will be prepared and submitted to County Museum for review and approval.**

CUL-5: **All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in the County Museum repository for permanent curation and storage.**

Archaeological Resources

3.4-2: *Implementation of the proposed project may have a substantial adverse change in the significance of an archaeological resource as defined in §15064.5.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

Archaeological sites are locations that contain resources associated with former human activities, and may contain such resources as human skeletal remains, waste from tool manufacture, tool concentrations, and/or discoloration or accumulation of soil or food remains. Construction activities associated with implementation of the proposed project may result in adverse effects on known or currently unknown archaeological sites. Of the 72 cultural resources located within the proposed project, 57 cultural resources (including the nine (9) previously recorded resources that are no longer present) are considered not to be eligible for the California Register and, as such, are not considered to be "historical resources." Sixteen cultural resources within the proposed project area are potentially eligible for the California Register of Historical Resources due to their potential to yield important information and require further evaluation. Additionally, the fact that the valley floor in the proposed project vicinity has undergone alluvial activity indicates that there is the potential for buried archaeological deposits. Therefore, based upon the findings of the field survey and records searches, potentially significant impacts to recorded and potentially undiscovered cultural resources could occur as site improvement activities such as grading and excavation are completed. A trained archaeological monitor, working under the supervision of a qualified archaeologist, must be present during ground-disturbing activities. Archaeological monitoring is also specified in the County *General Plan*.

Under CEQA, preservation in place is the preferred manner of treatment for archaeological/historical resources; therefore, preservation should be considered carefully

before any further mitigation is considered. Mitigation would focus on any portions that will be directly or indirectly impacted by the proposed development. Direct impacts include proposed project-related activities that will cause physical disturbances to resources; indirect impacts can include, but are not limited to, damage related to resources caused by increased accessibility of off-road vehicles and pedestrians as a result of proposed project development. Mitigation measures CUL-7 and CUL-8 define a series of steps that would be used to obtain the information needed to formally determine potentially eligible archaeological sites (in which preservation is not an option) as eligible or ineligible for the California Register.

Offsite Improvements

While no cultural resources were identified during the off-site field survey, the 72 historic and prehistoric resources identified by the cultural resources assessment for the on-site proposed project conditions indicate a high sensitivity for cultural resources. Additionally, the fact that the valley floor in the proposed project vicinity has undergone alluvial activity indicates that there is a potential for buried archaeological deposits.

As a result of the moderate to high cultural resources sensitivity of each of the conceptual offsite infrastructure locations, prior to ground-disturbing activity to any of the conceptual locations, a full Phase I Cultural Resources Assessment shall be completed to CEQA specifications, as necessary. The proximity of DB-1, DB-6, and DB-7 to known cultural resources makes these areas particularly sensitive for cultural resources. It is likely that cultural resources assessment of DB-1, DB-6, and DB-7 will result in positive findings for cultural resources, and further mitigation may be necessary. Implementation of mitigation measure CUL-6 through CUL-8 would reduce potentially significant impacts to offsite cultural resources to a less than significant level.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Development associated with the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to archaeological resources as well as mitigation measure CUL-6 through CUL-8. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. Development associated with the proposed Equestrian Overlay would be required to comply with all applicable Federal, State, and local statutes

related to archaeological resources as well as mitigation measure CUL-6 through CUL-8. Therefore, less than significant impacts would occur in this regard.

CUL-6: **Prior to the issuance of a grading permit, an archaeological resource monitoring plan shall be developed by a qualified archaeologist and submitted to County Museum for review and approval. This plan shall include a grading observation schedule to be maintained when grading occurs on and offsite in upper soils to identify and further evaluate cultural resources that may be discovered in the proposed project area. A qualified archaeologist shall be retained to attend pregrade meetings and to monitor earth moving activities, including clearing, grubbing, cutting, and trenching at the site. The archaeologist shall carefully inspect these areas to assess the potential for significant prehistoric or historic remains. If potential archaeological and historical resources are uncovered, the construction contractor shall cease grading operations in the vicinity of the find until further evaluation is undertaken to assess the discovery. Further subsurface investigation may be needed if the resource is determined unique or important for its prehistoric or historic information.**

CUL-7: **For the sixteen cultural resource sites that are potentially eligible for the California Register, Phase II archaeological test excavation will be necessary: CA-SBR-725, CA-SBR-2134, CA-SBR-3401H, CA-SBR-6969, CA-SBR-6970, CA-SBR-6971, CA-SBR-6972, CA-SBR-6973, CA-SBR-6978, CA-SBR-6979, CA-SBR-12680, CA-SBR-12681, CA-SBR-12682, CA-SBR-12683, CA-SBR-12690H, CA-SBR-12691H. The first task of Phase II is to prepare a formal research design that will guide the excavation and analysis. At a minimum, the Phase II program shall include a research design, historic research, archaeological excavation, artifact collection and analysis, and a curation plan. If the Phase II excavations determine that the site contains important information, appropriate preservation options shall be implemented.**

CUL-8: **If any of the 16 sites are determined to contain important information and preservation is not feasible (as determined by the project archaeologist), then Phase III archaeological data recovery excavation and analysis would be required. This would be a larger excavation sample and a more detailed analysis and report. Curation of all artifacts at the County Museum repository is warranted.**

Historical Resources

3.4-3: *Implementation of the proposed project may have a substantial adverse change in the significance of a historical resource as defined in §15064.5.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

Historic resources are typically structures of historic or architectural importance, and are non-renewable resources that are protected by federal, state or local laws, ordinances, or guidelines. Damage to or demolition of such resources is typically considered to be a significant impact, as the value of the resource is diminished or eliminated. Impacts to historic resources can occur through direct impacts, such as destruction or removal, and through indirect impacts, such as a change in the setting of a historic resource.

The records search and literature review revealed that four (4) historic resources studies have occurred within one (1) mile of the proposed project boundaries, resulting in recordation of 19 previously recorded cultural resources within the proposed project boundaries, including 18 archaeological and one (1) built environment cultural resource. CA-SBR-3401H was originally recorded as the remnants of a historic homestead, and included the presence of a historic building and associated trash pit. A field survey conducted by LSA Associates on July 31, 2007 revealed the presence of a collapsed masonry structure, a stone retaining wall, and a small rock ring, all of which appears to be associated with a historic homestead from 1918. Of the additional historic resources identified in the field survey conducted by LSA Associates, two (2) are considered potentially eligible, and include nine (9) features associated with water distribution, habitation, and possibly livestock (CA-SBR-12690H) and seven (7) features associated with historic occupation (refer to Table 3.4-1, *Eligible Cultural Resources*). Since these resources are considered potentially eligible for the California Register, any ground-disturbing activities required for implementation of the Specific Plan may result in significant impacts to this resource.

Under CEQA, preservation in place is the preferred manner of treatment for archaeological/historical resources. However, if preservation in place is not an option, a Phase II Cultural Resources Assessment would be completed as referred to in mitigation measure CUL-8 and CUL-9, if warranted.

Mitigation measure CUL-6 requires that earthmoving activities shall be monitored by a qualified archaeologist. If remnants are discovered during ground disturbing activities, the archaeologist shall have the authority to halt or divert grading to allow for the assessment of the discovered resource. Implementation of mitigation measures CUL-6, and CUL-7 would reduce potential impacts to this potentially historic resource to less than significant.

Offsite Improvements

Implementation of the offsite improvements would result in trenching, grading and other ground-disturbing activities to construct the pipelines, roads, debris basins and reservoirs. As a result of the moderate to high cultural resources sensitivity of each of the conceptual offsite infrastructure locations, prior to ground-disturbing activity to any of the conceptual locations, a full Phase I Cultural Resources Assessment shall be completed to CEQA specifications, as necessary. The proximity of DB-1, DB-6, and DB-7 to known cultural resources makes these areas particularly sensitive for cultural resources. It is likely that cultural resources assessment of DB-1, DB-6, and DB-7 will result in positive findings for cultural resources, and further mitigation may be necessary. Implementation of mitigation measures CUL-6 and CUL-7 would reduce possible impacts to less than significant levels.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Development associated with the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to historical resources as well as mitigation measures CUL-6 and CUL-7. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. Development associated with the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to historical resources as well as mitigation measures CUL-6 and CUL-7. Therefore, less than significant impacts would occur in this regard.

Human Remains

3.4-4: *Implementation of the proposed project may disturb any human remains, including those interred outside of formal cemeteries.* **Level of Significance: Less than Significant With Mitigation.**

Onsite Improvements

As with unknown paleontological, archaeological, or historic resources, buried human remains may be unearthed or damaged during ground disturbance activities. No known formal gravesites have been identified within the proposed project area or within the vicinity of the offsite improvements; however, due to the known prehistoric habitation of the area and the identification of archaeological resources in the vicinity of the proposed project area, the

possibility that human remains could be encountered during grading, trenching, or other earth-moving activities as a result of proposed project implementation does exist. Pursuant to SB 18, the NAHC was notified of the project during the initial scoping process. Refer to Appendix A of this document for the NAHC response letter. Any disturbance of human remains as the result of the proposed project would be considered a significant adverse impact. As such, mitigation measure CUL-6 is proposed to require an archaeological monitor on-site during grading activities. If human remains are discovered, compliance with all applicable State and Federal regulations concerning preservation, salvage, or handling of these resources would be required. Implementation of applicable standards and mitigation measure CUL-9 would ensure that human remains are not damaged if unearthed within the proposed project area, and that remains are handled appropriately. With implementation of mitigation measure CUL-9, impacts on human remains as the result of proposed project implementation would be reduced to less than significant.

Offsite Improvements

The proposed project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the proposed project area. In addition, the proposed project includes the development of up to two (2) offsite water tank/reservoir areas. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

Cultural resources identified through the record search and field survey of off-site areas did not contain evidence of human remains. No known cemeteries are within proximity to the areas where the off-site improvements are proposed. However, as these improvements will require excavation and trenching activities to allow for construction of the pipeline alignments, as well as land disturbance for drainage basins and reservoirs, the potential for human remains to be discovered during such activities does exist. Mitigation measure CUL-9 would require monitoring of all off-site land disturbance activities by a qualified archaeological monitor. If human remains are discovered, all applicable State and Federal regulations concerning preservation, salvage, or handling of human remains would be adhered to. Implementation of these standards and mitigation measure CUL-9 would ensure that human remains are not damaged if unearthed during the off-site improvements, and that all remains are properly handled. With implementation of mitigation measure CUL-9, potential impacts on human remains as the result of off-site improvements would be reduced to less than significant.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Development associated with the proposed

Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to human remains as well as mitigation measure CUL-9. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. Development associated with the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to human remains as well as mitigation measure CUL-10. Therefore, less than significant impacts would occur in this regard.

CUL -9: **If human remains are encountered on or offsite, 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. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. State *CEQA Guidelines* Section 15064.5 shall also apply if human remains are found to determine the significance of impacts on historical and unique archaeological resources.**

3.4.3 Analysis of Cumulative Impacts

Potential impacts to cultural resources are largely limited to the proposed project area (including proposed project-related offsite facilities) and would not affect adjacent properties. Where such resources exist, implementation of cumulative development in the region would represent an incremental adverse impact on cultural resources. However, each proposed project would be required by CEQA to implement appropriate mitigation measures. Therefore, cumulative impacts on cultural resources resulting from proposed project implementation are considered to be less than significant.

3.5 GEOLOGY, SOILS AND SEISMICITY

The purpose of this section is to describe the geologic, seismic, and soils setting of the Hacienda at Fairview Valley Specific Plan, identify potential impacts associated with the proposed Specific Plan, and recommend mitigation measures to avoid or minimize the significance of such impacts. Information in this section is based on *Report of Geotechnical Evaluation for Environmental Impact Report* by Geocon Inc. on March 25, 2009 (located in Appendix F), *Preliminary Geotechnical Investigation: Fairview Creek Cahuilla Road & Laguna Seca Drive, Apple Valley Area, California* for Strata Equity Investments by Geocon, Inc. on November 6, 2003 and *Preliminary Geotechnical Investigation: Granite Valley Residential Development, Fairview Valley Area, California* for Granite Valley, LP by Geocon Inc. on June 8, 2007. Additional reports include; *Technical Memorandum: Geotechnical Peer Review in support of an EIR for the proposed Hacienda at Fairview Valley project*, the *Hacienda at Fairview Valley Specific Plan*, and *County of San Bernardino General Plan*.

3.5.1 EXISTING CONDITIONS

Regional Geology

The project site is located on 1,557 acres, northeast of the Town of Apple Valley in San Bernardino County. The project site consists of two (2) connected broad valleys that are part of Fairview Valley trending to the northwest and west. The valley is flanked on three (3) sides by the low-lying Granite Mountains, Sidewinder Mountains and Fairview Mountain. Granite and Fairview Mountain areas are composed of granitic-type rocks of Jura-Cretaceous age, whereas the Sidewinder Mountains are composed of granitic and metavolcanic rocks, each of which is undergoing active erosion, creating coalescing alluvial fans along their flanks.

Local Geology and Soil Characteristics

Surface water drainage within and adjacent to the project area appears to occur in both sheets and channelized flow across the alluvial fans, becoming more concentrated in the axial portions of the basin. Ultimately, surface water runoff flows through a broad gap between the northwest corner of the Granite Mountains and the southern end of Fairview Mountain, where it drains in a northwest to westerly direction into the Apple Valley area.

Groundwater was not encountered during any of the geological studies. Research of available well information indicates that groundwater is more than 100 feet below the existing ground surface.

Underlying the site is alluvial sediment consisting of unconsolidated, poorly sorted stream, fan, and basin deposits. The soils within the project site are composed of primarily sandy soils including Cajon Sand, Helendale Loamy Sand, and Wasco Sandy Loam. The alluvial deposits extend to depths greater than 50 feet along the northwestern and central portions of the site and to approximately 15 feet in the southeast corner. Granitic quartz monzonite and granite is exposed on the southern and western slopes that bound the site, and underlie the central portions of the site at depth.

Topography

On-site topography generally ranges from approximately 3,080 to 3,560 feet above mean sea level (MSL). With the exception of some isolated rocky outcrops and peripheral hills, topography is relatively flat with an overall slope at five (5) percent or less.

Primary Earthquake Hazards

Seismicity

The Hacienda at Fairview Valley site is susceptible to disturbances from regional seismic activity. Active seismic faults have been identified in the project vicinity. In addition to faults surrounding the project site, the Helendale Fault, which is designated as an Alquist-Priolo Earthquake Fault Zone, traverses the eastern edge of the project site. Twenty-two (22) known active faults are located within a 50 mile radius from the property. Table 3.5-1, *Active Earthquake Faults in the Project Area,* lists the estimated maximum earthquake magnitude of the 15 closest faults to the project site.

Table 3.5-1:
Active Earthquake Faults in the Project Area

Fault Name	Distance from Site (Miles)	Maximum Earthquake Magnitude (Mw)
Helendale	0	7.4
North Frontal-Western	7.5	7.2
Lenwood	15.3	7.6
Cleghorn	19.5	6.9
Landers	20.8	7.4
North Frontal-Eastern	21.5	6.8
Johnson Valley	21.6	6.8
Gravel Hills	24.1	7.2
San Andreas	27.7	8.4
S Emerson-Copper Mtn	30.1	7.1
Calico-Hidalgo	30.2	7.4
Cucamonga	31.8	7.0
San Jacinto-San Bernardino	32.0	7.1
Blackwater	33.1	7.1
San Jacinto-San Jacinto Valley	37.6	7.3

There is also an extensive history of large, damaging earthquakes occurring within the County, ranging from the 1812 Wrightwood earthquake (7.5 magnitude) to the 1999 Hector Mine earthquake (7.1 magnitude). Paleoseismic studies of several major faults within the County have identified average recurrence intervals for large earthquakes on individual faults or fault segments that range from approximately 105 years on the San Andreas Fault near Wrightwood to several thousand years or more on faults in the Eastern Mojave Desert. In addition to strong ground shaking from earthquakes on faults located within the County, large earthquakes on faults near the County boundaries also have impacted and have the potential to impact property within the County.

Seismic Shaking

Ground motions are often measured in percent of gravity ("g", the acceleration due to gravity), where g is approximately 32 feet per second per second. Groundshaking accompanying earthquakes on nearby faults can be expected to be felt within the project site. However, the intensity of ground shaking would depend upon the magnitude of the earthquake, the distance to the epicenter, and the geology of the area between the epicenter and the project site.

The principal source of seismic activity is movement along the northwest-trending regional faults such as the San Andreas and Helendale-South Lockhart Faults. The eastern corner of the site is within the Alquist-Priolo Earthquake Fault Zone for the Helendale-South Lockhart. Other nearby active faults are the North Frontal Fault Zone (West), Lenwood-Lockhart-Old Woman Springs Fault, and the Cleghorn Fault located 7½ miles south, 15½ miles east, and 19½ miles south of the site, respectively.

Faults

The Hacienda at Fairview Valley project site, like the rest of Southern California, is located within a seismically active region between the North American and Pacific tectonic plates. The numerous faults in Southern California include active, potentially active, and inactive faults. An "active fault" is defined as a fault that has had surface displacement within Holocene time (about the last 11,000 years). For purposes of evaluating the hazards of surface fault rupture, a potentially active fault is defined as a Quaternary age fault with unknown Holocene activity. If it can be demonstrated that a Quaternary age fault has not moved during the Holocene period, that fault is classified as inactive.

<u>Helendale-South Lockhart Fault</u>

The Helendale and South Lockhart Faults form a roughly continuous fault system. The Helendale Fault is an active fault nearly 56 miles in length. The Helendale Fault has a maximum moment magnitude of 7.3 and a slip rate of 0.8 millimeters per year. The South Lockhart Fault is also an active fault, almost 22 miles long. The South Lockhart Fault has a

maximum moment magnitude of 7.0 and a slip rate of 0.8 millimeters per year. Concurrent ruptures along these two (2) faults may be possible, but the discontinuous nature of the junction could hinder such an event. The Helendale Fault is located within the eastern edge of the project site.

San Andreas Fault

The San Andreas Fault is associated with two (2) of the largest earthquakes that have occurred in California during historic time: the 1857 Fort Tejon earthquake (magnitude 8.3) on the south-central portion of the fault and the 1906 San Francisco earthquake (magnitude 8.3) on the northern portion of the fault. Due in part to the length of the fault (approximately 625 miles) various portions of the San Andreas Fault can be characterized by distinctly different seismic behavior related to rupture location, length, and expected repeat time.

Secondary Earthquake Hazards

Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated, relatively cohesionless soil deposits lose shear strength during strong ground motions. Factors controlling liquefaction:

1. Seismic groundshaking of relatively loose, granular soils that are saturated or submerged can cause soils to liquefy and temporarily behave as a dense fluid. For liquefaction to occur, the following conditions have to occur: Intense seismic shaking;

2. Presence of loose granular soils prone to liquefaction; and

3. Saturation of soils due to shallow groundwater.

If these conditions occur simultaneously, then a sudden temporary increase in pore water pressure (liquefaction) can occur. Evidence of this is typically exhibited by seismic densification or displacement of submerged granular soils. Liquefaction more often occurs in earthquake-prone areas underlain by young (Holocene age) alluvium where the groundwater is shallower than 50 feet below the ground surface. Given the depth of groundwater and the medium dense to very dense nature of the older alluvium, the potential for liquefaction at this site is considered very low.

Ground Settlement

Strong groundshaking can cause settlement by allowing sediment particles to become more tightly packed, thereby reducing pore space. Unconsolidated, loosely pack alluvial deposits are especially susceptible to this phenomenon. Poorly compacted artificial fills may also experience seismically induced settlement.

Landslides

Landslides are mass movements of the ground that include rock falls, relatively shallow slumping and sliding of soil, and deeper rotational or transitional movement of soil or rock. Landslides are considered to be a basic geological hazard to any hillside areas. In addition, areas around creeks and streambeds are also susceptible to landslide hazards. The project area is relatively flat.

Subsidence

Subsidence is the gradual lowering of ground surface typically with limited or no horizontal motion. Subsidence is usually a consequence of groundwater, gas or oil extraction or hydrocompaction. Groundwater is estimated to be in excess of 100 feet below grade; therefore, groundwater related problems are not expected.

Soil Erosion

High wind conditions and stormwater runoff can cause significant soil erosion. Soil erosion is most prevalent in unconsolidated alluvium and surficial soils and in areas that have slopes. Erosion is generally limited to the vicinity of the existing smaller active drainages originating from the surrounding mountains. There is a potential for erosion to occur during the grading process during periods of heavy rainfall.

3.5.2 REGULATORY SETTING

Federal

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. This State law was a direct result of the 1971 San Fernando earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture, and is not directed toward other earthquake hazards.

Under the Act, the State Geologist is required to delineate "special study zones" along known active faults in California. The Act also requires that, prior to approval of a project, a geologic study be conducted to define and delineate any hazards from surface rupture. A geologist registered by the State of California, within or retained by the lead agency for the project must prepare this geologic report.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. It is important to note that although the Act has been in effect for many years, mapping is not complete and to date, mapping has not been conducted for most of San Bernardino County. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

- The State Geologist is required to delineate the various "seismic hazard zones."
- Cities and Counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the ESP site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

State

California Building Code / Uniform Building Code

The regulatory environment for the design and construction industries consists of building codes and standards covering local, State, Federal, land use and environmental regulations. Building codes and standards are developed specifically for the purpose of regulating the life-safety, health and welfare of the public with respect to building construction and maintenance. Once adopted, building codes become law.

The Uniform Building Code (UBC) was first enacted by the International Conference of Building Officials (ICBO) in 1927. Revised editions of this code have been published every three (3) years since that time. In California the California Building Code (CBC) is used, which incorporates by adoption the UBC and includes necessary California amendments. The CBC

contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control.

Local

County of San Bernardino *General Plan*

The Safety Element of the *General Plan* includes several goals, objectives and policies to reduce the risks to the community from earthquakes and other geologic hazards. In particular, the following policies would apply to the Hacienda at Fairview Valley Specific Plan site:

Policy S 7.1: Strive to mitigate the risks from geologic hazards through a combination of engineering, construction, land use, and development standards.

Policy S 7.3: Coordinate with local, regional, State, Federal, and other private agencies to provide adequate protection against seismic hazards to County residents.

Policy S 7.4: Designate areas identified by the Alquist-Priolo Earthquake Fault Zoning Act (Public Resource Code, Division 2, Chapter 7.5) on the Hazard Overlay Maps to protect occupants and structures from high level of risk caused by ground rupture during earthquake.

3.5.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State *CEQA Guidelines.* Significant impacts to geology and soils could result from implementation of the proposed project if they would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - 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;
    - Strong seismic ground shaking; or
    - Seismic-related ground failure, including liquefaction;
- Result in substantial soil erosion or the loss of topsoil;

- 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; or

- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (2007 California Building Code) , creating substantial risks to life or property.

- 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.

Potential impacts associated with the projects area's topography, soil, and the regions seismic activities are identified below. Mitigation measures are provided to avoid or lessen the significance of impacts.

Environmental Impacts and Mitigation Measures

Surface Fault Rupture

3.5-1: *Implementation of the Hacienda at Fairview Valley Specific Plan may expose people or structures to potential adverse effects from surface fault rupture.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

The project site is located within a seismically active region near the active North American and Pacific tectonic plates. Faults within this region experience a significant amount of seismic activity. In addition, an Alquist Priolo Zone (AP zone) established along the Helendale-South Lockhart Fault is located within the eastern edge of the project site within portions of Village C and Village D. In addition, a possible buried trace of the Helendale fault has been mapped outside of the designated AP zone, which has the potential to affect the project site.

Potential ground motion on the site was estimated assuming the occurrence of an earthquake along the San Andreas Fault. The Uniform Building Code (UBC) establishes the Design Basis Ground Motion (often accepted as the minimum standard) as the maximum probable event that could potentially affect a particular site along the closest active fault. To reduce the potential effects of damage caused by ground motion, all development proposed would be required to be designed in accordance with the current measures of the California Building Code, including seismic safety, excavation, foundations, retaining walls and site demolition, as well as, seismic design parameters established by the Structural Engineers Association of California, and related applicable ordinances and policies. Final design for Villages C and D will be in accordance with the findings of the pre-construction Fault Hazard Investigation of the proposed

project site required per Mitigation Measure GEO-1. For the above reasons, impacts resulting from surface fault rupture are anticipated to be less than significant with the implementation of mitigation.

The groundwater table in the vicinity of the project site is identified as having depths greater than 230 feet below existing grade. The suitability of the soils for septic tanks is based on the depth of the groundwater table. Therefore, the project site contains soils that are capable of supporting septic tanks, and impacts are considered to be less than significant.

Offsite Improvements

As stated above, the Hacienda at Fairview Valley is located within a seismically active region of southern California. The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. It is estimated that the overall distance affected by these improvements are approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D.

In addition, the project includes the development of up to two (2) offsite water tank/reservoir areas. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

All development and structures proposed would be required to be designed in accordance with the current measures of the California Building Code (CBC), seismic design parameters established by the Structural Engineers Association of California, and related applicable ordinances and policies. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from surface fault rupture are anticipated to be less than significant with the implementation of mitigation.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Should the Golf Course Overlay be implemented, fewer buildings and people would be exposed to the hazards of surface fault ruptures because fewer homes would be built within the project site. All structures built within the golf course would be required to be designed in accordance with the current measures of the CBC and related applicable ordinances and policies. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the

Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from surface fault rupture are considered less than significant with the implementation of mitigation.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D.

All structures built within the Equestrian Overlay District would be required to be designed in accordance with the current measures of the CBC and related applicable ordinances and policies. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from surface fault rupture are anticipated to be less than significant with the implementation of mitigation.

GEO-1: **Prior to County approval of tentative tract maps within Village C or D, a detailed Fault Hazard Investigation shall be conducted to identify potential effects of surface rupture within the project site. The Fault Hazard Investigation will determine whether previously mapped strands of the Helendale Fault are located onsite, and if they represent potential surface fault rupture hazards to future development. The Fault Hazard Investigation shall include mitigation to reduce potential impacts, including, but not limited to, a certified geologist reviewing grading plans prior to finalization and building setbacks.**

Seismic Ground Shaking

3.5-2: *Implementation of the proposed project may expose people or structures to potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

As previously noted, the project site is located along an active Earthquake Fault Zone, as defined by the State Geologist. Therefore, residents of the project site would likely be subjected to strong seismic ground shaking, exposing them to seismic related hazards. All construction would have to comply with the latest UBC and CBC, as well as local policies and regulations that regulate site design and construction to minimize the potential for damage to property or adverse affects on human health and safety to occur. In addition, implementation of Mitigation

Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from seismic ground shaking are anticipated to be less than significant with the implementation of mitigation.

Offsite Improvements

As previously noted, the project site is located along an active Earthquake Fault Zone, as defined by the State Geologist. Therefore, the project site would likely be subjected to strong seismic ground shaking, and structures would be exposed to seismic related hazards. All construction would have to comply with the latest UBC and CBC, as well as local policies and regulations that regulate site design and construction to minimize the potential for damage to property or adverse affects on human health and safety to occur. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from seismic ground shaking are anticipated to be less than significant with the implementation of mitigation.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Should the Golf Course Overlay be implemented, fewer buildings and people would be exposed to seismic related hazards because fewer homes would be built within the project site. All structures built within the golf course would be required to be designed in accordance with the current measures of the CBC and related applicable ordinances and policies. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from seismic ground shaking are anticipated to be less than significant with the implementation of mitigation.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Should the Equestrian Overlay be implemented, fewer buildings and people would be exposed to seismic related hazards because fewer homes would be built within the project site.

All structures built within the Equestrian Overlay District would be required to be designed in accordance with the current measures of the CBC and related applicable ordinances and policies. In addition, implementation of Mitigation Measure GEO-1, which requires the proposed project design to comply with the Fault Hazard Investigation recommendations, would reduce potential impacts associated with surface fault rupture. For the above reasons, impacts resulting from seismic ground shaking are anticipated to be less than significant with the implementation of mitigation.

Settlement & Collapse

3.5-3: *Implementation of the Hacienda at Fairview Valley Specific Plan may expose people or structures to potential substantial adverse effects from ground failure, including settlement, and collapse.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

The soils and rock identified within the project site are characterized as young to old alluvial soils. Due to the presence of dense to very dense older alluvial deposits and shallow bedrock, this site is considered to possess a low potential for significant seismically-induced settlement.

Consolidation tests performed on samples of soil indicate that the upper four (4) to eleven (11) feet of soils are subject to minimal hydroconsolidation upon saturation. Hydroconsolidation is the tendency of a soil structure to collapse upon saturation resulting in overall settlement of effected soils and any underlying foundations or improvements. A focused geotechnical investigation shall be performed prior to ground disturbing activities to evaluate the potential for both hydrocollapsible soils and seismically induced settlement. The hazards associated with settlement and collapse are considered less than significant with the implementation of Mitigation Measures GEO-2 through GEO-7.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. In addition, the project includes the development of two (2) offsite reservoirs. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

Due to the presence of dense to very dense older alluvial deposits and shallow bedrock, this site is considered to possess a low potential for significant seismically-induced settlement. Consolidation tests were performed on samples of soil, the laboratory test results indicate that the upper four (4) to eleven (11) feet of soils are subject to minimal hydroconsolidation upon

saturation. A focused geotechnical investigation shall be performed prior to ground disturbing activities to evaluate the potential for hydrocollapsible soils and seismically induced settlement. The hazards associated with settlement and collapse is considered less than significant with the implementation of Mitigation Measures GEO-2 through GEO-7.

Overlay Districts

Golf Course Overlay

As stated above, the upper four (4) to eleven (11) feet of soils are subject to minimal hydro-consolidation upon saturation. Should the Golf Course Overlay be implemented, mitigation measures would be necessary to reduce the level of impacts. A focused geotechnical investigation shall be performed prior to ground disturbing activities to evaluate the potential for hydrocollapsible soils and seismically induced settlement. Therefore, hazards associated with settlement and collapse is considered less than significant with the implementation of Mitigation Measures GEO-2 through GEO-7.

Equestrian Overlay

As stated above, the upper four (4) to eleven (11) feet of soils are subject to minimal hydro-consolidation upon saturation. Should the Equestrian Overlay be implemented, mitigation measures would be necessary to reduce the level of impacts. A focused geotechnical investigation shall be performed prior to ground disturbing activities to evaluate the potential for hydro-collapsible soils and seismically induced settlement. In addition, hazards associated with settlement and collapse are considered less than significant with the implementation of the following additional Mitigation Measures (GEO-2 through GEO-7):

GEO-2: **All structures will be supported on proper foundations (as determined by a geotechnical engineer), bearing either entirely in bedrock or entirely on newly placed engineered fill. To provide uniform support beneath foundations and mitigate the variable surficial soils and/or collapsible soils, a minimum of the upper four (4) to eleven (11) feet of existing soils will be excavated, well blended, and properly compacted as an engineered fill. Where building pads transition from alluvium to bedrock, bedrock will be over-excavated so that all foundations are underlain by a minimum of three (3) feet of engineered fill. Where removal and recompaction is conducted, the excavation will extend laterally a minimum distance of five (5) feet beyond the building footprint area or for a distance equal to the depth of fill below the foundation, whichever is greater.**

GEO-3: **Prior to issuance of grading permits, a Design Level Geotechnical Analysis of the project site shall be performed. This analysis will provide additional analysis and refine the following preliminary recommendations:**

A. Foundations for small outlying structures, such as property line walls or trash enclosures, which will not be tied-in to the proposed structures, will be supported on foundations (deemed appropriate by a geotechnical engineer) bearing in properly compacted fill, competent native soils, or bedrock. Proper drainage must be maintained adjacent to foundations to minimize settlements in the soils and any foundations supported therein.

B. Where engineered fill is to be placed, grading will begin with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as wood, tree stumps, and thick roots shall be exported from the site and shall not be mixed with the fill soils. Asphalt and concrete will not be mixed with the fill soils without approval by the Geotechnical Engineer. All existing underground improvements planned for removal will be completely excavated and the resulting depressions properly backfilled.

C. All excavated site soils will be thoroughly blended and moisture conditioned prior to placement and compaction. All fill and backfill soils will be placed in horizontal loose layers approximately six (6) to eight (8) inches thick, moisture conditioned to at or slightly above optimum moisture content, and compacted to at least 90% relative compaction, as determined by ASTM Test Method D 1557-02. Where the total depth of fill exceeds 10 vertical feet, all fill below a depth of ten (10) feet should be compacted to at least 95% relative compaction.

D. All imported fill shall be observed, tested, and approved by a qualified geologist prior to use in the building pad areas. Rocks larger than six (6) inches in diameter will not be used within the upper five (5) feet of the engineered fill pad, and rock larger then 12 inches will not be used in any engineered fill. Minimum Resistivity, pH, Chloride and Water-Soluble Sulfate testing will be required for import soils designated for use in the building footprint areas. Import soils, if used in the building area, must be placed uniformly across the building pad.

E. The surficial soil has a potential for hydro-consolidation. The remedial grading of the loose dry soil and the use of an appropriate foundation system

(deemed appropriate by a geotechnical engineer) will mitigate the potential for hydro-consolidation.

These recommendations shall be verified, refined, and approved by the County Geologist prior to approval of grading plans and issuance of grading permits for the project.

Liquefaction and Lateral Spreading

3.5-4: *Implementation of the Hacienda at Fairview Valley Specific Plan would be located on a geological unit or soil that is unstable, or that would become unstable as a result of the Hacienda at Valley Specific Plan, and potentially result in liquefaction.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The probability of liquefaction near the surface of the site is low when evaluated against existing site conditions, including topography, soil types, and the presence of water. Liquefaction often occurs in earthquake-prone areas underlain by alluvium where the groundwater is shallower than 50 feet. The Hacienda at Fairview Valley site is located along an active fault and contains alluvial soil; however, groundwater is located deeper than 100 feet. The potential for liquefaction is considered very low due to the dense nature of the older alluvium and the lack of groundwater within 50 feet of the ground surface. Impacts associated with liquefaction and lateral spreading are considered to be less than significant.

Offsite Improvements

As stated previously, the potential for liquefaction is considered very low due to the dense nature of the older alluvium and the lack of groundwater within 50 feet of the ground surface. Impacts associated with liquefaction and lateral spreading are considered to be less than significant.

Overlay Districts

Golf Course Overlay

The project site has very low potential for liquefaction and lateral spreading. Therefore, should the Golf Course Overlay be implemented, no significant impacts would occur.

Equestrian Overlay

As stated previously, the potential for liquefaction is considered very low due to the dense nature of the older alluvium and the lack of groundwater within 50 feet of the ground surface. Should the Equestrian Overlay be implemented, no significant impacts would occur.

Soil Erosion

3.5-5: *Implementation of the Hacienda at Fairview Valley Specific Plan may result in substantial wind or water soil erosion or the loss of topsoil, either on- or off-site*. **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

The project site is located in an area that is generally subject to erosion, runoff, and sedimentation, due to topography and geological conditions. Erosion is generally limited to the vicinity of the existing smaller active drainages originating from the surrounding mountains. There is a potential for erosion to occur during the grading process during periods of heavy rainfall. The potential for erosion is influenced by climate, topography, soils, and vegetation. Grading plans will be prepared to accepted regional standards. The impacts associated with soil erosion are considered less than significant with implementation of Mitigation Measures GEO-8 and GEO-9.

Offsite Improvements

The project site is located in an area that is generally subject to erosion, runoff, and sedimentation, due to topography and geological conditions. There is a potential for erosion to occur during the grading process during periods of heavy rainfall. The potential for erosion is influenced by climate, topography, soils, and vegetation. Grading plans will be prepared to accepted regional standards. The impacts associated with soil erosion are considered less than significant with implementation of Mitigation Measures GEO-8 and GEO-9.

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, there is a potential for erosion to occur during the grading process during periods of heavy rainfall. Grading plans would be prepared to accepted regional standards. The impacts associated with soil erosion are considered less than significant with implementation of Mitigation Measures GEO-8 and GEO-9.

Equestrian Overlay

Should the Equestrian Overlay be implemented, there is a potential for erosion to occur during the grading process during periods of heavy rainfall. Grading plans would be prepared to accepted regional standards. The impacts associated with soil erosion are considered less than significant with implementation of Mitigation Measures GEO-8 and GEO-9.

GEO-4: **All manufactured slopes shall be planted, drained and maintained to reduce erosion. Due to the very granular nature of the majority of the site soils, consideration shall be given to landscaping to reduce the potential for surficial erosion per landscape standards of County Ordinance 83.10.070 and 83.10.080.**

GEO-5: **Drainage control structures will be installed to intercept water flow emanating from the canyon drainages and directed to proper drain improvements.**

Expansive Soils

3.5-6: *Implementation of the Hacienda at Fairview Valley Specific Plan may pose a risk to people and structures due to the presence of expansive soils*. **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

Based on the types of structures proposed for this development, the majority of the structures would likely be founded on a conventional shallow foundation system with slabs-on-grade, post-tensioned foundation systems, or mat foundation systems supported in either compacted fill or formational materials. The majority of the on-site materials generally possess a "very low" to "low" expansion potential, as defined by the UBC, and exhibit moderate shear strength characteristics. The very low-to-low expansive on-site soils are considered suitable for use as fill, capping of lots and construction of fill slopes. Therefore, impacts are considered less than significant.

Offsite Improvements

The majority of the soil is considered to range between "non-expansive" and "expansive" as defined by the 2007 CBC. This material possesses a "very low" to "low" expansion potential, as defined by the UBC, and exhibits moderate shear strength characteristics. The very low to low expansive off-site soils are considered suitable for use as fill, capping of lots and construction of fill slopes. Therefore, impacts are considered less than significant.

Overlay Districts

Golf Course Overlay

The majority of the soil possesses a "very low" to "low" expansion potential, as defined by the UBC, and exhibits moderate shear strength characteristics, including the area where the Golf Course Overlay would be constructed. The very low-to-low expansive on-site soils are considered suitable for use as fill, capping of lots and construction of fill slopes. Therefore, impacts are considered less than significant.

Equestrian Overlay

As stated above, the majority of the soil possesses a "very low" to "low" expansion potential, as defined by the UBC, and exhibits moderate shear strength characteristics, including the area where the Equestrian Overlay would be constructed. The very low to low expansive on-site soils are considered suitable for us as fill, capping of lots and construction of fill slopes. Therefore, impacts are considered less than significant.

3.5.4 ANALYSIS OF CUMULATIVE IMPACTS

Implementation of the Specific Plan would expose future residents and structures to geologic and seismically related hazards within the project area; however, the proposed project, as well as future development projects, would reduce these hazards through conformance with established regulations and project design features, including adherence to the UBC, the CBC, and requirements of the County of San Bernardino. Conformance with these standards, as well as conformance with the mitigation measures, would reduce the project's contribution to cumulative geological and soil impacts to less than significant.

HAZARDS AND HAZARDOUS MATERIALS

3.6 HAZARDS AND HAZARDOUS MATERIALS

The purpose of this section is to address hazardous materials that may be encountered as a result of the proposed project, and issues related to wildland fire hazards, airport safety, and emergency preparedness within the project site. Mitigation measures are recommended to avoid or minimize impacts. Information in this section is based on the *Phase I Initial Site Assessment, Fairview Creek, L.P.,* prepared by Geocon on July 14, 2007 and revised December 9, 2008; the *Phase I Initial Site Assessment, Granite Valley, L.P.,* prepared by Geocon on July 14, 2007 and revised December 9, 2008; the *Phase I Environmental Site Assessment Report Review, Fairview Creek, L.P. Site,* prepared by RBF Consulting on September 30, 2008; and the *Phase I Environmental Site Assessment Report Review, Granite Valley, L.P. Site,* prepared by RBF Consulting on September 30, 2008, and the *Response to RBF Comments, Phase I Environmental Site Assessments, Granite Valley, L.P.,* and *Fairview Creek, L.P.,* prepared by Geocon on December 10, 2008.

3.6.1 ENVIRONMENTAL SETTING

Site Description and Land Uses

The project site consists of sixteen (16) parcels over two (2) areas located east of the Town of Apple Valley in an unincorporated portion of San Bernardino County, California (as shown on Exhibit 3.6-1, *Project Study Areas*). The Fairview Creek area as mapped in the Phase I Environmental Site Assessment, located in the northwestern portion of the proposed project site, is approximately 1,075 acres in area. The site consists of vacant land with unpaved roads throughout, and intermittent streams. The site consists of two (2) structures in the southeastern portion of the site. The Granite Valley area as mapped in the Phase I Environmental Site Assessment, located in the southeastern portion of the project site, consists of two (2) noncontinguous areas, totaling approximately 480 acres in area. The site consists of vacant land with unpaved roads and drainage courses throughout. There are 16 County of San Bernardino Assessor's Parcel Numbers (APNs) associated with the project.

The project site is surrounded by the following land uses:

North: To the north, the project site is bordered by ranch style single-family residences, open space, and Fairview Mountain.

South: The project site is bordered by ranch style single-family residences, open space, and the Granite Mountains to the south.

East: The Granite Mountains, ranch style single-family residences, and Lucerne Valley are located east of the project site.

West: To the west, the project site is bordered by ranch style single-family residences, open space, and the Town of Apple Valley.

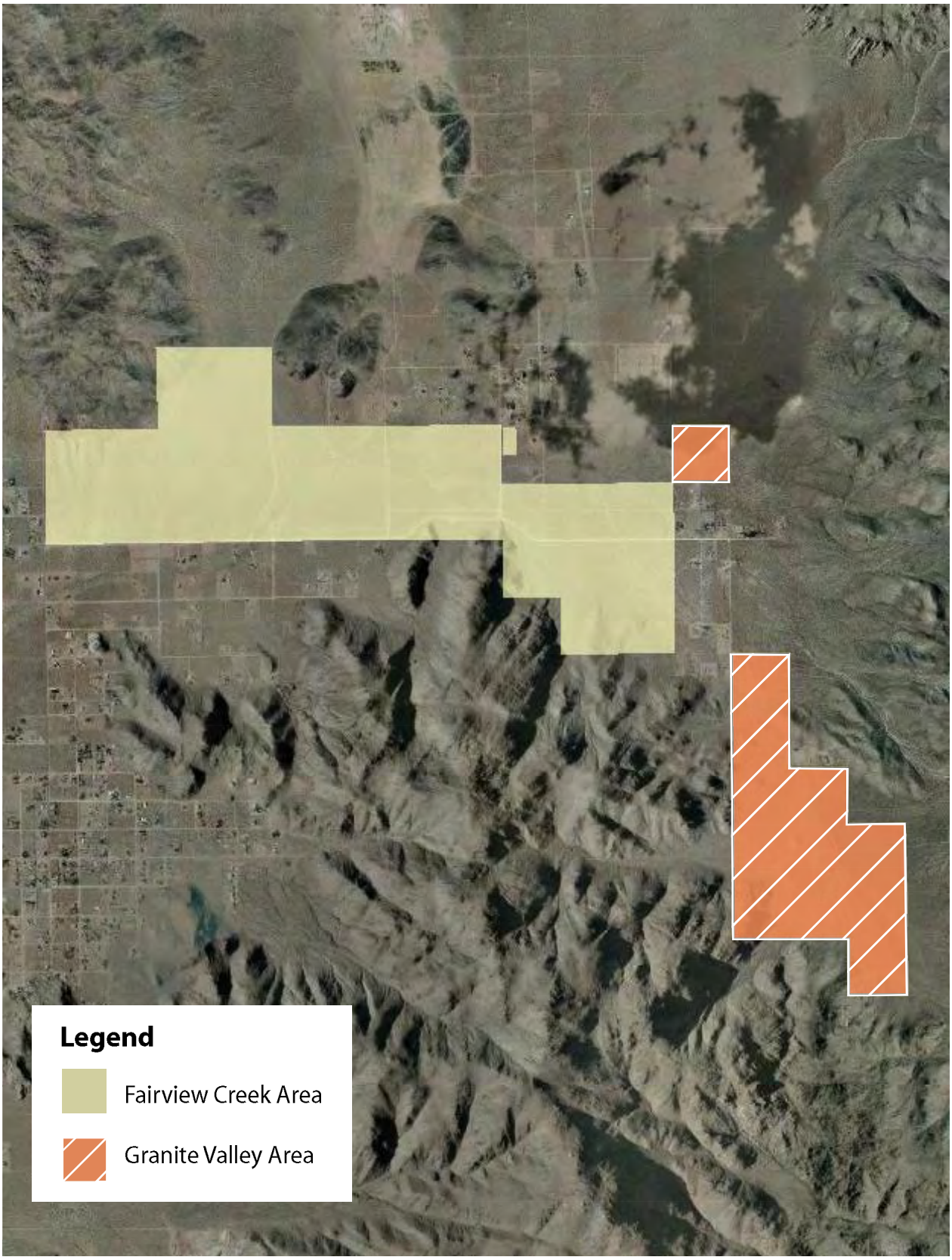
Hazardous Materials and Hazardous Waste

Hazardous materials are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into four (4) categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent. A hazardous waste is any hazardous material that is discarded, abandoned, disposed, or is to be recycled. The same criteria that render a material hazardous also make a waste hazardous. Both hazardous materials and hazardous waste will be grouped under the term "hazardous materials" in the following discussion.

Historical Site Usage

Historical use information is based upon review of available historical maps and documents, available public information, interviews, and a review of a series of historical aerial photographs dating from 1952 to 2005.

According to historical topographic maps, the project site appears to have consisted of primarily vacant land with sporadic development surrounding the site. Table 3.6-2, *Historic Topographic Map Review*, summarizes the notable attributes of the historical topographic maps and aerial photographs.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

PROJECT STUDY AREA

Exhibit 3.6-1

This page was intentionally left blank

Table 3.6-1
Historic Topographic Map Review

Year	Site Land Use	Surrounding Land Uses
	Fairview Creek Site	
1952	Undeveloped land. Numerous vehicle trails and drainage courses traverse the site.	Undeveloped land and numerous unpaved roads on all sides of the site. A lake is visible to the north.
1953	One (1) structure and an apparent fenced yard on the west-central portion, and one (1) structure may be present on the east-central portion. The development is located north of an unpaved road in the location of present-day Cahuilla Road. Other observations similar to the 1952 photograph	Sparse residential development is visible in the vicinity.
1957	Two (2) adjacent structures are shown on the west-central portion; remaining portions appear to be vacant. An "intermittent stream" is shown on the eastern and central portions of the site. Unpaved roads are shown throughout the site.	Sparse development is shown on all sides of the site. Red Top Mine and a dry lake bed are shown to the north.
1968	No indication of development is apparent on the east-central portion of the site. Other observations similar to the 1953 photograph.	Structures are visible to the east and south. Other observations are similar to the 1953 photograph.
1970	A "dry well" is shown in the vicinity of the structures shown on the 1957 map. No structures are shown. Other observations are similar to the 1957 photograph.	Similar to the 1957 photograph.
1973	No development is visible on the west-central portion of the site. Other observations are similar to the 1968 photograph.	Structures are visible to the south. Other observations are similar to the 1968 photograph.
1990	Similar to the 1973 photograph.	Increased development is visible to the south. Structures are visible to the north. Other observations are similar to the 1973 photograph.
1993	Similar to the 1970 photograph	Similar to the 1970 photograph.
1994	Similar to the 1973 photograph	Increased development to the east. Other observations similar to the 1990 photograph.
2002	Similar to the 1994 photograph.	Similar to the 1994 photograph.
2004	Similar to the 2002 photograph.	Similar to the 2002 photograph.

Year	Site Land Use	Surrounding Land Uses
	Granite Valley Site	
1953	The site appears to be vacant land. Numerous vehicle trails are visible throughout the site. An area of cleared land is visible in the northern parcel.	Vacant land is visible on all sides of the site.
1957	The site shows vacant land. Numerous vehicle trails throughout the site.	Structures are shown south of the northern parcel. Structures are shown northwest of the southern parcels.
1968	Similar to the 1953 photographs	Residential development is visible south and northwest of the northern parcel and northwest of the southern parcels. Other observations are similar to the 1953 photograph.
1970	Similar to the 1957 map.	A dry lake is shown to the northwest of the northern parcel. Other observations are similar to the 1957 map.
1972	Similar to the 1968 photograph	Similar to the 1968 photograph
1990	Similar to the 1968 photographs	Increased development is visible to the northwest of the northern parcel. A structure is shown east of the southern parcels. Other observations are similar to the 1968 photographs.
1993	Similar to the 1970 map.	"Landing strips" are shown to the northwest of the northern parcel. Other observations are similar to the 1970 map.
2005	Similar to the 2002 photographs	Structures are visible west of the northern parcel. Other observations are similar to the 1993 photographs.

Source: Phase I Environmental Site Assessment, Geocon, July 14, 2008, revised December 9, 2008.

Records Search

The Fairview Creek site is bounded by sparse residential and ranch development on all sides, and is located on relatively flat terrain with a slight downward slope to the southwest, with the exception of the northwestern and southeastern portions of the site, where the Fairview and Granite Mountains are located, respectively. Unpaved roads, vehicle trains, and dry drainage channels are present across the site, with additional indications of previous development including structure foundations, water trough and cistern located northwest of Cahuilla Road and Apache Trail, and a pile of bricks in the eastern portion of the site north of Cahuilla Road. Another water trough was observed in the southeastern portion of the site, as well as a water well along a vehicle trail in the west-central portion of the site.

The Granite Valley site consists of two (2) noncontinguous parcels, the northern and southern parcels. The northern parcels consist of vacant, undeveloped land, with native vegetation and random scattered debris on the western edge of the site along an unpaved road. The Granite Valley site was not listed on any of the databases searched during the records search. One (1) property was listed within a 1-mile radius of the site on two (2) databases, which consisted of an

illegal drug lab and/or equipment or materials storage. However, no spills or releases were reported; thus, based on the distance and direction of this property to the site and on the information from the database report, this facility is not considered to be a recognized environmental condition. Additionally, records searches with the Town of Apple Valley, the County of San Bernardino and the State of California, did not result in any records for the site APNs.

Site Reconnaissance

The site inspection of the Fairview Creek site and adjacent properties occurred on July 3, 2008, and was performed by Geocon. Indications of previous development was observed during the inspection, including structure foundations northwest of Cahuilla Road and Apache Trail, an apparent water trough and cistern near the foundation, a pile of bricks in the eastern portion of the site north of Cahuilla Road, another water trough in the southeastern portion of the site, and an apparent water well (with locked well casing) along a vehicle trail in the west-central portion of the site.

Telephone-related utility access equipment was observed on the Fairview Creek site along Soledad Drive, as well as overhead utility lines, including liquid-filled electrical transformers on the utility poles, along the southern edge of the site, and crossing the site from north to south along Soledad Drive and east to west on the eastern portion of the site north of Cahuilla Road.

The Fairview Creek site also contains numerous areas of debris throughout the site, primarily consisting of non-hazardous plastic, paper, and metallic waste including appliances, furniture, and mattresses, as well as waste tires and numerous piles of roofing debris. The site also contains abandoned trailers, and dilapidated structures. No evidence of hazardous materials or indications of staining or odors were noted relative to the debris observed onsite. The offsite inspection did not result in observation of any recognized environmental conditions.

The site inspection of the Granite Valley site and adjacent properties occurred on July 2, 2008, and was performed by Geocon. The inspection resulted in observation of an empty plastic 55-gallon drum and numerous empty shotgun shells and clay targets in the southwestern portion, and a pile of roofing debris in the western portion of the site. Random scattered debris was observed in the northwestern portion along an unpaved road. No staining or odors were noted relative to the debris, drum or roofing materials. There were no overhead electrical transmission lines, support towers, oil-containing electrical equipment, or other equipment suspected of containing polychlorinated biphenyls observed on or adjacent to the site. Additionally, since there were no current or former structures observed on the site during the inspection, an asbestos-containing building material or lead-containing paint survey were not conducted. The offsite inspection did not result in observation of any recognized environmental conditions.

Emergency Planning

Pursuant to California law, San Bernardino County implements a Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) (2005) to reduce risks from natural and other hazards, and to guide decision-makers as they commit resources to reducing the effects of natural and other hazards. The LHMP analyzes the risks for an expansive set of hazards, including wildland fire, flooding, earthquakes, extreme weather, landslides, hazardous materials incidences, toxic pollution, among others, and outlines the plans and programs to mitigate potential impacts. The intent of the plan is to designate key roles and tasks in order that the management of emergency operations would be more efficient. The LHMP establishes the various roles in times of crisis of government agencies and promotes disaster prevention programs by way of planning, zoning and mitigation.

Airport Hazards

A small portion of the project site (southeastern-most portion) is located in Airport Safety Review Zone 4. Airport Safety Review Zone Four (4) pertains to Low Altitude Corridors (generally associated with military flight corridors).

The project site is located approximately ½ to 1 mile from a small single private residential airstrip called Holiday Ranch. The airstrip is located north of the project site, north of Jackson Road and east of Oldenburg Road. The airstrip is not paved and is infrequently used. Permission must be granted by the owner of the airstrip prior to landing. Currently, this facility is not governed by an existing airport land use plan.

3.6.2 REGULATORY FRAMEWORK

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

Discovery of environmental health damage from disposal sites, such as the Stringfellow acid pits in Western Riverside County, California, prompted the U.S. Congress to pass the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat. The Hazard Ranking System is used to determine whether a site should be placed on the National Priorities List for cleanup activities.

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) pertains primarily to emergency management of accidental releases. It requires formation of State and local emergency planning

committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data is made available to the community at large under the "right-to-know" provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, through air, or in pipelines. It includes provisions for material classification, packaging, marking, labeling, placecarding, and shipping documentation.

Resource Conservation and Recovery Act

The RCRA Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

State

The California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in the State of California. The HWCL implements RCRA as a "cradle-to-grave" waste management system in the State of California. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds Federal requirements by mandating source reduction planning, and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by Federal law with RCRA.

California Code of Regulations

Most State and Federal regulations and requirements that apply to generators of hazardous waste are spelled out in the California Code of Regulations (CCR), Title 22, Division 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators, transporters, and treatment, storage, and disposal facilities. Because California is a fully authorized State according to RCRA, most RCRA regulations (those contained in 40 Code of Federal Regulations [CFR] 260 et seq.) have been duplicated and integrated into Title 22. However, because the Department of Toxic Substance Control (DTSC) regulates hazardous waste more stringently than the U.S. EPA, the integration of California and Federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as does 40 CFR 260. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than does the RCRA regulations in 40 CFR 260. To aid the regulated community, California compiled the hazardous materials, waste and toxics-related regulations contained in CCR, Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one (1) consolidated CCR Title 26 'Toxics.' However, the California hazardous waste regulations are still commonly referred to as Title 22.

California Public Utilities Commission - General Order No. 131-D

The California Public Utilities Commission (CPUC) regulates investor-owned telecommunications, electric, natural gas, and water utilities operating in the State of California. The CPUC must comply with the requirements of CEQA when it approves any requested utility action that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment. The CPUC oversees almost all large utility construction projects, and also considers approval of other types of utility activity that might have a significant impact on the environment. When a utility plans to construct a power line (defined as a line designed to operate between 50 and 200 kilovolts (kV)), it must comply with Section IX.B, X and XI.B of this General Order, in order to receive a Permit to Construct. Compliance with Section IX.B is not required for power lines to be relocated or constructed which have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document finds not significant unavoidable environmental impacts caused by the proposed line (Section III.B.1f).

CPUC stated in D.06-01-042 that, "At this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences." The Commission's EMF policy is one (1) of prudent avoidance, with application of low-cost/no-cost mitigation measures to reduce EMF exposure for new and upgraded utility transmission and substation projects. The Commission has adopted a benchmark of 4 percent of total project cost for low-cost EMF mitigation measures, with flexibility to allow expenditures above the 4 percent benchmark if justified by a project's unique circumstances. As a guideline,

the Commission stated that low-cost EMF mitigation measures should reduce EMF levels by at least 15 percent at the utility right-of-way.

Local

SCAG Regional Comprehensive Plan and Guide

The Growth Management chapter of the Regional Comprehensive Plan and Guide (1996) include goals and policies related to hazards and hazardous materials, which are applicable to the proposed project. The Growth Management Chapter includes the following goal: "Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards."

County of San Bernardino *General Plan* Safety Element

The Safety Element is intended to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazards. The Safety Element includes concepts and guidelines to manage and reduce the risks associated with these hazards. The following goals, policies, and programs are applicable to the proposed project:

Goal S 1: **The County will minimize the potential risks resulting from exposure of County residents to natural and man-made hazards in the following priority: loss of life or injury, damage to property, litigation, excessive maintenance and other social and economic costs.**

Policy S 1.3: Support and expand emergency preparedness and disaster response programs and establish comprehensive procedures for post-disaster planning in affected areas.

Programs: 3. Provide for the needs of dependent and immobile populations in emergency response and recovery operations through identification and prioritization of rescue needs.

4. Require disaster plans and provisions in the design, location, and management of all public facilities.

5. Plan, design and use public facilities according to the requirements of the County Emergency Management Plan.

6. Ensure adequate access routes to and from potential devastation areas as required by the County's Emergency Management Plan.

Goal S.2: **The County will minimize the generation of hazardous waste in the County and reduce the risk posed by storage, handling, transportation, and disposal of hazardous wastes.**

Policy S 2.1: Because reducing the amount of waste generated in this County is an effective mechanism for reducing the potential impact of these wastes on the public health and safety and the environment, and because legislation encourages the reduction, to the extent feasible, of hazardous waste, this jurisdiction will encourage and promote practices that will, in order of priority: (1) reduce the use of hazardous materials and the generation of hazardous wastes at their source; (2) recycle the remaining hazardous wastes for reuse; and (3) treat those wastes that cannot be reduced at the source or recycled. Only residuals from waste recycling and treatment will be land disposed.

Policy S 2.2: Include extensive public participation in the County's application review process for siting hazardous waste facilities and coordinate among agencies and County departments to expedite the process. Apply a uniform set of criteria to the siting of these facilities for the protection of public health and safety and the environment.

Policy S 2.3: Ensure that environmental review is conducted for projects proposed on sites that have been identified as contaminated.

Programs: Require a conditional use permit and a *General Plan* Amendment from applicants for hazardous waste facilities. The applicant will meet all provisions of the specified hazardous waste facility overlay as well as other *General Plan* and Development Code provisions.

Policy S 2.4: Protect vital groundwater resources and other natural resources from contamination for present and future beneficial uses.

Policy S 2.5: Minimize the risk of exposure to hazardous substances by residential and other sensitive receptors through the application of program review and permitting procedures.

Programs: 1. The County shall provide 24-hour response to emergency incidents involving hazardous materials or wastes in order to protect the public and the environment from accidental releases and illegal activities.

2. The County shall operate collection facilities and events for residents of San Bernardino County to safely dispose of household hazardous waste.

3. The County shall provide affordable waste management alternatives to businesses that generate very small quantities of waste through the Conditionally Exempt Small Quantity Generator program.

4. The County shall inspect hazardous material handlers and hazardous waste generators to ensure full compliance with laws and regulations.

5. The County shall implement CUPA programs for the development of accident prevention and emergency plans, proper installation, monitoring, and closure of USTs, and the handling, storage, transportation, and disposal of hazardous wastes.

6. The County shall conduct investigations and take enforcement action as necessary for illegal hazardous waste disposal or other violations of Federal, State, or local hazardous materials laws and regulations.

7. The County shall manage the investigation and remediation of environmental contamination due to releases from USTs, hazardous waste containers, chemical processes, or the transportation of hazardous materials.

8. The County shall provide access to records for potential buyers of property to perform due diligence research and environmental assessment.

9. The County shall use the County's Certificate of Occupancy process to address identification of new facilities that may handle hazardous materials, including facilities subject to the California Accidental Release Prevention Program, accordance with Government Code 65850.2.

Goal S.3: **The County will protect its residents and visitors from injury and loss of life and protect property from fires.**

Policy S.3.1: Continue the Fire Department's consolidation efforts to develop an integrated approach to coordinate the County's present and future needs in fire protection services in response to fire hazards and risks and to serve as a basis for program budgeting, identification, and implementation of optimum cost-effective solutions with the goal of providing necessary Service Levels and achieve Deployment Goals. These Service Levels and Deployment Goals are as follows:

> The deployment of fire companies with appropriate levels of staffing and apparatus within the service area plays an important role in effective community fire protection and provision of a higher standard of care for life threatening health emergencies

and thereby increasing the quality of life for our citizens. Consolidation provides the most effective option for streamlining the delivery of service and simplifying budget, fiscal, operational, and asset management and creates a single countywide Fire Protection District. It also provides the longest projection of financial solvency for the County Fire Department based on a special district deliver system. A tiered response, including staffing levels, response times and performance goals seems the only reasonable conclusion for the near future as the Department works towards establishing service planning goals for all areas of the County. Matching service levels with the various characteristics of a geographic area will provide several things including: base line service, knowledge of when the area will move to the next level of service, reasonable stabilization of current service, allow for community identity and choice, allow for the projection of future service levels, and lay the basic foundation for strategic planning and future growth of the Department.

Programs: 1. Fund, adopt and implement a countywide Fire Protection Master Plan (FPMP).

2. The FPMP will use National Fire Protection Association Standards 1710 and 1720 as goals for creation of the Standards of Cover.

3. The FPMP will be created in coordination with the Departments consolidation efforts to ensure consistency with community needs and input.

4. Develop, adopt and implement a recommended schedule of fees to finance the fire protection infrastructure that is tied to land use categories and specific community needs as prescribed by the countywide Fire Protection Master Plan.

5. Develop, adopt and implement a recommended schedule of fees for Fire Department's Fire Protection Planning Section within the Office of the Fire Marshall that is adequate to meet the staffing and operation needs of the program.

6. Continue to coordinate fire protection services countywide, with all city fire departments, self-governed special districts providing fire protection services, the California Department of Forestry and Fire Protection, the United States Forest Service, Bureau of Land Management.

9. Implement monitoring of fire-prevention measures (such as fuels reduction) to prevent damage to biological habitats in high fire hazard areas such as chaparral areas.

10. The following Peakload Water Supply System guidelines shall be met for all new development or be adequately served by water supplies for domestic use and community fire protection in accordance with standards as determined by the County Fire Department.

a. Limit or prohibit development or activities in areas lacking water and fire fighting facilities.

b. Approve high intensity uses such as theaters, motels, restaurants and schools, and uses requiring the handling or storage of large amounts of highly flammable materials only in areas with year round fire protection and adequate water systems with hydrants.

Policy S 3.2: The County will endeavor to prevent wildfires and continue to provide public safety from wildfire hazards.

Policy S 3.3: Minimize the fire hazard posed by expanding development in wildland/urban intermix areas.

Programs: 1. Apply the regulations of the Fire Safety Overlay Ordinance, as found in the Development Code; to all County areas subject to wildland/urban intermix fire hazards including all mountain and foothill areas.

Policy S 3.4: Identify and map all such areas on a continuous basis, amending the Fire Hazard Overlay maps where needed.

Policy S 3.5: Evaluate the Fire Hazard Overlay Ordinance regularly and revise when necessary to reflect the most current fire-safe building and development techniques and standards (e.g., provision of life safety fire sprinklers in new construction of dwelling units).

Policy S 3.6: Continue to work with Fire Safe Councils (FSC) and their Chapters to:

a. Develop educational programs to create awareness and disseminate information among citizens about fire safety and fire safety programs.

b. Continue efforts supporting FSC programs that physically reduce or eliminate fuels such as Chipper Days and community fuels reduction programs.

c. Continue to support FSC efforts in creating Community

Wildfire Protection Plans (CWPPs).

d. Continue to encourage participants in the Mountain Area

Safety Taskforce (MAST) to support FSC efforts in community education and behavior modification.

Policy S 3.7: Continue to support existing County Fire Department Public Education Programs.

Programs: 1. Continue to increase awareness through Safety Fairs, Open Houses, Places of Worship, Community Centers and School Visits and Curriculum Presentations.

2. Continue to disseminate informational brochures on topics such as Residential Fire Sprinkler Maintenance, commercial design and construction standards, development and construction requirements in the Fire Hazard Overlay.

3. Target high-risk groups such as children and senior citizens with specific programs such as Risk Watch, Learn not to Burn, Stop Drop and Roll and 911 programs.

4. Continue public education programs in topics such as Home and Children Safety including: Pool Safety, Drowning Prevention, Smoke Detectors, Car Seat Safety, Home Emergency Plans and Fire Sprinkler Systems.

Goal S.4: The County will minimize damage due to wind and water erosion where possible.

Policy S 4.3 Tailor grading, land clearance, and grazing to prevent unnatural erosion in erosion susceptible areas.

Goal S 5: The County will provide adequate flood protection to minimize hazards and structural damage.

Policy S 5.1: Participate in the National Flood Insurance Program (NFIP), which provides flood insurance within designated floodplains.

Programs: 1. Designate Floodway and Floodplain areas, as identified by the Federal Emergency Management Agency (FEMA) on flood insurance rate maps and flood boundary maps, as Floodway (FW) on the Land Use Maps and Floodplain Overlays on the Hazards Overlay Maps.

2. Designated floodway areas will be preserved for non-structural uses through restrictions of the FW Land Use Zoning District.

3. All new development, including filling, grading, and construction, proposed within designated floodplains, will require submission of a written assessment prepared by a qualified hydrologist or engineer, in accordance with the latest "San Bernardino County Hydrology Manual" and the various detention basin policies [see Existing Policy FL-11], to determine whether the development will significantly increase flood hazard and to show that all new structures will be adequately protected. Development will be conditioned on receiving approval of this assessment by the San Bernardino County Surveyor Division of the Public Works Department.

4. All new construction in a Floodplain Overlay area will be required to be flood-proofed, located, and designed to allow unrestricted flow of floodwaters.

5. The Land Use Compatibility Chart for 100-Year Flood Plains

(Refer to Table S-1 in the *General Plan*) will apply to County reviews of all discretionary and ministerial actions in County-designated floodplains.

6. Lands within floodplain areas may be developed with non-critical and non-essential uses if mitigation measures are incorporated to ensure that the proposed development will not be hazardous, increase flood depths or velocities downstream, or degrade water quality, especially uses such as parks, trails, and open space.

7. Provide known flood hazard information with every discretionary or ministerial application.

8. When no mapped data exist, existing topographical, watershed, and drainage course data will be evaluated for a determination of potential flood hazard for every discretionary and ministerial action.

Policy S 5.2: Update data and maps with newly identified flood hazard areas in the County, as new information becomes available.

Programs: 1. As new overflow studies and mapping are completed and approved by either the County's Land Development Engineer or the San Bernardino County Flood Control District, they will supplement the FEMA mapping and will be incorporated into Flood Hazard Overlay mapping.

2. Initiate and finance programs for the continuous evaluation and designation of floodway, floodplain, and drainage areas.

3. Continued evaluation of all County areas through application of development conditions in the preconstruction flood hazard inspection process.

4. Site studies will be conducted where development is proposed in areas tentatively identified as subject to flooding.

5. Construction will comply with study recommendations as described in site study required under FL-2f.

Policy S 5.3: Protect residents and properties from the risk of dam failure as a result of earthquake or other causes.

Programs: 1. Require an engineering geology report for all new or proposed public and private reservoirs. This report will be completed by a registered engineering geologist, conform to County standards, and be approved by the County Geologist.

2. Include reservoirs as Dam Inundation areas on the Hazard Overlay Maps as required by the State of California.

3. Prohibit new dams and reservoirs in areas designated as Geologic Hazards on the Hazard Overlay Maps.

4. Prohibit critical, essential and high-risk land uses from Dam Inundation areas as shown on the Hazard Overlay Maps and Figure II-4.

Policy S 5.4: Protect existing development in floodways and floodplains.

Programs: 1. Continue to identify natural drainage courses and designate San

Bernardino County Drainage Easements as a means to preserve natural drainage flow paths and/or constructed drainage facilities.

2. Require implementation of flood protection measures when additions valued at 25 percent or greater of the original structure are proposed.

3. Establish funding mechanisms when flood control facilities are warranted.

Policy S 5.5: Require specific hydrology and hydraulic studies for development proposals to avoid spot flooding from small streams or unmapped areas adjacent to mapped flood areas.

Programs: 1. Identify existing drainage conditions, upstream and downstream drainage conditions, and measures that must be taken within the development project or downstream from the project to preclude impacts on the proposed development or increased impacts to downstream development. These studies will be submitted to and reviewed by the Land Use Services Department and the Department of Public Works.

2. Fully account for all planned flood control facilities within or adjacent to the project site. Where sections of flood control facilities cannot be constructed, provision should be made for their ultimate construction—that is, rights-of-way reserved and construction funds secured. Additional, interim facilities must be provided that will be able to handle the additional run-off from the proposed development until the planned flood control facilities are constructed.

Policy S 5.6: Prevent flood hazard resulting from drainage from adjacent development.

Programs: 1. The run-off provisions of the Erosion and Sediment Control Ordinance will apply countywide.

2. Surface run-off from new development will be controlled by onsite measures including but not limited to structural controls. Restrictions regarding changes in topography, removal of vegetation, creation of impervious surfaces and periods of construction, such that the need for off-site flood and drainage control improvements is minimized and that run-off from the development will not result in downstream flood hazards.

Policy S 5.7 Initiate public education programs that will play a vital role in minimizing flood hazard.

Programs: 1. Establish a public information system through the Office of

Emergency Services outlining emergency operations and measures to reduce personal losses in the event of a flood disaster.

2. Develop a flood warning system where possible through the Flood Control District.

3. Develop dam failure and flood plain inundation evacuation plans through the Office of Emergency Services and the Department of Public Works where possible.

Policy S 5.8: Design flood control and drainage measures as part of an overall community improvement program that advances the goals of recreation, resource conservation, preservation of natural riparian vegetation and habitat, and the preservation of the scenic values of the County's streams and creeks.

Programs: 1. Consider ecological significance and aesthetic quality of natural drainage ways in the design of all drainage projects.

2. Require that storm waters be used for groundwater recharge when possible and that existing groundwater recharge areas be considered for retention as unbuilt open areas.

3. Preserve all existing "unlined" and "natural" drainage channels and water courses, such as creeks and river beds, as resource management areas or linear parks and recreation trails, whenever technically and economically feasible. Linear parks and/or recreation trails will be part of a master-planned system.

Policy S 5.9: Coordinate with local, regional, State, Federal, and other private agencies to provide adequate flood protection to County residents.

Programs: 1. Continue the development of intergovernmental coordination with cities, adjacent counties, the Army Corps of Engineers, and other agencies that have an interest in flood control projects that cross jurisdictional boundaries.

2. Coordinate land use and flood control planning through continued improvement of staff contacts between the Land Use Services Department, Flood Control District, Special Districts Department, and cities within the County, and through annual review of the Capital Improvements Program.

Policy S 5.10: Continue to develop local area drainage plans and establish funding mechanisms to provide the backbone drainage system for watershed areas.

Goal S 6. The County will protect residents from natural and manmade hazards.

Policy S 6.1: Require development on hillsides to be sited in such a manner that minimizes the extent of topographic alteration required to minimize erosion, to maintain slope stability, and to reduce the potential for offsite sediment transport.

Policy S 6.2: Utilize the Hazard and Resources Overlay Maps to identify areas suitable or required for retention as open space. Resources and issues identified on the Overlays which indicate open space as an appropriate use may include: flood, fire, geologic, aviation, noise, cultural, prime soils, biological, scenic resources, minerals, agricultural preserves, utility corridors, water supply, and water recharge.

Policy S 6.3: Because public health and safety can be protected through the use of open space, the County may maintain open space where flood, fire, geologic, seismic hazards, noise, or other conditions endanger public health and safety.

Policy S 6.5: Where possible, consistent with safety and operational considerations, encourage the use of active and inactive utility easement corridors (especially railway corridors, which have gentle grades that make them suitable for whole-access trails) as public open space areas and trail alignments.

Goal S 7: The County will minimize exposure to hazards and structural damage from geologic and seismic conditions.

Policy S 7.1: Strive to mitigate the risks from geologic hazards through a combination of engineering, construction, land use, and development standards.

Programs: 1. Consider the formation of Geologic Hazard Abatement Districts as authorized by Public Resources Code Section 26500 et seq., where existing or proposed development is threatened by such hazards and prevention, mitigation, abatement or control of a geologic hazard is deemed feasible.

2. Require sites to be developed and all structures designed in accordance with recommendations contained in any required geotechnical or geologic reports, through conditioning, construction plans, and field inspections.

3. Require that all recommended mitigation measures be clearly indicated on all grading and construction plans.

4. Require all facilities to meet appropriate geologic hazard specifications as determined by the County Geologist for discretionary and ministerial authorizations.

5. Because of the potential for displacement along faults not classified as active, the County will reserve the right to require site-specific geotechnical analysis and mitigation for development located contiguous to potentially active faults, if deemed necessary by the County Geologist.

Policy S 7.2: Minimize the risk of potential seismic disaster in areas where inadequate structures exist.

Programs: 1. Have a structural hazards identification and abatement program through the Division of Building and Safety with priority given to the identification and abatement of hazards in critical, essential, and high-occupancy land uses; in structures located within areas of severe geologic hazard; and in structures built prior to enactment of applicable local or State earthquake design standards.

2. Support regional or Statewide programs providing funding or technical assistance to local governments to allow accurate identification of existing structural hazards in private development and providing assistance to public and private sectors to facilitate and to minimize the social and economic costs of abatement.

Policy S 7.3 Coordinate with local, regional, State, Federal, and other private agencies to provide adequate protection against seismic hazards to County residents.

Programs: 1. Continue to work with public utilities, school districts, railroads, the State Department of Transportation (Caltrans), and other agencies supplying critical public services to ensure that they have incorporated structural safety and other measures to be adequately protected from seismic hazards for both existing and proposed facilities.

2. Coordinate with utility companies to institute orderly programs of installing cut-off devices on utility lines, starting with the lines that appear to be most vulnerable and those that serve the most people. Adequate emergency water supplies will be established and maintained in areas dependent upon water lines that cross active fault zones.

Policy S 7.4 Designate areas identified by the Alquist-Priolo Earthquake Fault Zoning Act (Public Resource Code, Division 2, Chapter 7.5) on the Hazard Overlay Maps to protect occupants and structures from high level of risk caused by ground rupture during earthquake.

Programs: 1. Apply the definitions, provisions, and mapping of the Alquist-Priolo Earthquake Fault Zoning Act.

2. Apply the Land Use Compatibility Chart in Earthquake Fault Zones (Table S-2) when reviewing all discretionary and ministerial applications.

3. Withhold public financing from buildings within the Earthquake Fault Zone where there is a confirmed fault trace unless it can be established that there is no potential for surface fault displacement or ground rupture that would injure the public investment or fulfillment of its purpose.

4. Do not create new lots within the Earthquake Fault Zone unless an appropriate geologic investigation establishes sufficient and suitable land area for development according to existing land use designations and other applicable County ordinances. Reassess the fault investigation exemption for single family one- and two-story residential construction within the zone.

5. Plan transportation facilities (i.e. roads, freeways, rail, rapid transit) and utility systems to cross active fault traces a minimum number of times and to be designed to accommodate fault displacement without major damage that would cause long-term and unacceptable disruption of service. Utility lines will be equipped with such mechanisms as flexible units, valving, redundant lines, or auto valves to shut off flows in the event of fault rupture.

Policy S 7.5 Minimize damage cause by liquefaction, which can cause devastating structural damage and a high potential for saturation exists when the groundwater level is within the upper 50 feet of alluvial material.

Programs: 1. Require that each site located within the Liquefaction Hazard Overlay be evaluated by a licensed geologist prior to design, land disturbance or construction, for soil type, history of the water table's fluctuation, and adequacy of the structural engineering to withstand the effects of liquefaction.

2. Apply the Land Use Compatibility Chart in Liquefaction Potential Zones (Table S-3) when reviewing all discretionary and ministerial applications.

3. Evaluate potential areas of liquefaction susceptibility that are not currently identified on the Geologic Hazard Overlay. Add areas to the Geologic Hazard Overlay based on the evaluation of susceptibility

Policy S 7.6 Protect life and property from risks resulting from landslide, especially in San Bernardino and San Gabriel Mountains that have high landslide potential.

Programs: 1. Require that a stability analysis be required in Landslide Hazard areas designated “Generally Susceptible” and “Most Susceptible” on the Hazards Overlay Maps and where required by the County Geologist.

2. Require site development and construction comply with soil and geologic investigation report recommendations.

3. Apply the Land Use Compatibility Chart in Landslide Susceptibility Zones (Table S-4) when reviewing all discretionary and ministerial applications.

4. Fund and prepare a land use plan that is in conformance with the Land Use Compatibility Chart in Landslide Susceptibility Zones in Wrightwood and other designated high landslide hazard areas as they are identified.

5. Restrict avoidable alteration of the land that is likely to increase the hazard within areas of demonstrated or potential landslide hazard, including concentrations of water through drainage or septic systems, removal of vegetative cover, steepening of slopes, and undercutting the base of a slope.

6. Restrict grading to minimal amounts necessary to provide access and require grading permits to have an approved site plan that conforms to the recommendations of any required geologic investigation.

Goal S 8: **The County will minimize exposure and potential of damage posed by aviation activity.**

Policy S 8.1 Ensure the safety of airport operations and surrounding land uses.

Programs: 1. Adopt the Land Use Compatibility/Aviation chart (Table S-4) as applicable to all discretionary and ministerial applications for Safety Overlay delineated on the Hazards Overlay Maps. Safety areas are defined as follows:

a. That area defined within an adopted Airport Comprehensive Land Use Plan;

b. That area defined within an adopted Interim Airport Land Use Plan (where there is no adopted Airport Comprehensive Land Use Plan); and

c. That area defined within a low-altitude/high-speed corridor designated for military aircraft operations.

2. Continue airport safety reviews of all land uses proposed within any Airport Safety Area in the County; updating existing and initiating new comprehensive Land Use Plan studies for each public-use airport in the County. The following review standards will be included:

a. Safety areas will be designated and mapped.

b. Airport Safety reviews will be required for all discretionary projects (as defined by CEQA) proposed in the County within an Airport Safety Area, including:

- All airport creation or expansion proposals;
- Projects and land use recommendations outside designated Safety Areas when statistical analysis of accidents from an airport facility suggests this need; and
- All procedures for proposed development around heliports in the County.

c. All projects within Safety Areas 1, 2, and 3 will be referred to the affected airport facility.

d. Federal Aviation Regulations (FAR) Part 77 will be applied, including height restrictions.

e. Smoke, glare, and electronic interference will be restricted.

f. Storage of fuel and other explosive and/or flammable materials in a manner that may be hazardous to aviation operations will not be above ground in Safety Areas 1, 2, and 3.

g. Standards for development of all conditionally approved projects may be derived from any or all of the following:

- Applicable, adopted Airport Comprehensive Land Use Plans and Interim Airport Land Use Plans;
- California State Airport Land Use Planning Handbook; and
- The San Bernardino County Development Code.
- Regulations and development standards of local jurisdictions.

3. Apply the standards of the Land Use Compatibility Chart in Airport Safety Areas (Table S-5), as well as those contained in the applicable adopted Airport Comprehensive Land Use Plans, to promote consistent review of proposals in the land use planning process.

4. Any requirements resulting from the airport safety review will be incorporated into the project design and/or conditions of approval.

5. All discretionary projects within Safety Areas 1, 2 and 4 will be reviewed by the appropriate military facility (There is no Safety Area 3 designated around military airport facilities).

Goal S 9. **The County's emergency evacuation routes will quickly and efficiently evacuate all residents in the event of wildland fires and other natural disasters, and will ensure adequate access of emergency vehicles to all communities.**

Policy S 9.1 Maintain projected emergency access needs in the periodic review of the County's Hazard Mitigation Plan.

Policy S 9.2 Ensure that future developments have no less than two (2) points of access for emergency evacuation and for emergency vehicles, in the event of wildland fires and other natural disasters.

Programs: 1. Require compliance with the provisions of the access standards of the Fire Safety Overlay, the Subdivision Design and Improvement Standards of the County Development Code and, where applicable, Planned Unit and Planned Residential Development standards.

2. Access for development projects will be considered in conjunction with the location of active faults through the development review process. Access across faults will be discouraged where point(s) of access can feasibly be located outside of fault areas.

3. Through the provisions of the Fire Safety Overlay and the development review process, require projects to provide immediate vehicular access to the perimeter of structural development within projects adjacent and exposed to wildlands.

4. In areas with predominant natural slopes greater than 30 percent and in canyon mouths and ridge saddles. Access roads will be the shortest length feasible. Grading for roads will be the minimum necessary to provide adequate access.

Goal D/S 1. **The County's emergency evacuation routes will quickly and efficiently evacuate all residents in the event of wildland fires and other natural disasters, and will ensure adequate access of emergency vehicles to all communities.**

Policy D/S 1.1 Designate the following roads and highways as evacuation routes in the in the Desert Region: Interstates 15 and 40, U.S. 95 and 395 and State Highways 18, 58, 62, 127, 138, 178 and 247.

San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan

The San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan (2005) encourages all local governments to work together to reduce or prevent injury and damage from natural hazards. The mitigation plan includes emergency evacuation plans for dam failure, inundation, fire and hazardous materials releases. Evacuation involves relocating occupants from a hazardous or potentially hazardous area to ensure public safety. Disaster routes function as primary thoroughfares for movement of emergency response traffic and access to critical facilities.

3.6.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State *CEQA Guidelines*. The project would create a significant hazards and hazardous materials impact if it would result in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- 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 create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two (2) miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project site;
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the area;

Environmental Impacts and Mitigation Measures

Hazardous Materials

3.6-1: *Implementation of the proposed project may create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements:

The routine transport, use, and disposal of hazardous materials can result in hazards to the public through the potential for accidental release. Such hazards are typically associated with certain types of land uses, such as chemical manufacturing facilities, industrial processes, waste disposal, and storage and distribution facilities. At full buildout, the proposed project would consist of single family residential homes and recreation/parks/and open space, as well as commercial uses. These land uses are not expected to use significant quantities of hazardous materials or to generate significant quantities of hazardous wastes. Although the commercial uses could involve the transport and sale of typical household cleaning supplies, it is not anticipated that hazardous materials would be transported or sold in significant quantities within the area. In addition, the Specific Plan prohibits gas stations within the proposed project site.

Potential short-term impacts from construction of the project may occur from the transportation of debris material resulting from grubbing and clearing agricultural lands and possibly the removal or demolition of structures which may contain hazardous substances such as fertilizers, pesticides, herbicides, petroleum products, asbestos, and lead that could be harmful if accidentally released during transport.

The project site has historically been used for homestead purposes. Remnants of several historic homesteads scatter the project site, including homesteads by Trendell, Amaral, Atlantic and Pacific Railroad, and Southern Pacific Railroad. Federal homestead requirements during this period included a minimum of five years of residence and cultivation. Evidence of prior activity on the project site includes dilapidated water conveyance systems including wells, windmill foundations, canals, small reservoirs, and water troughs. Abandoned trailers, dilapidated structures, and numerous areas of non-hazardous debris; empty plastic drums and

roofing debris, were observed on the site. One (1) offsite facility, identified as "Old Mine Illegal Dumpsite", is presumed to be on or near the southeastern portion of the project site. The former landfill was reported as "clean closed" in September 2000. No visual indications of the landfill were observed during the site survey. No evidence of any hazardous materials or indications of staining or odors were noted relative to the structures and debris.

Any transport of hazardous material would occur on public roads and be subject to Occupational Safety and Health Standards Guidelines (Hazardous Waste Operations and Emergency Response Standard, Title 29 Code of Federal Regulations (CFR) Part 1910.120), as well as the Department of Toxic Substances Control (DTSC). Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire Marshal Regulations; and the United States Department of Transportation Regulations. In addition, hazardous waste transporters must comply with Division 20, Chapter 6.5, Article 6 and 13 of the California Health and Safety Code and the Title 22, Division 4.5, Chapter 13, of the California Code of Regulations, which are administered by DTSC. All of these regulations are designed to minimize the danger of hazardous materials being released and causing a significant hazard to the public or the environment.

Operational transportation, storage, use, and disposal of hazardous materials and wastes must comply with all regulations, guidelines, and standards contained within the County's *General Plan* and applicable permitting procedures required by all Federal, State, and local agencies associated with hazardous materials and waste issues. In addition, Article 80 of the Uniform Fire Code (UFC) requires conformance to the proper storage and use of hazardous materials and containment of storage areas and secondary containment of chemical lines to contain spills. Conformance with these standards and the implementation of mitigation measures HAZ-1 through HAZ-4 will reduce impacts to less than significant levels.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. In addition, the project includes the development of two (2) offsite water tank/reservoir areas. These projects are not expected to use significant quantities of hazardous materials or to generate significant quantities of hazardous wastes, therefore, implementation of the proposed offsite improvements would not create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Development and maintenance of a golf

course would require agricultural activities. Agricultural activities typically include the storage and periodic application of pesticides, herbicides, and fertilizers, as well as the storage and use of toxic fuels and solvents. The infiltration of these substances may leach into local groundwater supplies, presenting an elevated risk of groundwater contamination. Proper application, as well as properly removing and disposing of onsite hazardous materials in accordance with State and Federal regulations before they are accidentally disturbed can reduce the impact associated with these hazards. Implementation of the proposed Golf Course Overlay would not create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. The Equestrian Overlay is not expected to use significant quantities of hazardous materials or to generate significant quantities of hazardous wastes, therefore, implementation of the proposed Equestrian Overlay would not create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

HAZ-1: **Abandon and/or remove all existing wells (water, dry well, etc.) in accordance with applicable laws and regulations.**

HAZ-2: **During development of the site, if suspect trash and debris, chemical odors, stained soil, tanks, or other potential environmental concerns associated with the former Old Mine Illegal Dumpsite are encountered, areas of concern will be assessed by a qualified professional and handled accordingly, as follows:.**

- **Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area;**
- **Notify the County Engineer;**
- **Secure the areas as directed by the County Engineer; and**
- **Notify the County's Hazardous waste/Materials Coordinator.**

HAZ-3: **Containers of chemical products (i.e. fuel, grease, waste oil) that may be utilized and/or stored by contractors at the project site, will be stored in tightly sealed containers to minimize the risk of spill events. Secondary containment storage methods are recommended.**

HAZ-4: **Trash and debris shall be removed from the project site and disposed in accordance with applicable laws and regulations.**

Risk of Upset

3.6-2*:* *Implementation of the proposed project may create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.* **Level of Significance: Less than Significant.**

Onsite Improvements:

The construction and operation of new developments could result in hazards to the public or the environment through the accidental upset or release of hazardous materials, related to the spilling of onsite hazardous materials or the construction of new structures on contaminated soil. The Phase I ESA for the proposed project area evaluated the potential for hazardous materials, based upon readily discernible and/or documented present and historic uses of the properties and uses adjoining the sites and generally characterized the expected nature of hazardous materials that may be present as a result of such uses.

The project site has historically been used for homestead purposes. Remnants of several historic homesteads scatter the project site, including homesteads by Trendell, Amaral, Atlantic and Pacific Railroad, and Southern Pacific Railroad. Evidence of prior activity on the project site includes dilapidated water conveyance systems including wells, windmill foundations, canals, small reservoirs, and water troughs. One (1) offsite facility, identified as "Old Mine Illegal Dumpsite", is presumed to be on or near the southeastern portion of the project site. The former landfill was reported as "clean closed" in September 2000.

The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space.

Contractors are required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of hazardous substances into the environment. Standard construction practices must be observed such that any hazardous materials released are appropriately contained and remediated as required by local, State, and Federal law. Conformance with these standards would reduce impacts to less than significant levels.

Offsite Improvements

The construction and operation of new water reservoirs and road improvements could result in hazards to the public or the environment through the accidental upset or release of hazardous materials, related to the spilling of onsite hazardous materials or the construction of new structures on contaminated soil. The Phase I ESA for the proposed project area evaluated the potential for hazardous materials, based upon readily discernible and/or documented present and historic uses of the properties and uses adjoining the sites and generally characterized the expected nature of hazardous materials that may be present as a result of such uses.

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. The project includes the development of two (2) offsite reservoirs. Contractors will be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of hazardous substances into the environment. Standard construction practices will be observed such that any hazardous materials released are appropriately contained and remediated as required by local, State, and Federal law. Conformance with these standards would reduce impacts to less than significant levels. Implementation of the proposed offsite improvements would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. The construction and operation of a new golf course could result in hazards to the public or the environment through the accidental upset or release of hazardous materials. The Phase I ESA for the proposed project area evaluated the potential for hazardous materials, based upon readily discernible and/or documented present and historic uses of the properties and uses adjoining the sites and generally characterized the expected nature of hazardous materials that may be present as a result of such uses. Implementation of the proposed Golf Course Overlay would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D.

The construction and operation of new developments could result in hazards to the public or the environment through the accidental upset or release of hazardous materials. The Phase I ESA for the proposed project area evaluated the potential for hazardous materials, based upon readily discernible and/or documented present and historic uses of the properties and uses adjoining the sites and generally characterized the expected nature of hazardous materials that may be present as a result of such uses. Implementation of the proposed Equestrian Overlay would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

School Safety

3.6-3: *Implementation of the proposed project may emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.* **Level of Significance: Less Than Significant Impact.**

No schools, existing or proposed are within .25 miles of the proposed project. Therefore, less than significant impacts would occur.

Hazardous Materials Sites

3.6-4: *The proposed project may 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 create a significant hazard to the public or the environment.* **Level of Significance: Less than Significant with Mitigation.**

Onsite Improvements

The construction of new structures and facilities on hazardous material sites can expose people to unnecessary hazards. Sites that are contaminated with hazardous materials must be remediated or have the hazardous materials stabilized in order to prevent risks to public health and safety. The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space.

A Phase I Environmental Site Assessment was prepared for the proposed project area. Pursuant to Government Code Section 65962.5, an Environmental Database Report (EDR) of Standard Environmental Record Sources (records) was prepared specifically for the property.

The project site has historically been used for homestead purposes. Remnants of several historic homesteads scatter the project site, including homesteads by Trendell, Amaral, Atlantic and Pacific Railroad, and Southern Pacific Railroad. Federal homestead requirements during this period included a minimum of five years of residence and cultivation. Evidence of prior activity on the project site includes dilapidated water conveyance systems including wells, windmill foundations, canals, small reservoirs, and water troughs. One (1) offsite facility, identified as "Old Mine Illegal Dumpsite", is presumed to be on or near the southeastern portion of the project site. The former landfill was reported as "clean closed" in September 2000. No visual indications of the landfill were observed during the site survey. No evidence of any hazardous materials or indications of staining or odors were noted relative to the structures and debris.

The property was listed within a 1-mile radius of the site on two (2) databases. According to information provided by EDR, illegal drug labs were reportedly operated and/or equipment or materials were stored at this location. However, no spills or releases were reported. Based on the distance and direction of this property to the site and on the information from the database report, these locations are not considered to be a recognized environmental condition.

The Victorville Precision Bombing Range (PBR), located approximately 2,500 feet north of the project site, is listed on the Formerly Used Defense Sites database. PBR served as a practice bombing range from 1943 to 1944. Based on information provided in the database report and the distance of the facility relative to the site, the PBR is not considered to be a recognized environmental condition with regard to the site.

The implementation of mitigation measures HAZ-2 and HAZ-4, above, would reduce impacts to less than significant levels.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. The project also includes the development of two (2) offsite reservoirs. The proposed offsite improvements would not 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 not create a significant hazard to the public or the environment.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. A Phase I Environmental Site Assessment was prepared for the proposed project area. The proposed Golf Course Overlay would not 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 not create a significant hazard to the public or the environment.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. The proposed Equestrian Overlay would not 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 not create a significant hazard to the public or the environment.

Emergency Management

3.6-5: *Implementation of the proposed project may physically interfere with an adopted emergency response plan or emergency evacuation plan.* **Level of Significance: Less than Significant.**

Onsite Improvements

The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space.

The Disaster Mitigation Act of 2000 (DMA 2000), (P.L. 106-390) provides an opportunity for states, Tribes and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Act) by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of mitigation plan requirements (Section 322). This new section emphasizes the need for State, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts.

Major evacuation routes are typically located along major interstates, freeways and major north-south and east-west roads. In this case, Cahuilla Road, Central Road, and Highway 18 are considered emergency evacuation routes. The proposed project is consistent with the San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan. In this regard, impacts associated with emergency response and evacuation are considered less than significant.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. The project also includes the development of two (2) offsite reservoirs. Implementation of the proposed offsite improvements would not physically interfere with an adopted emergency response plan or emergency evacuation plan.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Implementation of the proposed Golf Course Overlay would not physically interfere with an adopted emergency response plan or emergency evacuation plan.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Implementation of the proposed Equestrian Overlay would not physically interfere with an adopted emergency response plan or emergency evacuation plan.

Wildland Fires

3.6-6: *The project may expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized study areas or where residences are intermixed with wildlands.* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space.

Development within the proposed project area would convert the rural desert landscape into a more urbanized form, reducing the potential hazard associated with wildland fires. However, this conversion could increase the potential for structural fires associated with urban uses.

Impacts associated with this are not considered significant, since the project would require review and approval by the Apple Valley Fire Protection District (AVFPD) and would be required to pay development impact fees, which provide the funding for equipment and personnel. Additionally, a Public Safety Center including a fire station and sheriff substation will be located within the Neighborhood Commercial portion of the proposed project site.

Upon approval of these projects the AVFPD would review the proposed project plans, and would require the necessary provisions to minimize potential impacts. These provisions could include fuel modification setbacks, removal of fuel sources surrounding a project area, and/or implementation of sprinkler systems within the proposed structures. The intent of these provisions is to reduce the potential fuel load within the urban/wildland interface, which would reduce the impacts associated with this condition.

The proposed project will be required to provide residents the information and resources for preventing wildfires and protecting properties from wildfire hazards located on the San Bernardino County Fire Department's Fire Prevention Advice page (http://www.sbcfire.org/fire_prevention_advice.asp).

Through implementation of standard review and approval procedures and oversight by the AVFPD, impacts associated with wildland fires are considered less than significant.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. In addition, the project includes the development of two (2) offsite reservoirs. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range. The offsite improvements will not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. Development within the proposed project area would convert the rural desert landscape into a more urbanized form, reducing the potential hazard associated with wildland fires. Impacts associated with building a golf course are not considered significant, since the project would require review and approval by the AVFPD and would be required to pay development impact fees, which provide the funding for equipment and personnel. The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. Through implementation of standard review and approval procedures and oversight by the AVFPD, impacts associated with wildland fires are considered less than significant.

Airport Hazards

3.6-7: *For a project within the vicinity of a public airstrip, implementation of the proposed project would result in a safety hazard for people residing or working in the project area.* **Level of Significance: Less Than Significant Impact.**

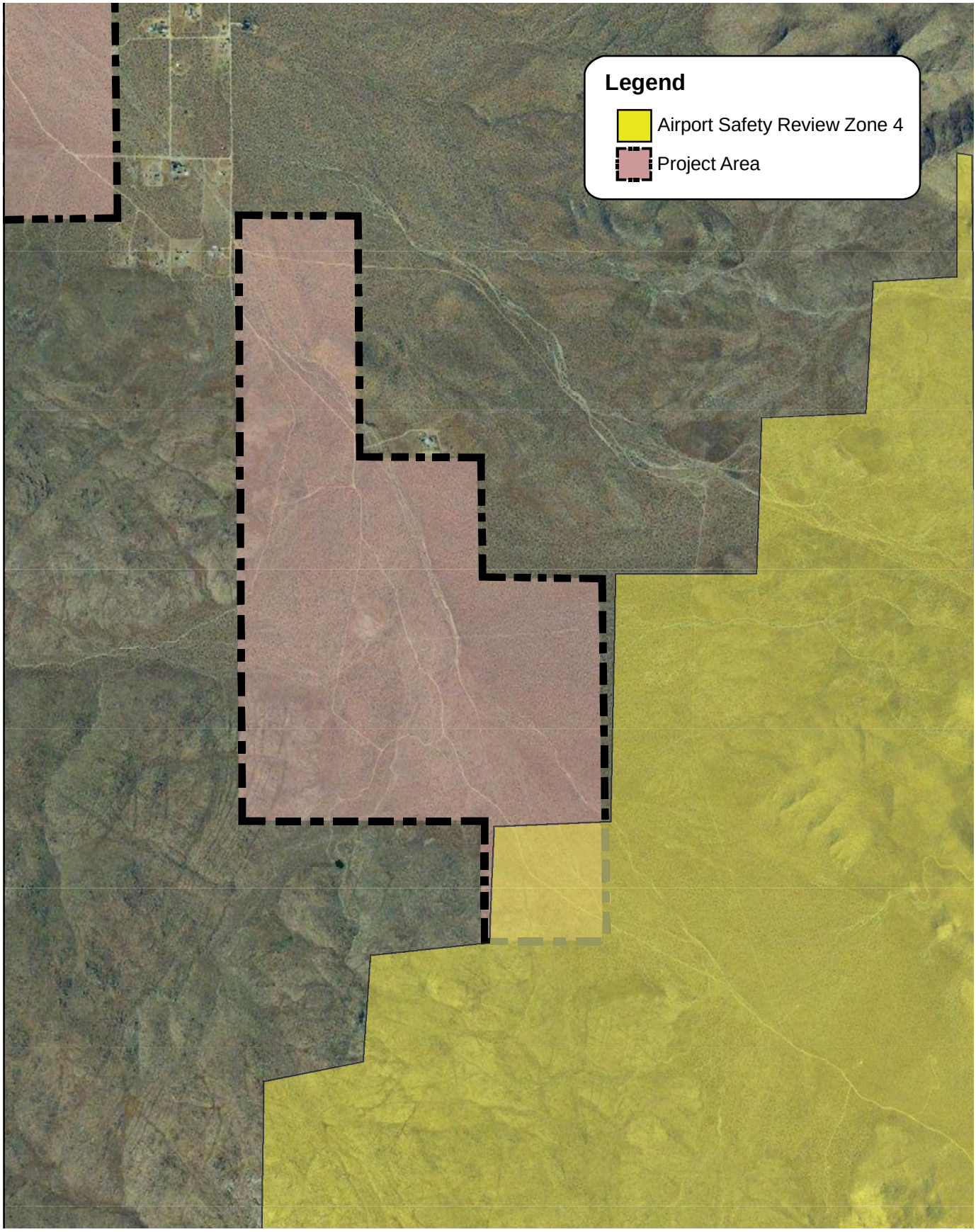
Onsite Improvements

A small portion of the project site (southeastern-most portion) is located in Airport Safety Review Zone 4; refer to Exhibit 3.6-2, *Airport Safety Review Map.* Airport Safety Review Zone Four (4) pertains to Low Altitude Corridors (generally associated with military flight corridors). This has the potential to create a significant impact if incompatible development is allowed. Development within an adverse hazard and airport safety zone requires land use restrictions to minimize risks to both people working and residing in this area, and aircraft utilizing the airport.

The Specific Plan proposes Low Residential (single-family lots 7,000 sf and greater), Estate Residential (single-family lots 1 acre or greater), and open space for this portion of the project site. As stated in Table S-5, Land Use Compatibility in Aviation Safety Areas of the *General Plan*, residential uses are normally acceptable. The uses proposed in the Specific Plan are in conformance with the County's allowed uses for Airport Safety Review Zone 4 areas. Therefore, implementation of the proposed project would not expose people or property to significant airport-related hazards. Less than significant impacts would occur in this regard.

Offsite Improvements

No offsite improvements are proposed within the Airport Safety Review Zone 4 area. Therefore, no impacts would occur in this regard.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

AIRPORT SAFETY REVIEW MAP

Exhibit 3.6-2

This page was intentionally left blank

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, it would not be developed in the area designated as Airport Safety Review Zone 4. Therefore, no impacts would occur in this regard.

Equestrian Overlay

Should the Equestrian Overlay be developed, it would not be developed in the area designated as Airport Safety Review Zone 4. Therefore, no impacts would occur in this regard.

Airport Hazards

3.6-8: *For a project within the vicinity of a private airstrip, the project would result in a safety hazard for people residing or working in the project area*. **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The project site is located approximately ½ to 1 mile from a small single private residential airstrip called Holiday Ranch. The airstrip is located north of the project site, north of Jackson Road and east of Oldenburg Road. The airstrip is not paved and is infrequently used. Permission must be granted by the owner of the airstrip prior to landing. Currently, this facility is not governed by an existing airport land use plan. Due to the infrequent use of the airstrip and the lack of an existing airport land use plan, impacts are considered to be less than significant.

Offsite Improvements

Impacts to potential offsite improvements would be similar to those identified with onsite improvements. Less than significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Impacts to the Golf Course Overlay would be similar to those identified with onsite improvements. Less than significant impacts would occur in this regard.

Equestrian Overlay

Impacts to the Equestrian Overlay would be similar to those identified with onsite improvements. Less than significant impacts would occur in this regard.

3.6.4 ANALYSIS OF CUMULATIVE IMPACTS

Hazards, risk of upset, and human health impacts within the proposed project area are not expected to be cumulatively significant and/or adverse. Each accidental release of hazardous materials would be required to be managed in a fashion that would not leave any significant residual contamination that can contribute to an increase in public health risk. Therefore, the proposed project has no identified potential to significantly increase the risk of such impacts beyond current levels. The proposed project would not be expected to contribute to any new cumulative adverse impacts.

CHAPTER 3.7

HYDROLOGY, DRAINAGE, AND WATER QUALITY

3.7 HYDROLOGY, DRAINAGE AND WATER QUALITY

This section provides information regarding potential hydrology, drainage, and water quality impacts resulting from general grading and operation of the proposed project. Information for this section was taken from the *Water Quality Assessment and Water Resources Study* (Appendix K) and the *Hacienda at Fairview Valley Specific Plan Conceptual Drainage Report*, prepared by Allard Engineering, June 2009.

3.7.1 EXISTING CONDITIONS

Regional Hydrology and Drainage

A watershed is defined as the area or region from which surface water flows to a particular water body. The proposed project is located within the Lahontan Region. The jurisdiction of the California Regional Water Quality Control Board (RWQCB), Lahontan Region (Regional Board) extends from the Oregon Border to the northern Mojave Desert and includes all of California east of the Sierra Nevada Mountains. The Lahontan region includes the highest (Mount Whitney) and lowest (Death Valley) points in the contiguous United States, and the topography of the remainder of the region is diverse. The Lahontan Basin has historically been divided into North and South Basins at the boundary between the Mono Lake and East Walker River watersheds. The Lahontan Basin encompasses approximately 33,131 square miles and includes over 700 lakes, 3,170 miles of streams, and 1,581 square miles of ground water basins. There are three (3) major surface water systems in the South Lahontan Basin, including Mono Lake, Owens River, and the Mojave River watersheds, and a number of separate closed ground water basins.

The primary geographic and hydrologic feature in the region is the Mojave River. The headwaters of the Mojave River start in the San Bernardino Mountains, which annually receive greater than 40 inches of precipitation at their highest elevations. Historically, the annual recharge from the headwaters is approximately 75,000 acre-feet. The Mojave River channel, through both surface and subsurface flow, transects the watershed for a distance of approximately 120 miles to its terminus at Silver Dry Lake near the community of Baker. Aside from intense storm events, the Mojave River channel is typically dry downstream of the Mojave Forks Dam except in select locations where ground water is forced to the surface by geologic structures.

Drainage in the project area is characterized by steep drainage courses in the mountains that disperse and transition into milder sloped alluvial fans that convey runoff to Fairview Creek. Fairview Creek meanders through Fairview Valley and is the most significant drainage course in the valley. Apple Valley Dry Lake is located six (6) miles to the west and serves as the receiving body of water for Fairview Creek.

Existing Site Drainage & Hydrology

Four (4) natural springs can be found throughout Fairview Valley, including Isabella, Quail, Amaral, and Horse Springs. Groundwater below these springs is anticipated to be available at depths of approximately 230 feet.

The entire project site is a tributary to Fairview Creek. Fairview Creek crosses Cahuilla Road approximately 500 feet east of Laguna Seca Drive. The majority of the site (near Villages B, C, and D) and its tributary runoff drain into Fairview Creek upstream of Cahuilla Road. A small portion of the project site (near Village A) and its tributary water drain to Fairview Creek downstream from Cahuilla Road. The project site has a large tributary watershed characterized by steep mountains, including Fairview Mountain and the Granite Mountain range. Fairview Creek is a large wash that winds through the floor of Fairview Valley. In a 100-year event storm, the creek flows are estimated at ±8,000 c.f.s. The creek has a gentle slope of 1 percent to 3 percent in the upper reaches of the project site.

Because the project site is currently unimproved, occasional flooding occurs during periods of heavy rainfall.

A summary of the existing hydrology is provided in Table 3.7-1: *Existing Hydrology.*

Table 3.7-1:
Existing Hydrology

Location	Area (acres)	Q_{100} (cfs)
Fairview Creek at Cahuilla Road	9,396.8	10,926
Cahuilla Road west of Fairview Creek	1032	1,205

Q_{100} refers to rate of flow during a 100-year storm event
cfs = cubic feet per second
Source: Allard Engineering, *Hacienda at Fairview Valley Specific Plan Drainage Report*, June 2009.

Water Quality

The Mojave River region has been selected as a priority or "focus" watershed because of numerous water quality and quantity issues. Historically known for its agricultural, industrial, and military land uses, the Victor Valley has significantly changed during the last several decades into an urbanized, populated area. Urban growth has significantly modified the arena of waste discharges that could potentially affect water quality, including stormwater and wastewater treatment. There are also numerous water quality issues associated with past and current agricultural, industrial, and military land uses throughout the watershed. Because of water quality degradation associated with past industrial activities, some waters in the Mojave River watershed are listed as a water quality limited segment for priority organics on the Federal Section 303 (d) list of impaired water bodies.

Water quality issues are becoming increasingly significant throughout the State as well as the County of San Bernardino. One (1) such issue for the County of San Bernardino is the presence of high levels of Total Dissolved Solids (TDS).

Increases in groundwater TDS are a function of the recharge of saline water originating from storm flows, urban runoff, imported water, and incidental recharge. TDS are also attributed in part to salt contamination from past and existing agricultural land uses. The TDS impacts of agriculture on groundwater usually originate from fertilizer use on crops, consumptive use, and dairy waste disposal. On an annual basis, the total amount of TDS from manure discharged to the southern half of the Basin will reach groundwater averages of approximately 29,000 tons (SAWPA 2002).

Water quality problems in the Lahontan region are largely related to non-point sources (including erosion from construction, timber harvesting, and livestock grazing), stormwater, acid drainage from inactive mines, and individual wastewater disposal systems. There are relatively few point source discharges. These discharges also include several wastewater treatment plants, fish hatcheries operated by the Department of Fish and Game, and some geothermal discharges.

Urban Runoff Characteristics

The most common categories of stormwater pollutants are described below. Receiving waters can assimilate some quantity of various runoff constituents. However, there are thresholds beyond which the measured constituent becomes a pollutant and results in an undesirable impact.

Sediment

Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is typically the major pollutant by volume in surface water. Suspended soil particles can cause the water to look cloudy (be turbid). The fine sediment particles also act as a vehicle to transport other pollutants, including nutrients, trace metals, and hydrocarbons. Construction sites are the largest source of sediment for urban areas under development; another major source is stream bank erosion, which may be accelerated by increases in peak flow rates and volumes of runoff due to urbanization.

Nutrients

Nutrients are a major concern for surface water quality, especially phosphorous and nitrogen, which can cause algal blooms and excessive vegetative growth. Of the two, phosphorus is usually the limiting nutrient that controls the growth of algae in lakes or other nonmoving water bodies. The orthophosphorous form of phosphorus is a readily available nutrient for plant growth.

The ammonium form of nitrogen can also have severe effects on surface water quality. The ammonium is converted to nitrate and nitrite forms of nitrogen in a process called nitrification. This process consumes large amounts of oxygen, which can impair the dissolved oxygen levels in water. The nitrate form of nitrogen is very soluble and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching groundwater. Orthophosphate from automobile emissions also contributes phosphorus in areas with heavy automobile traffic.

Generally, nutrient export is greatest from development sites with large impervious areas. Other problems resulting from excess nutrients are surface algal scums, water discolorations, odors, toxic releases, and overgrowth of plants. Common measures of nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate, and total organic carbon (TOC).

Trace Metals

Trace metals are primarily of concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. A shorter duration of exposure to a trace metal reduces its toxicity in the aquatic environment. The toxicity of trace metals in runoff also varies with the hardness of the receiving water. As total hardness of the water increases, so does the potential for adverse effects. Metals commonly found in urban runoff are lead, zinc, and copper. Automobile emissions are also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff is attached to sediment. Sediment effectively reduces the level of trace metals that is immediately available for biological uptake and

subsequent bioaccumulation (metals attached to sediment settle out rapidly and accumulate in the soils). Also, urban runoff events typically have a short duration, which reduces the amount of exposure and its toxicity in the aquatic environment.

Oxygen-Demanding Substances

Aquatic life is dependent on the dissolved oxygen (DO) in water. When microorganisms consume organic matter, DO is consumed in the process. A rainfall event can deposit large quantities of oxygen-demanding substances in lakes and streams. The biochemical oxygen demand (BOD) of typical urban runoff is on the same order of magnitude as the effluent from an effective secondary wastewater treatment plant. A problem from low DO can result when the rate of oxygen-demanding material exceeds the rate of oxygen replenishment. Oxygen demand is estimated by direct measure of DO and indirect measures such as BOD, chemical oxygen demand (COD), oils and greases, and TOC.

Bacteria

Bacteria levels in undiluted urban runoff exceed public health standards for water contact recreation, almost without exception. Studies have found that total coliform bacteria counts exceed U.S. Environmental Protection Agency (EPA) water quality criteria at almost every site examined and almost every time it has rained. The coliform bacteria that are detected may not be a health risk in themselves, but are often associated with human pathogens.

Oil and Grease

Oil and grease contain a wide variety of hydrocarbons, some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed in it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles onto impervious surfaces. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations. Residential land uses generate less hydrocarbons export, although illegal disposal of waste oil into stormwater can be a local problem.

Other Toxic Chemicals

Priority pollutants are generally related to hazardous wastes or toxic chemicals and are occasionally detected in urban runoff. Priority pollutant scans, which evaluated the presence of over 120 toxic chemicals and compounds, have been conducted in previous studies of urban runoff. The scans rarely revealed toxins that exceed the current safety criteria. The urban runoff scans were primarily conducted in suburban areas not expected to have many sources of toxic pollutants (with the possible exception of illegally disposed or applied household

hazardous wastes). Measures of priority pollutants in stormwater include phthalate (plasticizer compound), phenols and creosols (wood preservatives), pesticides and herbicides, oils and greases, and metals.

Standard parameters are used to assess the quality of stormwater and provide a method of measuring stormwater impairment. Knowing these typical characteristics assists in understanding water quality requirements. The quantity of a material in the environment and its characteristics determine the degree of availability as a pollutant in surface runoff. In an urbanized area, the quantity of certain pollutants in the environment is a function of the intensity of the land use. For instance, a high density of automobile traffic makes a variety of potential pollutants (such as lead and hydrocarbons) more available. The availability of a material, such as a fertilizer, is a function of the quantity and the manner in which it is applied. Applying fertilizer in quantities that exceed plant needs leaves the excess nutrients available for loss to surface water or groundwater.

Monitoring and Evaluating Water Quality

The physical properties and chemical constituents of water have served traditionally as the primary measures for monitoring and evaluating water quality. Evaluating the condition of water via a water quality standard means evaluating its physical, chemical, and/or biological characteristics. Water quality parameters for stormwater comprise a long list and are classified in many ways. In many cases, the concentration of an urban pollutant, rather than the annual load of that pollutant, is needed to assess a water quality problem. Some of the physical, chemical or biological characteristics that evaluate the quality of the surface runoff are discussed in the following text.

Dissolved Oxygen

Dissolved oxygen in the water has a pronounced effect on the aquatic organisms and the chemical reactions that occur. It is one (1) of the most important biological water quality characteristics in the aquatic environment. The dissolved oxygen concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure, and biological activity. Dissolved oxygen is a transient property that can fluctuate rapidly in time and space; it represents the status of the water system at a particular place and time of sampling. The decomposition of organic debris in water is a slow process and the resulting changes in oxygen status also respond slowly. The oxygen demand is an indication of the pollutant load and includes measurements of BOD or COD.

Biochemical Oxygen Demand (BOD)

The biochemical oxygen demand (BOD) is an index of the oxygen-demanding properties of the biodegradable material in the water. Samples are taken from the field and incubated in the

laboratory at 20 degree centigrade (^{o}C), after which the residual dissolved oxygen is measured. The BOD value commonly referenced is the standard five (5)-day value. These values are useful in assessing stream pollution loads and for comparison purposes.

Chemical Oxygen Demand (COD)

The chemical oxygen demand (COD) is a measure of the pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It can be determined quickly because it does not rely on bacteriological actions as with BOD. COD does not necessarily provide a good index of oxygen-demanding properties in natural waters.

Total Dissolved Solids (TDS)

TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. TDS is an important indicator of water quality for several reasons. Dissolved solids affect the ionic bonding strength related to other pollutants in the water, such as metals. TDS is also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influences the ability of a water body to assimilate wastes. Eutrophication rates depend on TDS.

pH

The pH of water is the negative log, base 10, of the hydrogen ion (H+) activity. A pH of 7 is neutral; a pH greater than 7 indicates alkaline water; a pH less than 7 represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one (1) time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life; generally, toxic limits are pH values that are less than 4.8 and greater than 9.2.

Alkalinity

Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate, and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 mg/L and ranges of alkalinity of 100-200mg/L seem to support well-diversified aquatic life.

Specific Conductance

The specific conductivity of water (its ability to conduct an electric current) is related to the total dissolved ionic solids. Long-term monitoring of project waters can develop a relationship between specific conductivity and TDS. Measurement is quick and inexpensive, and can be used to approximate TDS. Specific conductivities in excess of 2,000 microohms per centimeter (μohms/cm) indicate a TDS level too high for most freshwater fish.

Turbidity

The clarity of water (the ability of photosynthetic light to penetrate it) is an important indicator of water quality. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed, and can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations. Suspended clays and other organic particles increase turbidity.

Nitrogen (N)

The sources of nitrogen in a water body are from the additions of organic matter and chemicals found in stormwater. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication because nitrification consumes DO in the water. Nitrogen occurs in many forms. Organic nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, a form available for plants. High concentrations of nitrate-nitrogen (N/N) in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/L of nitrate-nitrogen is needed for algal blooms. Some fish life can be affected when N/N exceeds 4.2 mg/L. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen are Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate and ammonia.

Phosphorus (P)

Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban stormwater discharge is generally fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Because phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement are detecting orthophosphate and total phosphorus.

On-Site Runoff Quality

The expected pollutants in the existing-condition stormwater runoff could potentially include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Suspended sediments constitute the largest mass of pollutant loadings to receiving waters from urban areas. Construction is a major source of sediment erosion. Petroleum hydrocarbons result mostly from automobile sources. Nutrient and bacterial sources include garden fertilizers, leaves, grass clippings, pet wastes, and faulty septic tanks.[1] Refer to Section 3.7.10.2.2, *Environmental Impacts and Mitigation Measures*, for a detailed analysis of impacts relative to runoff.

Groundwater

The Upper Mojave River Valley Groundwater Basin underlies an elongated north-south valley, with the Mojave River flowing (occasionally) through the valley from the San Bernardino Mountains on the south, northward into the Middle Mojave River Valley Groundwater Basin at the town of Helendale. The groundwater basin is bounded on the north by a roughly east-west line from basement rock outcrops near Helendale to those in the Shadow Mountains. The southern boundary is the contact between Quaternary sedimentary deposits and unconsolidated basement rocks of the San Bernardino Mountains. The basin is bounded on the southeast by the Helendale Fault and on the east by basement exposures of the mountains surrounding Apple Valley. In the west, the boundary is marked by a surface drainage divide between this basin and El Mirage Valley Basin, and a contact between alluvium and basement rocks that form the Shadow Mountains. Natural recharge of the basin is from direct precipitation, ephemeral stream flow, infrequent surface flow of the Mojave River, and underflow of the Mojave River into the basin from the southwest. Treated wastewater effluent, septic tank effluent, effluent from two (2) fish hatchery operations, and irrigation waters are allowed to percolate into the ground and recharge the groundwater system. A large, but sporadic contribution to recharge occurs when the Mojave River is flowing. The general groundwater flow is toward the active channel of the Mojave River. It then follows the course of the river through the valley. The Helendale Fault forms a barrier to groundwater flow in the southeast corner of the basin. This barrier causes groundwater to flow northward under a surface drainage divide into the Mojave River drainage instead of northeastward into Lucerne Lake (dry lake) in the Lucerne Valley basin.

The Upper Mojave River Valley Basin includes parts of the Transition Zone, Alto and Este Subareas. In 1967 the Department of Water Resources (DWR) estimated that the storage capacity of the Upper Mojave River Valley Groundwater Basin is approximately 27,839,000 acre-feet. As reported in DWR Bulletin 118, total storage capacity for the Upper Mojave River Valley Groundwater Basin varies. In addition, Bulletin 118 states that a portion of the subject

[1] State Water Resources Control Board website, www.waterboards.ca.gov/nps/docs/guidance/urbanmms.pdf, accessed September 24, 2007.

groundwater basin with a surface area encompassing 413,000 acre-feet contained about 10.8 million acre feet in storage at the end of 1998, although the physical distribution of that water was not defined but appeared to include the Alto Subarea.

Alto Subarea

Particularly relevant to the project analysis is the Alto Subarea of the Mojave Basin. In 1996 the Mojave Basin was adjudicated per the Judgment, which was established in order to create incentives to conserve local water, guarantee that downstream producers will not be adversely affected by upstream producers, and assess producers to obtain funding for the purchase of imported water. The adjudicated Mojave Basin includes the Alto Subarea, Baja Subarea, Centro Subarea, Este Subarea and the Oeste Subarea. The Judgment and the adjudication process are further described in the Water Supply Assessment (WSA) prepared for this project and approved by the Apple Valley Ranchos Water Company (AVR), the Water Resources Study (WRS) also prepared for this project, and in Chapter 3.10, *Public Services and Utilities* of this EIR. The project WSA and WRS are found in Appendix K of this Draft EIR.

The Alto Subarea consists of water-bearing strata underlying and paralleling a 35-mile length of the Mojave River, and is naturally recharged by rain and snowmelt in the San Bernardino Mountains located to the south, the Mojave River, and subsurface flows between Subareas. The Alto Subarea generally encompasses the communities of Apple Valley, Victorville, Adelanto, Hesperia, Helendale, and Phelan. It is generally bounded on the south by the non-water-bearing rocks of the San Bernardino Mountains, by the non-water bearing rocks of the San Gabriel Mountains to the west, and by the Helendale Fault on the northeast. To the south are the headwaters of the Mojave River, to the east (up-gradient) the Subarea merges with the Este Subarea, to the west (up-gradient) the Subarea merges with the Oeste Subarea, and to the north (down-gradient) the Subarea merges with the Centro Subarea.

The Alto Subarea contains portions of the Mojave River Floodplain Aquifer and the Regional Aquifer. Groundwater levels in wells in the Floodplain Aquifer (which roughly underlies the Mojave River) tend to vary in concert with rainfall and runoff rates, whereas groundwater levels in the Regional Aquifer do not show significant changes due to local rainfall. The historical trend in the Mojave Basin shows declining groundwater levels in the Regional Aquifer where natural recharge is limited. As mentioned above, and discussed in Chapter 3.10, the Mojave Basin has undergone an adjudication process in order to protect groundwater supplies and quality, and to assure that sufficient water supplies continue to be available to all water purveyors.

Mojave Water Agency (MWA), the Watermaster for the Mojave Basin, estimated that the total groundwater in storage for the Alto Subarea was 960,000 acre feet in 1999, with an available

additional storage capacity of approximately 1.1 million acre feet. Thus, the total storage capacity for the Alto Subarea is estimated at approximately 2.1 million acre-feet.

The adjudication Judgment establishes a Free Production Allowance (FPA), which is the amount of water that a producer can pump without incurring a Replacement Water Obligation and is a percentage of the Base Annual Production (BAP). For the 2008-2009 water year the BAP for the Alto Subarea was 114,308 acre-feet and the FPA was 71,598 acre-feet. Replacement Water Obligations paid by a producer include a component for any excess production over FPA, a component to cover the collective share of the Subarea's Makeup Water Obligation, and are calculated to account for transfers, leases, and any Carry Over as described in the Water Resources Study which can be found in Appendix K of this Draft EIR.

Verified water production (pumpage) in the Alto Subarea during the 2008 water year was 89,700 acre-feet, a reduction of over 10,000 acre-feet compared to the previous water year's 99,900 acre-feet, due to conservation efforts. Refer to Table 3.10-5, *Alto Subarea Verified Annual Production,* located in Chapter 3.10, *Public Services and Utilities*.

Groundwater extracted from the Alto Subarea of the Mojave Basin, will be supplied to the project site via the Apple Valley Ranchos Water Company (AVR), an investor-owned utility company recognized under the Judgment. Of the 89,700 acre-feet of verified production within the Alto Subarea, AVR was responsible for approximately 14,245 acre-feet, which represents approximately 15.89 percent of the total verified 2008 water production within the Alto Subarea. Refer to Table 3.10-6, *Apple Valley Ranchos Annual Production*, located in Chapter 3.10, *Public Services and Utilities.* Refer to Chapter 3.10 of this EIR for additional information regarding AVR water extraction and conveyance infrastructure system, water supplies, and management of water resources in the project area.

Flood Hazards and Flood Control

Federal Emergency Management Agency provides a majority of the flood hazard mapping in the County that delineates the boundaries of any 100-year flood plains (i.e., the area within which the statistical frequency of flooding is believed to be 1 in 100 in any given year). These maps form the basis for regulating floodplain development and the rating of flood insurance policies. The project site is located in a Flood Insurance Rate Map Zone D, which is an area of undetermined flood hazards.

The San Bernardino County Flood Control District is responsible for controlling flood waters in major watercourses and channels under the jurisdiction of the District. The District is subdivided into six (6) zones with interest, responsibilities, or geographical divisions distinctive of the particular zone. The project site is located in San Bernardino Flood Control District Zone 4. Zone 4 is comprised of the Mojave River Valley from the San Bernardino Mountains to Silver Lake, including the Town of Apple Valley, and encompasses approximately 1,783 square miles.

Regulatory Framework

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) - a former independent agency that became part of the new Department of Homeland Security in March 2003 - is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster-related responsibilities of the Federal government into one (1) agency, FEMA is responsible for coordinating the Federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to States, communities and individuals. The Federal Insurance and Mitigation Administration (FIMA) within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

Clean Water Act

In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act) was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the Clean Water Act was amended to require that the United States Environmental Protection Agency (EPA) establish regulations for the permitting of municipal and industrial stormwater discharges under the NPDES permit program. The Environmental Protection Agency published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters to be regulated by a NPDES permit.

In addition, the Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the Environmental Protection Agency. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing etc.), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of

constituents (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements which represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria, the Environmental Protection Agency established numeric water quality criteria for certain toxic constituents in receiving waters with human health or aquatic life designated uses in the form of the California Toxics Rule (CTR) (40 CFR 131.38).

Clean Water Act Section 303(d) – Total Maximum Daily Loads

When designated beneficial uses of a particular receiving water body are being compromised by water quality, Section 303(d) of the Clean Water Act requires identifying and listing that water body as "impaired." Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (with a "factor of safety" included). Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

California Toxics Rule

The California Toxics Rule (CTR) is a Federal regulation issued by the Environmental Protection Agency providing water quality criteria for potentially toxic constituents in receiving waters with human health or aquatic life designated uses in the State of California. CTR criteria are applicable to the receiving water body and therefore must be calculated based upon the probable hardness values of the receiving waters for evaluation of acute (and chronic) toxicity criteria. At higher hardness values for the receiving water, copper, lead, and zinc are more likely to be complexed (bound with) components in the water column. This in turn reduces the bioavailability and resulting potential toxicity of these metals.

Due to the intermittent nature of stormwater runoff, especially in Southern California, the acute criteria are considered to be more applicable to stormwater conditions than chronic criteria and therefore are used in assessing impacts. Acute criteria represent the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects; chronic criteria equal the highest concentration to which aquatic life can be exposed for an extended period of time (four (4) days) without deleterious effects.

Clean Water Act Section 401 – Water Quality Certification

In addition to the issuance of NPDES permits or waste discharge requirements, the Regional Water Quality Control Board (RWQCB) acts to protect the quality of surface waters through water quality certification as specified in Section 401 of the Clean Water Act (33 USC 466 et seq.) Section 401 of the Clean Water Act requires that any person applying for a Federal permit or

license which may result in a discharge of pollutants into waters of the United States must obtain a State water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Subject to certain limitations, no license or permit may be issued by a Federal agency until certification required by Section 401 has been granted. Further, no license or permit may be issued if certification has been denied. Clean Water Act Section 404 permits and authorizations are subject to Section 401 certification by the RWQCBs.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the States, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from States with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Regional Water Quality Control Board Permitting Programs

The Regional Water Quality Control Board (RWQCB) develops regulations and enforces State policies which protect State waters. In regard to the Specific Plan, the RWQCB is responsible for developing and revising the regional basin plan, implementing the National Pollutant Discharge Elimination System (NPDES) program, permitting waste discharges to State waters, and enforcing waste discharge cleanups. The Comprehensive Water Quality Control Plan

Report for the Lahontan Basin identifies beneficial uses, establishes water quality objectives, and outlines a program for implementing the plan.

All wastewater discharges in the region, whether to surface or groundwater, are subject to Waste Discharge Requirements (WDRs); all reuses of treated wastewaters are subject to Water Reclamation Requirements (WRRs). In addition, the United States Environmental Protection Act (USEPA) has delegated responsibility for water quality to the State Water Resources Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) for implementation of the Federal NPDES program. Therefore, WDRs for discharges to surface waters also serve as NPDES permits. These combined programs are the legal means to regulate controllable discharges of water. It is illegal to discharge any wastes into any waters of the State or to reuse treated wastewaters without obtaining appropriate WDRs, WRRs, or NPDES permits. These permits hereinafter are referred to as "Requirements."

Any facility or person who discharges, or proposes to discharge, wastes or makes a material change to the character, location, or volume of waste discharges to waters in the Lahontan Basin Region (other than into a community sewer system) must describe the quantity and nature of the proposed discharge in a Report of Waste Discharge (ROWD) or an NPDES application. Upon review of the ROWD or NPDES application and all other pertinent information (including comments received at a public hearing), the regional board will consider the issuance of Requirements that incorporate appropriate measures and limitations to protect public health and water quality. The basic components of the Requirements are:

Discharge limitations (including, if required, effluent and receiving water limits);

- Standard requirements and provisions outlining the discharger's general discharge requirements and monitoring and reporting responsibilities; and
- A monitoring program in which the discharger is required to collect and analyze samples and submit monitoring reports to the regional board on a prescribed schedule.

Discharges are categorized according to their threat to water quality and their operational complexity. In addition, discharges to surface waters are categorized as major or minor discharges. Filing and annual fees are based on these categories. WDRs or WRRs usually do not have an expiration date but are reviewed periodically on a schedule based on the level of threat to water quality. NPDES permits are adopted for a five-year period.

Most requirements are tailored to specific waste discharges. In some cases, however, discharges can be regulated under general requirements, which simplify the permit process for certain types of discharges. These general requirements are issued administratively to the discharger after a completed ROWD or NPDES application has been filed and the Executive Officer of the RWQCD has determined that the discharge meets the conditions specified in the general

Requirements. Point-source discharges include wastewaters from new residential development, industrial and manufacturing facilities, construction sites, and power generation stations.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator (EPA Region 5). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWC.

Stormwater Program

The 1987 Clean Water Act amendments required the EPA to establish regulations to control stormwater discharges associated with industrial activity, and discharges from large and medium municipal separate storm sewer systems. Large municipal separate storm sewer systems serve a population of 250,000 or more and medium municipal storm sewer systems serve a population of more than 100,000 but less than 250,000. On November 16, 1990, the EPA published the final regulations that established the NPDES permit requirements for discharges of stormwater from large and medium municipal separate storm sewer systems and stormwater discharges associated with industrial activities. The stormwater NPDES permitting program is administered by the SWRCB and RWQCBs.

County of San Bernardino *General Plan*

The Circulation and Infrastructure Element of the *General Plan* includes strategies to support the production of a circulation and infrastructure system consistent with the overall vision specified by the County. The following goals, policies, and programs are applicable to the proposed project:

Goal CI 11: **The County will coordinate and cooperate with governmental agencies at all levels to ensure safe, reliable, and high quality water supply for all residents and ensure prevention of surface and ground water pollution.**

Policy CI 11.1 Apply Federal and State water quality standards for surface and groundwater and wastewater discharge requirements in the review of development proposals that relate to type, location and size of the proposed project to safeguard public health.

Policy CI 11.12 Prior to approval of new development, ensure that adequate and reliable water supplies and conveyance systems will be available to support the development, consistent with coordination between land use planning and water system planning.

Goal CI 13: The County will minimize impacts to stormwater quality in a manner that contributes to improvement of water quality and enhances environmental quality.

Policy CI 13.1: Utilize site design, source control, and treatment control best management practices (BMP's) on applicable projects, to achieve compliance with the County Municipal Stormwater NPDES Permit.

Policy CI 13.2: Promote the implementation of low impact design principles to help control the quantity and improve the quality of urban runoff. These principles include:

a. Minimize changes in hydrology and pollutant loading; ensure that post development runoff rates and velocities from a site do not adversely impact downstream erosion, and stream habitat; minimize the quantity of stormwater directed to impermeable surfaces; and maximize percolation of stormwater into the ground where appropriate.

b. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels;

c. Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;

d. Establish development guidelines for areas particularly susceptible to erosion and sediment loss;

e. Require incorporation of structural and non-structural BMPs to mitigate projected increases in pollutant loads and flows.

Apple Valley East Master Plan of Drainage

The Town of Apple Valley prepared the Apple Valley East Master Plan of Drainage in the late 1980's to serve as a planning tool for storm drain facilities in the area east of Apple Valley Dry Lake. The Master Plan addresses the necessary drainage facilities for those areas tributary to the Mojave River and Apple Valley Dry Lake. The Master Plan identifies storm flows and recommends facilities to convey these flows. Due to the relatively flat nature of the Town, facilities need to carry large amounts of flood waters.

3.7.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance, based on the criteria contained in Appendix G of the *CEQA Guidelines*, are used to determine whether or not implementation of the proposed project would result in significant hydrology, drainage, or water quality impacts. Impacts would be considered significant if the project would:

- Violate any water quality standards or waste discharge requirements;
- 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 preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted;
- 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, siltation, run-off or flooding on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- 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;

- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

Environmental Impacts and Mitigation Measures

Water Quality Standards

3.7-1 *Implementation of the proposed project may violate water quality standards or waste discharge requirements.* **Level of Significance: Less than Significant Impact with Mitigation.**

Onsite Improvements

Impacts related to water quality range over three (3) different periods: (1) during the earthwork and construction phase, when the potential for erosion, siltation, and sedimentation would be the greatest; (2) following construction, prior to the establishment of any ground cover, when erosion potential may remain relatively high; and (3) following completion of the proposed project, when impacts related to sedimentation would decrease markedly, but those associated with urban runoff would increase.

The proposed project involves the permanent conversion of existing vacant desert landscape to urban uses, thereby increasing the amount of impervious surfaces, which would increase stormwater runoff generation and flows. In addition, the proposed project would result in greater vehicular use of new and existing nearby roadways, which could potentially increase contaminants that would be carried in runoff and discharged into receiving waters. Moreover, grading and excavation associated with construction of the proposed project could result in violations to water quality because of erosion of exposed soils and subsequent deposition of particles and pollutants to drainage areas.

While sedimentation is the primary source of water quality impacts during construction, it would not be considered a significant issue during post-construction and operation of the proposed project because most of the site would be paved or landscaped, which would stabilize soils for the long term. After construction and during the life of the proposed project, non-point-source pollutants would be the primary contributors to potential water quality degradation. Non-point-source pollutants are washed by rainwater from rooftops, landscaped areas, parking areas and other impervious surfaces into the on-site drainage system. Implementation of the proposed project is likely to contribute non-point-source pollutants into

the drainage system, such as maintenance and cleaning supplies; landscape materials and products (pesticides, herbicides, and fertilizers); oil and grease and heavy metals from automobiles; and petroleum hydrocarbons from fuels.

Pollutant concentrations in runoff from a site depend on numerous factors, including:

- Land use conditions;
- Implementation of BMPs;
- Site drainage conditions;
- The intensity and duration of rainfall; and
- The climatic conditions preceding the rainfall event.

The highest concentrations of pollutants commonly attributed to urban storm runoff are carried by runoff produced by smaller more frequent storms, at the beginning of larger storms, and/or at the early weeks of the rainy season. Accumulated pollutants and sediments become suspended in urban runoff and are conveyed to downstream locations until a reduction in velocity will produce settlement or vegetation and other elements will provide filtering and interception. Extended detention allows small particles to agglomerate into larger ones and for some of the dissolved and liquid State pollutants to adsorb suspended particles, thus removing a larger proportion of them through sedimentation. The initial runoff that is known for producing the highest concentrations of pollutants is often referred to as the "first flush."

Implementation of the proposed project would result in increased volume and rate of stormwater runoff. To accommodate the overall flow from the site, the project proposes nine (9) stormwater detention basins and associated drainage easements. The storm drainage pipelines would direct surface flow into onsite detention basins. The detention basins would be designed to accommodate flows resulting from 100-year and 10-year storm events. Some of the detention basins would have dead storage available to store debris from upstream developed land. Basin volume would not exceed 50 acre-feet. Two (2) regional detention basins are proposed as part of Village D, and would reduce flow rates and the size of downstream drainage facilities. The remaining seven basins would reduce developed flow rates to or below pre-developed levels; refer to Exhibit 2.0-10, *Conceptual Storm Drain and Basin Plans,* in Chapter 2 of this Draft EIR.

The drainage plan for the proposed project includes possible debris collection and retention basins offsite. Debris and small storm events would be retained in the retention portion of the basins. Larger storm events would exceed the retention storage and be released at a reduced rate from the existing condition. The concept of the Hacienda at Fairview Valley Drainage Plan

is an expansion of the current Master Plan of Drainage for Apple Valley which proposes one (1) large detention basin downstream of the proposed project.

Since the project involves new development, the Lahontan Water Quality Board requires post-construction Best Management Practices (BMPs) to be implemented on this site. To satisfy these BMP requirements, the pollutants of concern must be minimized in the runoff from the project site.

For this development, the pollutants of concern are trash, debris, oil, and grease. To minimize these pollutants from this site's runoff, Continuous Deflective Separation (CDS) units will be used at the end of each storm drain line. These CDS units will filter out the oil, grease, trash, and debris before the runoff reaches the existing culverts.

Additionally, below is a list of potential BMPs that may be included in the design of the proposed project in an effort to reduce the directly connected impervious area and to promote a higher level of stormwater runoff and water quality:

Construction BMPs include, but are not necessarily limited to the following:

- Scheduling or limiting activities to certain times of the year
- Prohibiting certain construction practices
- Implementing equipment maintenance schedules and procedures
- Implementing a monitoring program
- Other management practices to prevent or reduce pollution, such as using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils
- Storing materials and equipment to ensure that spills or leaks do not enter the storm drain system or surface waters
- Developing and implementing a spill prevention and cleanup plan
- Installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains
- Using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water

Operational BMPs include, but are not necessarily limited to the following:

- Controlling roadway and parking lot contaminants by installing oil and grease separators at storm drain inlets
- Cleaning parking lots on a regular basis
- Incorporating peak-flow reduction and infiltration features (such as vegetated swales, infiltration trenches, and vegetated filter strips) into landscaping
- Implementing educational programs
- Utilizing dead storage in detention basins for groundwater infiltration

The proposed project must comply with the requirements of the NPDES General Permit for Stormwater Discharges Associated with Construction Activity. This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must include erosion and sediment control BMPs that would meet or exceed measures required by the General Construction Permit, as well as BMPs that control hydrocarbons, trash and debris, as well as other potential construction-related pollutants. A SWPPP would be developed as required by, and in compliance with, the General Construction Permit and the County of San Bernardino requirements. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. The General Permit requires the SWPPP to include a menu of BMPs to be selected and implemented based on the phase of construction and the weather conditions to effectively control erosion and sediment, as well as proper handling of hydrocarbons, hazardous material, and trash and debris onsite.

Implementation of BMPs would prevent or minimize environmental impacts and ensure that discharges during the construction phase would not cause or contribute to any exceedance of water quality standards in the receiving waters. BMPs to be included in this menu may include among others: soil binders, earth dikes and drainage swales, silt fence, sediment basin/trap, gravel bag berms, street sweeping and vacuuming, sand bag/straw bale barriers, vehicle and equipment cleaning, stabilized construction entrance, spill prevention and control, solid waste management, hazardous waste management, concrete waste management, catch basin inserts, good housekeeping practices, and sanitary septic water management. Preparation and approval of a project-specific SWPPP is included as mitigation to address construction-related water quality impacts. Implementation of these BMPs, as required by the General Permit as part of the project-specific SWPPP, would reduce impacts to a less than significant level. In addition, implementation of Mitigation Measures HYD-1 through HYD-7 would reduce potential impacts to water quality and stormwater discharge to a less than significant level by demonstrating adequate conveyance and capacity, and by preventing construction-related

erosion and reducing pollutants in stormwater discharges from the project site to the maximum extent practicable.

Offsite Improvements

Long-term water quality impacts from runoff could result from the development of offsite infrastructure. These impacts would be mitigated to a level of less than significant with the implementation of BMPs required by the SWPPP.

Overlay Districts

Golf Course Overlay

Impacts associated with implementation of the Golf Course Overlay would be similar in nature to those associated with the proposed project, as analyzed above. The project Specific Plan contains requirements to lessen or eliminate potential impacts from golf course operation to water quality. These project design requirements include a minimum 50′ buffer between irrigated turf areas and Fairview Creek and/or a berm to separate direct turf irrigation flows from drainage courses; and best management practices to minimize the application of pesticide and fertilizer. Implementation of Mitigation Measures HYD-1 through HYD-7 would reduce potential impacts to water quality and stormwater discharge to a less than significant level.

Equestrian Overlay

Impacts associated with implementation of the Equestrian Overlay would be similar in nature to those associated with the proposed project, as analyzed above. A potential minor increase in water quality impacts may occur due to the increased number of lots that would be able to have horses or other County approved livestock. However, this increase is not considered to be significant. Implementation of Mitigation Measures HYD-1 through HYD-7 would reduce potential impacts to water quality and stormwater discharge to a less than significant level.

HYD-1: **Prior to issuance of a Tentative Map, a Runoff Management Plan must be completed which will:**

A. Analyze the project impacts under a full range of storms including but not limited to the 2-, 5-, 10-, 25-, and 100-year.

B. Compare both existing and proposed peak flowrates and volumes (for each existing discharge point) to determine the project's impact to downstream natural channel stability and downstream water quality impacts.

C. Analyze stream stability to determine impacts and appropriate mitigation measures to onsite and downstream natural channels.

D. Integrate flood control, stream stability, and stormwater quality mitigation into a comprehensive plan.

HYD-2: **If the Runoff Management Plan produces flowrates greater than the current County downstream Master Plan, the applicants will provide updates to the Master Plan including, but not limited to: increased flowrates, increased facility sizes, changes in sediment regimes, and impacts to all downstream landowners.**

HYD-3: **The applicants will prepare a preliminary Water Quality Management Plan (WQMP) prior to issuance of the Tentative Map.**

HYD-4: **Prior to issuance of grading permits, applicants shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and obtain a Notice of Intent (NOI) to comply with obtaining coverage under the National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit from the State Water Resources Control Board. Evidence that this has been obtained (i.e., a copy of the Waste Discharger's Identification Number) shall be submitted to the County for coverage under the NPDES General Construction Permit.**

HYD-5: **Prior to issuance of grading permits, the applicant shall submit to the County Engineer for approval, a WQMP, including a project description and identifying Best Management Practices (BMP's) that will be used onsite to reduce pollutants into the storm drain system to the maximum extent practicable, including the use of Continuous Deflective Separation (CDS) units at the end of each storm drain line. The WQMP shall identify the structural and non-structural measures consistent with the County's adopted requirements.**

HYD-6: **Prior to issuance of grading permits, the Public Works Department must review and approve the final engineering of the grading and drainage plans.**

HYD-7: **Prior to approval of the final project plans and specifications, the applicant shall provide a detailed hydrology report that specifies the expected stormwater volumes, projected peak storage capacity or temporary basins, and percolation characteristics of soil. The hydrology report shall demonstrate that adequate stormwater conveyance and capacity is available in onsite or offsite**

basins. The hydrology report would be subject to review and approval by the County Engineer.

Groundwater Supplies

3.7-2 *Implementation of the proposed project may 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).* **Level of Significance: Less Than Significant Impact with Mitigation.**

Onsite Improvements

In compliance with SB610 and to determine the project's potential impacts to water supplies in conjunction with existing and planned future water demands a Water Supply Assessment (WSA) was conducted and adopted by AVR in November of 2008. Development of the proposed project in and of itself will not substantially deplete groundwater supplies or interfere with groundwater recharge. (The WSA is located in Appendix K.)

As shown in Table 3.10-13, *Proposed Project Estimated Water Service Demands,* located in Chapter 3.10 of this EIR, the projected water demand for buildout of the proposed project is estimated to be 1,331 acre-feet per year, or 1.19 million gallons per day. This total demand represents the most water intensive development that could result from implementation of the Specific Plan including the implementation of water efficient design features and water saving technologies.

As stated above, MWA, the Watermaster for the Mojave Basin, calculated the total groundwater in storage for the Alto Subarea at 960,000 acre feet in 1999, with an additional available storage capacity of approximately 1.1 million acre feet. Thus, the total storage capacity for the Alto Subarea is estimated at approximately 2.1 million acre-feet. The main source of water for the proposed project would be groundwater from the Alto Subarea of the Mojave Basin and will be supplied by the Apple Valley Ranchos Water Company (AVR).

The 2005 Urban Water Management Plan (UWMP) prepared by AVR indicates that there are sufficient water supplies available to meet existing and planned future demands during a normal, single, and multiple dry year period through 2025. The AVR UWMP (2005) includes an assessment of future development within AVR's service area based on anticipated regional population growth. Although the UWMP does not specifically include development of the proposed project, a portion of the projected population growth assumed in the UWMP could include water demands generated by the proposed project. Nonetheless, the WSA quantifies future demand for existing and planned future developments (North Apple Valley Industrial Specific Plan) in addition to demands projected in AVR's UWMP. As shown in tables 5, 8, 9, 10,

11, 12, and 13 of the WSA prepared for the project (see Appendix K), water demand for the proposed project is anticipated to be met during normal, dry, and multiple dry years through 2030 without adversely affecting groundwater supplies.

As discussed in the WSA and the Water Resources Study, SWP water is imported by MWA to replenish groundwater supplies. Due to changing climatic, political, and environmental conditions, as well as aging infrastructure, year-to-year SWP deliveries in the long-term are difficult to predict. However, considering existing and future conditions that may impact SWP deliveries, the Department of Water Resources (DWR) published the 2007 Reliability Report, which sets forth a long-term average annual SWP delivery of 66 to 69 percent of allocations. Although this allocation percentage is reduced from the previously projected average of 77 percent that was utilized in the 2005 UWMP, the Water Resources Study reports that assuming demand consistent with Agricultural Scenario 2, as set forth in the UWMP, and total supplies of 117,800 acre-feet per year (natural inflows of 65,500 acre feet plus 69 percent of imported SWP water), the Mojave Basin Area would have a surplus of 2,800 acre-feet.

The proposed project's estimated water consumption at buildout of 1,331 acre feet per year represents 0.14 percent of the estimated groundwater stored in the Alto Subarea (960,000 acre-feet) and 1.5 percent of the 2008 total verified production for the Alto Subarea (89,700 acre-feet). Therefore, implementation of the proposed project is not expected to substantially deplete groundwater supplies or interfere with groundwater recharge.

It should be reiterated that as the Watermaster for the adjudicated basin, MWA is responsible for managing water supplies, assessing the need for replacement water, and importing State Water Project water to assure that the entire Mojave Basin, including the Alto Subarea, is brought to a state of balance between groundwater inputs and production. As discussed in the WSA and the Water Resources Study, the Watermaster publishes annual reports in addition to the UWMP and the Regional Water Plan in order to plan for and assess water demands and supplies within the adjudicated basin including the Alto Subarea.

The availability of water supplies for AVR to meet the demand associated with the proposed project is dependent upon MWA's ability to manage the basin and to implement additional water projects and management actions necessary to continue to recharge the groundwater basin, maintain groundwater levels, and protect groundwater quality. Implementation of Mitigation Measures HYD-8 through HYD-12 as identified below and PSU-7 and PSU-8 as identified in Chapter 3.10, *Public Services and Utilities*, of this EIR will help to offset the additional water demand generated by the proposed project and assure that groundwater supplies are not adversely impacted. Therefore, development of the proposed project will not significantly deplete groundwater supplies or interfere substantially with groundwater recharge.

Offsite Improvements

Groundwater supplies will not be substantially impacted by the proposed offsite improvements nor will groundwater recharge be impacted. The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Water pipelines would also be constructed within the right of way.

The project also includes the development of two (2) potential offsite water tank/reservoir areas for potable and reclaimed water storage. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range. These offsite improvements are not expected to impact groundwater supplies or groundwater recharge.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers the option of constructing a golf course within Villages A and B. The Specific Plan outlines the following project design features in an effort to reduce water consumption:

- The golf course may not be irrigated with potable water or groundwater; Irrigation shall only come from reclaimed or recycled sources;
- Water features/hazards are prohibited except for ponds utilizing treated effluent for irrigation;
- Turf area shall be limited to 5.5 acres per hole; and
- Drought tolerant or native plants and/or gravel or native soils shall be used except for tee boxes, fairways, and greens.

These project design features assure that groundwater supplies are not utilized for irrigation of the golf course. Rather, reclaimed water from collected and treated effluent will be used to irrigate turf areas associated with the golf course overlay. Therefore, development of the golf course overlay will not significantly deplete groundwater supplies or interfere with groundwater recharge.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. With the

implementation of project specific design features and those mitigation measures set forth below, the Equestrian Overlay, in conjunction with rest of the project, would not result in significant impacts to groundwater supplies or interfere with groundwater recharge.

HYD-8: **Native and other appropriate drought-tolerant plant materials shall be used in all non-turf areas of project landscaping, and inorganic landscape materials, including boulders, cobble, gravels and crushed granitic materials shall be used throughout the landscape to help naturalize the design, provide additional structure and pattern to the landscape, and eliminate the need for water in these areas.**

HYD-9: **Large expanses of lawn and other non-functional water-intensive landscaped areas shall be prohibited. Turf areas shall be kept to the minimum necessary and consistent with the functional and aesthetic needs of the project.**

HYD-10: **Onsite irrigation shall consist of an efficient system that avoids or minimizes runoff and maximizes effective watering of plant roots. Drip emitters, moisture detectors and computer-controlled (et controller) systems shall also be installed to increase irrigation efficiency.**

HYD-11: **The use of low-flush toilets, water-conserving shower heads, appliances, and faucets shall be required in conformance with Section 17921.3 of the Health and Safety Code, Title 20, California Code of Regulations Section 1601(b), and applicable sections of Title 24 of the State Code.**

HYD-12: **Project development shall anticipate the availability of tertiary-treated water and install conveyance and delivery pipelines to those open space areas that will utilize this resource.**

Drainage Patterns

3.7-3 *Implementation of the proposed project may 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 which would result in substantial erosion or siltation on- or off-site.* **Level of Significance: Less Than Significant Impact with Mitigation.**

Onsite Improvements

The project site is located within unincorporated San Bernardino County, and this area does not have a drainage master plan. The entire site is tributary to Fairview Creek. Fairview Creek traverses west through the project site and exits at Cahuilla Road and eventually terminates at the Apple Valley Dry Lake in Apple Valley approximately six (6) miles west of the project site.

Any site development or construction of new facilities has the potential to alter existing drainage patterns, primarily due to runoff from construction activities, increase in impervious surfaces, and vegetation removal. Naturally and artificially induced changes to the characteristics of a drainage basin or flood plain of a stream or river can affect the extent and severity of any particular flood.

The project would include grading. Larger lot subdivisions (3/4 acre and larger) would be graded so as to avoid significant impacts to existing conditions. Lots greater than ¾ acre would not be mass graded or cleared of all native vegetation, including Joshua Trees. Disturbance would be limited to the installation of building pads, driveways, landscaping, or other reasonable uses associated with the primary land uses including utility routes and fire clearance areas. Smaller lot subdivisions would be graded using standard grading techniques as required for earthwork balance, infrastructure improvements, and usable private yard areas. Grading would be performed on a phased basis to minimize impacts such as erosion and air pollution from windborne dust. It is anticipated that grading would be contained within the project boundaries. Overall grading plans would be designed so no import or export from the site would be required. Interim stockpiles would be permitted pursuant to County standards, but would be maintained to reduce windborne dust.

Short-term construction impacts of runoff due to alteration of existing drainage patterns could be reduced with the implementation of BMPs during planned construction activities onsite. During construction, sandbag barriers are typically placed around the perimeter of an area being graded to prevent dirt and sediment- laden storm runoff from exiting a site. Sandbags are also placed along swales, at the toe of slopes, and around storm drain inlets to reduce the erosive velocity of storm runoff and to promote the settling of sediment out of the flow. Storm runoff is directed to inlets that are protected by filter fabrics to screen out sediment before it enters the storm drain system. For larger areas of disturbed earth, a sediment basin may be installed in which the storm runoff ponds allow for settlement of the sediment to occur. An outlet pipe is set at the top of the ponded water for discharge of clean storm water. A stabilized construction entrance usually consists of a layer of heavy gravel that drains well to prevent mud conditions and helps to knock mud off the construction vehicle tires as they exit the site. A wheel wash may also be installed to remove mud from tires.

Long-term impacts of runoff due to alteration of existing drainage patterns would occur as a result of the proposed project. Project components, such as paved parking lots, building structures, and rights-of-way proposed as part of the project, would increase the rate and amount of surface runoff. Although this increase could potentially result in flooding both on- and off-site, all flows currently received by the property and all flows from the project area would be directed into on- and off-site water conveyances and would flow into a series of proposed on- and off-site detention basins, thus mitigating some of the flood risks related to drainage issues to a level that is less than significant.

Implementation of BMPs would prevent or minimize impacts to drainage due to runoff and ensure that discharges during the construction phase would not cause or contribute to any exceedances of water quality standards in the receiving waters. BMP selection is ultimately guided by the *California Stormwater Best Management Practice Handbooks for Construction Activity*, *American Society of Civil Engineers Urban Runoff Quality Management*, and the *Water Environment Federation Manual of Practice No. 23 and 87*. In addition, a Notice of Intent (NOI) would be prepared and submitted to the RWQCB providing notification and intent to comply with the General NPDES Permit. Preparation and approval of a project-specific SWPPP is included as mitigation to address construction-related drainage impacts.

In addition to implementation of the mitigation measure identified above, BMPs and regulatory compliance, multiple onsite and off-site infrastructure would be constructed to mitigate the impacts to drainage. The proposed drainage facilities would contribute to the reduction of pollutants in runoff by allowing sedimentation of particles and infiltration, thus reducing flows as well as pollutant load. Flood protection would be assured through a system of channels, levies, pipes, flood walls, detention basins, and recreational water features. The recreational water features would serve as integral components of the overall drainage system. The Specific Plan would mitigate the effect of increased runoff from project development to downstream property owners. Increased runoff would be mitigated with the use of detention basins, which, along with the implementation of Mitigation Measures HYD-1 through HYD-7, would reduce potential impacts to a level of less than significant.

Offsite Improvements

Long-term drainage impacts could result from the development of offsite infrastructure. These impacts would be mitigated with the implementation of BMPs required by the SWPPP, as well as the mitigation measures defined above.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would result in drainage impacts similar to those identified above. Implementation of Mitigation Measure HYD-7 would reduce impacts to a level of less than significant.

Equestrian Overlay

Implementation of the Equestrian Overlay would result in drainage impacts similar to the project as described above. Implementation of Mitigation Measure HYD-7 would reduce impacts to a level of less than significant.

Surface Runoff

3.7-4 *Implementation of the proposed project may 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 that would result in flooding on- or off-site.* **Level of Significance: Less Than Significant Impact with Mitigation.**

Onsite Improvements

As discussed in Impact Discussion 3.7-3 above, the proposed condition of the project site would alter the existing drainage pattern of the site through the re-routing of an existing natural drainage channel, and through an increase in the amount of impervious surfaces through the construction of new streets, sidewalks, and structures. As a result, there would be changes to the absorption rates, drainage patterns, and the corresponding rate and amount of surface runoff, which could potentially result in flooding on- or off-site. The Hacienda at Fairview Valley Specific Plan Drainage Report demonstrates that while the proposed condition would result in increased peak flow, the new detention basins would detain the proposed flows to 90 percent of the existing, pre-developed flows.

It should be noted that landscaping and other design features, including project-specific BMPs would act to reduce the velocity of flows and encourage infiltration before runoff enters the storm drain system. Implementation of Mitigation Measures HYD-1 through HYD-7, as identified above, would reduce potential impacts on flooding due to surface runoff by requiring that a hydrology report demonstrate adequate conveyance and capacity for surface runoff, and that BMPs be implemented that would slow runoff flows. With implementation of project design features, in addition to compliance with the requirements of the General Permit, potential impacts on flooding due to surface runoff would be reduced to a less than significant level.

Offsite Improvements

Long-term runoff impacts could result from the development of offsite infrastructure. These impacts would be mitigated to a level of less than significant with the implementation of BMPs required by the SWPPP, as well as the mitigation measures defined above.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would result in surface runoff impacts similar to those identified above. Implementation of mitigation measures would reduce impacts to a level of less than significant.

Equestrian Overlay

Implementation of the Equestrian Overlay would result in surface runoff impacts similar to those identified above. Implementation of mitigation measures would reduce impacts to a level of less than significant.

Runoff Water

3.7-5 *Implementation of the proposed project may 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.* **Level of Significance: Less Than Significant Impact with Mitigation.**

Onsite Improvements

As discussed previously, future development proposed as part of the project project, including both onsite and offsite infrastructure, would result in changes to the absorption rates, drainage patterns, and the corresponding rate and amount of surface runoff of the existing project area. The proposed land uses would be located in previously undisturbed areas, and would result in new impervious surfaces that would generate additional stormwater flows. However, construction resulting from the implementation of the Specific Plan would occur concurrently with upgrades to drainage and stormwater facilities.

Short and long-term impacts of the proposed project include increases in stormwater runoff as a result of creating impervious surfaces associated with the construction of residential, commercial, recreational, and institutional uses associated with the Hacienda at Fairview Valley Specific Plan (i.e., roadways, paved parking lots, building roofs/structures, etc.). The result of this would be a decrease in infiltration of rainfall into the soil and an increase in the rate and total volume of stormwater runoff produced by the project site. These flows could be expected to contain increased minor amounts of oil, grease, organics, pesticides and debris from the more urbanized use of the project area. As proposed, the project would construct a backbone storm drain system that would accommodate all onsite run off, reducing flows offsite to pre-development levels.

With the implementation of the detention basins identified above and illustrated on Exhibit 2.10-10 *Conceptual Storm Drain and Basins Plan,* peak flow rates at the crossing of the two (2) watersheds with Cahuilla Road would be reduced, as identified in Table 3.7-2, *Peak Flow Rates*.

Table 3.7-2:
Peak Flow Rates

Flow Rates	Westerly Watershed	Fairview Creek Watershed	Both Watersheds Combined
Pre-Developed Condition Peak Flow Rate	1,205 cfs	10,926 cfs	12,131 cfs
Reduced Pre-Developed Condition Peak Flow Rate[1]	1,187 cfs	10,762 cfs	11,949 cfs
Developed Condition Peak Flow Rate	351 cfs	10,760 cfs	11,111 cfs

Source: Allard Engineering, *Hacienda at Fairview Valley Specific Plan Drainage Report,* June 2009
[1]The County Basin Policy requires the developed condition peak flow rate to be no more than 90 percent of the pre-developed condition peak flow rate. The entire watershed is approximately 10,205 acres of which the site is approximately 1,557 acres. Therefore, the project is approximately 15.3 percent of the watershed. Applying 90 percent to the 15.3 percent portion of the watershed and 100 percent to the remaining 84.7 percent of the watershed, an effective reduction to the entire pre-developed condition peak flow rate is 98.5 percent.
cfs=cubic feet per second

The developed condition flow rate is 838 cubic feet per second (cfs) less than the required maximum allowable flow rate. The developed condition flow rate is 93 percent of the pre-developed condition flow rate.

In addition to implementation of BMPs and regulatory compliance, Mitigation Measures HYD-1 through HYD-7 would reduce the impacts to existing or planned stormwater drainage due to project-related stormwater runoff. The County engineer must confirm, before the issuance of grading permits, that the plans and specifications of on-site drainage are in compliance with NPDES permit requirements. With adherence to permitting regulations and the incorporation of Mitigation Measures HYD-1 through HYD-7, less than significant impacts would occur as a result of increased runoff.

Offsite Improvements

Long-term runoff impacts could result from the development of offsite infrastructure. These impacts would be mitigated to a level of less than significant with the implementation of BMPs required by the SWPPP, as well as the mitigation measures defined above.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would result in runoff water impacts similar to those identified above. Implementation of mitigation measures would reduce impacts to a level of less than significant.

Equestrian Overlay

Implementation of the Equestrian Overlay would result in runoff water impacts similar to those identified above. Implementation of mitigation measures would reduce impacts to a level of less than significant.

Water Quality

3.7-6 *Implementation of the proposed project may otherwise substantially degrade water quality.* **Level of Significance: Less Than Significant Impact with Mitigation.**

As previously discussed in Impact Discussion 3.7-1, above, the proposed project would provide effective water quality treatment. The implementation of BMPs that filter pollutants from stormwater would reduce impacts to water quality associated with polluted stormwater compared to the existing site. The project contains 299 residential lots of ¾ acre and larger. These lots are anticipated to utilize on-site septic tanks and associated leach lines for their sewer treatment. This method of sewer collection system is consistent with the majority of existing residences located in the vicinity of the project site. (Residential lots smaller than ¾ acre and commercial uses will connect to a wastewater collection system; therefore not utilizing septic tanks.) Lots utilizing septic tank systems will be required to meet all regulations of the County Health Department prior to issuance of permit and construction. These regulations are in place to protect groundwater resources and water quality from septic tank operation, among other reasons. The implementation of Mitigation Measures HYD-1 through HYD-7 would reduce potential impacts on water quality and stormwater discharge to a less than significant level by preventing construction-related erosion and reducing pollutants in stormwater discharges from the site to the maximum extent practicable.

Flood Hazards, Flood Maps

3.7-7 *Implementation of the proposed project may 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 or place within a 100-year flood hazard area structures that would impede or redirect flood flows.* **Level of Significance: Less Than Significant Impact.**

The project site and proposed offsite improvements are located in a Flood Insurance Rate Map Zone D, which is defined as an area of undetermined flood hazards. Therefore, the project would not place unprotected housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or any other flood hazard delineation map. Less than significant impacts would occur in this regard.

Flood Hazards, Flood Flows

3.7-8 *Implementation of the proposed project may place within a 100-year flood hazard area structures that would impede or redirect flows.* **Level of Significance: Less Than Significant Impact.**

As stated above, the project site and proposed offsite improvements are located in a Flood Insurance Rate Map Zone D, which is defined as an area of undetermined flood hazards. Therefore, the project would not place unprotected housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or any other flood hazard delineation map. Less than significant impacts would occur in this regard.

Flooding

3.7-9 *Implementation of the proposed project may 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.* **Level of Significance: Less Than Significant Impact with Mitigation.**

The project site and proposed offsite improvements are not located within any identified path of potential inundation flow that might result in the even of a dam or levee failure or that might occur from a river, stream, lake, or sheet flow rupture. Therefore, less than significant impacts would occur in this regard. The project contains a maximum of three (3) water tank/reservoir areas for potable and reclaimed water storage. The exact quantity, size and location of these tanks will be determined during subsequent tract map processes by Village Phase. By their nature, water tanks are located at elevations higher than the homes and other uses they provide water to. Due to this, there is always potential for water tank failure and therefore flooding as a

result. With the implementation of Mitigation Measure HYD-13, a less than significant impact would occur in this regard.

HYD-13: **During Final Tract Map preparation, when final water tank locations are determined, Applicant shall provide a grading and improvement plan which provides a safe outlet and route of discharge for water inundation in the unlikely event of water tank failure; these shall be prepared by a licensed engineer in coordination with Apple Valley Ranchos (AVR) Water Company and subject to County Public Works approval.**

Seiche, Tsunami, or Mudflow

3.7-10 *Implementation of the proposed project may result in inundation by seiche, tsunami, or mudflow.* **Level of Significance: Less Than Significant Impact.**

The project site and proposed offsite improvements are not adjacent to any body of water that has the potential of seiche or tsunami. The project site is relatively flat and therefore has little potential for mudflow. Less than significant impacts would occur in this regard.

3.7.4 Analysis of Cumulative Impacts

The proposed project, in combination with other cumulative projects, would result in increased degradation of surface water quality and storm drain capacity impacts. Compliance with Federal, State, and local requirements on a project-by-project basis would reduce cumulative impacts to a less than significant level.

The *General Plan EIR* analyzed the long-term development of the County of San Bernardino and found that no significant impacts relative to hydrology and water quality would occur with implementation of the *General Plan* as the County's hydrology and water quality systems would be upgraded, constructed, and implemented as development occurs.

As stated above, the Water Supply Assessment is a cumulative analysis in that it considers the project's impacts to groundwater supplies in addition to existing and planned future water users. As reported above and stated in the WSA and Water Resources Study, with implementation of mitigation measures and those project-specific design features intended to minimize water demands onsite, cumulative impacts to groundwater supplies or groundwater recharge will be reduced to less than significant levels.

CHAPTER 3.8

LAND USE AND PLANNING

3.8. LAND USE AND PLANNING

The purpose of this section is to identify existing land use conditions, analyze the proposed project's compatibility with existing land uses and consistency with relevant planning policies, and recommend mitigation measures to avoid or minimize the significance of potential impacts.

Information in this section is based on site surveys conducted by RBF Consulting in August 2008. RBF also utilized ground and aerial photographs for the onsite and surrounding land use analysis, as well as the *County of San Bernardino General Plan* (March 2007) and the *County of San Bernardino General Plan EIR* (February 2007) and the County of San Bernardino Development Code (amended February 2008).

3.8.1 EXISTING CONDITIONS

The 1,557 acre project site lies within Fairview Valley, which is located within unincorporated San Bernardino County. The Town of Apple Valley's incorporation boundary is two miles west of the project site. The Specific Plan area is located within Apple Valley's Sphere of Influence. The County *General Plan* currently designates the entire Specific Plan area as Rural Living, ranging from one dwelling unit (DU) per five (5) acres in the western portion of the site to one (1) DU per 40 acres in the most easterly portion. The areas abutting the Specific Plan are designated by the *General Plan* as Rural Living and Resource Conservation.

Site Characteristics

The project site is bound to the north by the Fairview Mountains, and to the south and east by the Granite Mountains. Within the valley of the Fairview and Granite Mountains, much of the topography is relatively flat, with less than a five (5) percent slope. The project site consists of vacant land. Portions of the project site are extensively disturbed due to historic ranching/grazing activities and present day off road vehicle use. The project site has also been used for dry farming and mining. Elevations onsite generally decrease from the southeast to the north and west. The Granite Mountains have steep slopes and rocky terrain. The project site is bisected by Fairview Creek, which traverses in a northeast to southwest direction parallel to Cahuilla Road. A second drainage course extends from the southeast and merges into Fairview Creek. According to the National Hydrology Dataset, there are three ephemeral streams identified in nearby watersheds that bisect the project site. In general, the streams flow in a northwesterly direction and join at Fairview Creek.

Surrounding Land Uses

The majority of land uses in the vicinity of the project site are rural residential and vacant land. Table 3.8-1, *Surrounding Land Uses*, depicts the existing land uses surrounding the project site.

Table 3.8-1:
Surrounding Land Uses

Area	Existing Land Use	Land Use Zoning District
North	Single Residential, Open Space (BLM)	RL-5, RL-20, RL-40
South	Single Residential, Open Space (BLM)	RL, RC
East	Single Residential, Open Space (BLM)	RL-20, RL-40, RC
West	Single Residential	RS-1

The Town of Apple Valley is located west of the project site, and is the closest populated area to the project site.

3.8.2 REGULATORY SETTING

County of San Bernardino *General Plan*

California State planning law requires each City and County to adopt a comprehensive, long-term general plan for the physical development of the area within its jurisdiction and of any land outside its boundaries that bears relations to its land use planning activities. The County *General Plan,* adopted in 2007, is a long-range policy-planning document that defines the framework by which the County's physical and economic resources are to be managed over time. The goals and policies contained in the County *General Plan* are provided to guide the County's decision-makers. The seven State-mandated elements are included in the County *General Plan*, including Land Use, Circulation, Housing, Conservation, Open Space, Safety, and Noise. In addition, the County has chosen to address Economic Development, which is an optional element. The following elements are relevant to the proposed project:

Land Use Element

The Land Use Element is part of the County *General Plan* and provides policy direction for each land use designation, and also provides overall land use policies for the County. According to the County *General Plan*, the purpose of the Land Use Element is to act as a guide for the

County's future development. The Land Use Element designates the distribution and general location of land uses, such as residential, retail, industrial, open space, recreation, and public areas. The Land Use Element also addresses the permitted density and intensity of the various land use designations as reflected on the County's *General Plan* Land Use Diagram. The Land Use Element sets forth specific goals, objectives, policies, and actions to guide land use for the County.

Resource Conservation (RC) Designation

The Resource Conservation designation is applied to areas generally distant from urban centers, with limited access and steep terrain, have high scenic values, limited or no infrastructure facilities, and where development rights have been transferred to other areas via development approvals and set aside for open space and recreation uses.

Rural Living (RL) Designation

The Rural Living designation is applied to areas generally adjacent to urbanizing centers, limited, low-density development, rural residences as the primary use of land, and partial public services and limited public improvements. The purpose of this designation is to encourage appropriate rural development for primarily single-family residential uses.

Single Residential (RS) Designation

The Single Residential designation is applied to areas that are not adjacent to regional industrial or agricultural districts, and areas that are within one mile of major arterial and/or existing major public transit routes. The purpose of this designation is to provide areas for single-family homes on individual lots, provide areas for accessory and non-residential uses that complement single residential neighborhoods, and to discourage incompatible non-residential uses in single-family residential neighborhoods.

Neighborhood Commercial (CN) Designation

The Neighborhood Commercial (CN) designation is applied to areas adjacent or in close proximity to residential districts/uses, areas adjacent to a major arterial streets, and areas with less than 20 percent slopes. The purpose of this designation is to provide suitable locations for retail and service commercial establishments intended to meet daily convenience needs.

Specific Plan (SP) Designation

The Specific Plan designation is applied to areas that need or require special planning studies. The purpose of this designation is to designate an area that encompasses the boundaries of an

adopted specific plan and to allow joint planning efforts among adjacent land owners and jurisdictions.

Open Space (OS) Designation

The Open Space designation is applied only to land that is legally constrained from future development. The purpose of this designation is to maintain open space on property legally constrained by deed restrictions.

Goals, Objectives, Policies Relevant to the Proposed Project

The Land Use Element contains many goals, objectives, policies, and actions related to the balanced and orderly pattern of growth that applies to the proposed project. The following are the most relevant of these goals, objectives, and policies:

Goal LU 1: The County will have a compatible and harmonious arrangement of land uses by providing a type and mix of functionally well integrated land uses that are fiscally viable and meet general social and economic needs of the residents.

Policy LU 1.2: The design and siting of new development will meet locational and development standards to ensure compatibility of new development with adjacent land uses and community character.

Policy LU 1.3: Promote a mix of land uses that are fiscally self-sufficient.

Policy LU 1.4: Encourage preservation of the unique aspects of the rural communities and their rural character.

Goal LU 2: Residential land uses will be provided in a range of styles, densities, and affordability and in a variety of areas to live, ranging from traditional urban neighborhoods to more "rural" neighborhoods.

Policy LU 2.1: Promote varied approaches to residential development to foster a variety of housing types and densities and more efficient use of the land.

Policy LU 2.2: When more intensive development is proposed adjacent to developed large lots, new development shall be required to prove adequate buffering so that compatibility between rural residential uses and more urban uses may be maintained.

Goal LU 3: The unincorporated communities within the County will be sufficiently served by commercial land uses through a combination of commercial development within the cities and unincorporated communities.

Policy LU 3.1: Protect areas best suited for commercial uses by virtue of their location, access to major arterials, and availability of infrastructure and other utilities, from incompatible uses.

Goal LU 6: Promote, where applicable, compact land use development by mixing land uses, creating walkable communities, and strengthening and directing development towards existing communities.

Policy LU 6.1: Mixed use developments will be encouraged in unincorporated areas of the County for projects that have adequate acreage to accommodate different land uses while providing buffers and other mechanisms to minimize or avoid land use conflicts.

Goal LU 7: The distribution of land uses will be consistent with the maintenance of environmental quality, conservation of natural resources, and the preservation of open spaces.

Policy LU 7.2: Enact and enforce regulations that will limit development in environmentally sensitive areas, such as those adjacent to river or streamside areas, and hazardous areas, such as flood plains, steep slopes, high fire risk areas, and geologically hazardous areas.

Goal LU 9: Development will be in a contiguous manner as much as possible to minimize environmental impacts, minimize public infrastructure and service costs, and further countywide economic development goals.

Policy LU 9.2: Discourage leap-frog development and urban sprawl by restricting the extension or creation of new urban services or special districts to areas that cannot be sustained in a fiscally responsible manner.

Program LU 9.2: Consider the adoption of regulations and plans, whenever possible, such as the adoption of overlays, specific plans, zoning studies, infrastructure support plans, and other appropriate mechanisms that encourage annexation and the use of city standards within sphere of influence areas.

Policy LU 9.3: In order to ensure a logical land use pattern for specific areas and to minimize review time on environmental and design issues for submitted applications, discourage General Plan Land Use Zoning District Amendments that are submitted without a concurrently filed development project.

Policy LU 9.4: Ensure land use proposals in sphere of influence (SOI) areas receive appropriate review.

Goal LU 10: Encourage distinct communities with a sense of place and identity.

Policy LU 10.1: Adopt community plans with goals, policies, and programs to recognize unique characteristics, issues, and opportunities for communities within the County.

Goal D/LU 1: Maintain land use patterns in the Desert Region that enhance the rural environment and preserve the quality of life of the residents of the region.

Policy D/LU 1.3: Utilize Rural Living (RL) areas to buffer Resource Conservation areas from more intensive land uses.

Goal D/LU 2: Establish locational criteria for future development within the region to ensure compatibility between uses and with the character and vision that is desired for the region.

Policy D/LU 2.1: Provide transitional uses and buffer incompatible uses such as residential and commercial uses and environmentally sensitive areas.

County of San Bernardino Development Code

The *County of San Bernardino Development Code* (*Development Code*) establishes that Specific Plans can be created to allow the implementation of special development standards for specified areas. When a specific plan is adopted, it would supersede any conflicting provisions of the *Development Code*, unless otherwise specifically stated in the Specific Plan.

Town of Apple Valley *General Plan*

The *Town of Apple Valley General Plan (1998)* includes policies addressing community development and land use. The project site is located within unincorporated San Bernardino County. However, the project is located within the Town of Apple Valley Sphere of Influence (SOI). The Project Applicant is not initiating proceedings for annexation into the Town of Apple Valley. Therefore, this Draft EIR analyzes the proposed project's consistency with the County of San Bernardino *General Plan*, pursuant to *CEQA Guidelines* Section 15125 (d). The Town's pre-zone and pre-General Plan deferred the land use designations identified by the County of San Bernardino. The Town of Apple Valley is currently revising its *General Plan*. As a result, the Town may adopt new land use designations in its Sphere of Influence. Environmental impacts associated with inconsistency with County of San Bernardino *General Plan* policies are addressed under the impact discussions of this Draft EIR.

Air Quality Management Plan

The project site is located in the Mojave Desert Air Basin (MDAB) within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The Basin encompasses portions

of San Bernardino County, as well as portions of Los Angeles, Kern, and Riverside counties. The MDAB is responsible for controlling emissions from stationary sources of pollution, such as large power plants, refineries and gas stations. In 1994, the MDAQMD adopted the Mojave Desert Planning Area-Federal Particulate Matter Attainment Plan, which includes control measures to reduce dust emissions from construction activities. The MDAQMD later adopted the 2004 Ozone Attainment Plan. In addition, in December 2006, the MDAQMD issued a document entitled CEQA and Federal Conformity Guidelines.

3.8.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *CEQA Guidelines*. For the purposes of this analysis, an impact on land use and planning is considered significant if the project would:

- 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.
- Physically divide an established community.

Environmental Impacts and Mitigation Measures

Divide a Community

3.8-1: *Implementation of the proposed project may physically divide an established community.* **Level of Significance: Less Than Significant Impact.**

An example of a project that has the potential to divide an established community includes the construction of a new freeway or highway through an established neighborhood. The project site abuts public open space that is managed by the Bureau of Land Management (BLM). In addition, single-family homes and vacant lots surround the project site. The project proposes residential, commercial, and open space uses. Development of the proposed project would occur in four master phases, based on future development patterns and existing and future availability of infrastructure. Streets, emergency vehicle access, utilities, and off-site improvements would be constructed as part of each corresponding phase. The phasing plan does not prohibit the simultaneous development of more than one phase of development. The phasing would begin with Village A, located in the western portion of the project site, and would therefore eventually connect each phase of development together. Each overall phase would be designed as independent of other phases and subsequent phases could commence

prior to the completion of previous phases. While the proposed project would have a higher density than the surrounding rural single-family residential land uses, this attribute would not inherently create a physical division in the surrounding area. Therefore, no impacts would occur in this regard as a result of the proposed project.

Plan Consistency

3.8-2: *Implementation of the proposed project may conflict with applicable land use plans, policies, or regulations 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.* **Level of Significance: Less Than Significant Impact.**

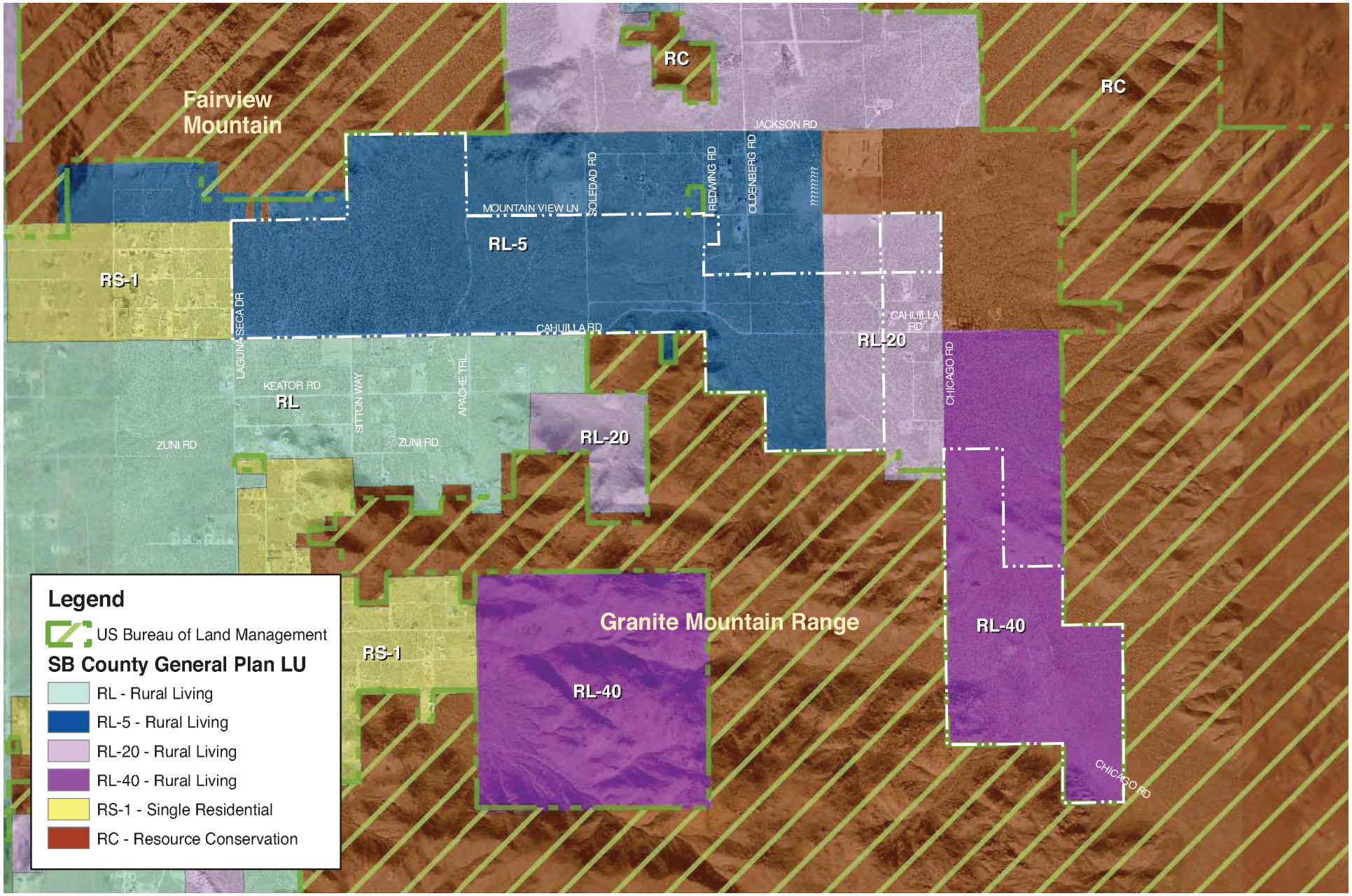
Onsite Improvements

In the context of CEQA, impacts relative to general plan consistency occur when a conflict with a *General Plan* goal, objective, policy, or action would result in an adverse physical change in the environment.

The proposed project would require a General Plan Amendment. The General Plan Amendment would allow the development of the Hacienda at Fairview Valley Specific Plan in accordance with the goals of the *General Plan* and increase allowable densities on the project site. The land use designation proposed for the project site is Specific Plan (SP). The County of San Bernardino *General Plan* (adopted in 2007) currently designates the project site as Rural Living (RL). Exhibit 3.8-1, *Existing General Plan Land Use Designations,* illustrates the general location and relationship of all of the primary land use areas within this land use designation. Exhibit 2.0-5, *Conceptual Land Use Plan* in Chapter 2 of this Draft EIR would be used to amend the General Plan Land Use Map and would serve as the main reference to guide future planning work within the project site.

The General Plan Amendment for the Hacienda at Fairview Valley Specific Plan would include the following land uses:

Rural Living (RL-2): The RL-2 designation would consist of large single-family lots two (2) acres or greater. This designation would provide an opportunity for rural living and a transition to adjacent existing development and future land uses. This designation would support the boarding of horses.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

EXISTING GENERAL PLAN LAND USE DESIGNATION MAP

Exhibit 3.8-1

This page was intentionally left blank

Estate Residential (RS-1): The RS-1 designation would consist of large single-family lots one (1) acre or greater. This designation would provide an estate feel along major public roads and a transition to adjacent existing development. The RS-1 designation is planned for residents who would like a large lot but does not allow horse boarding. The RS-1 designation in portions of the four (4) villages could also have an Equestrian Overlay (EO) designation that permits the boarding of horses.

Equestrian Estate Residential (R-EQ): The R-EQ designation would consist of larger single-family lots one (1) acre or greater. This designation would provide an estate feel along major public roads and a transition to adjacent existing development. This land use designation is planned to support equestrian activities and would be zoned to solely permit equestrian residential development.

Very Low Residential (VL): The VL designation would consist of single-family lots 32,500 SF or greater. This designation would be planned to have an estate ranch neighborhood theme and would not support the boarding of horses.

Low Residential (L): The L designation would consist of single-family lots 7,000 SF and greater. Lots in this designation would be deed restricted for active adult use.

Low-Medium Residential (LM): The LM designation would consist of single-family lots 6,000 SF and greater. The lots in this designation would be deed restricted for active adult use.

Medium Residential (M): The M designation would consist of single-family lots 5,000 SF and greater. The lots in this designation would be deed restricted for active adult use.

Medium-High Residential (MH): The MH designation would consist of single-family lots 4,000 SF and greater. The MH designation could also include single-family attached units. The lots in this designation would be deed restricted for active adult use.

Commercial (CN): The CN designation would consist of approximately 15 acres of land, the majority of which is located in Village A near Laguna Seca Drive and Cahuilla Road to serve as a community shopping area. Retail and food services incidental to each Village Commons may be included within each of the clubhouses.

Open Space Recreation (OS-R): This designation would support active and passive recreation areas such as gardens, lawn bowling, putting greens, sports courts, detention basins, clubhouses, and pools.

Open Space Conservation (OS-C): This designation would support areas that have been identified to maintain a more natural environment in order to effectively transition land uses into the Granite Mountains and Fairview Creek. The intent is to integrate the natural

environment into each Village. Most areas would designate existing natural features or support transitional areas from the community toward more sensitive natural areas. This designation also supports detention basin locations that function for flood control but remain as open space. Desert-oriented landscaping would support the transition into natural areas.

In addition, two (2) overlay districts are proposed as part of the Specific Plan. The overlay districts are designed to provide expanded flexibility in the overall Village concept by diversifying recreational opportunities and lifestyles. Descriptions of the overlay districts are as follows:

Golf Overlay (GO): The Golf Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B.

Equestrian Overlay (EQ): The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots one (1) acre or greater in portions of Village B, C, and D. The Equestrian Overlay is designed to allow equestrian residential development adjacent to the smaller lot active adult development when such development meets additional development standards related to setbacks, fencing and trails. The Equestrian Overlay would allow up to three (3) horses per residential lot.

The proposed project is intended to meet the County *General Plan* goals, objectives, policies, and actions related to the balanced and orderly pattern of growth that apply to the proposed project, and as identified in Section 3.8.2, *Regulatory Setting*.

Table 3.8-2, *General Plan Consistency Analysis*, describes the methods in which the proposed project would be consistent with the County *General Plan* goals and policies relative to land use and relevant planning.

Table 3.8-2:
General Plan Consistency Analysis

General Plan Goals and Objectives	Plan Consistency
Goal LU 1: *The County will have a compatible and harmonious arrangement of land uses by providing a type and mix of functionally well integrated land uses that are fiscally viable and meet general social and economic needs of the residents.*	**Consistent:** The proposed project consists of a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. It provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and about 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space.

General Plan Goals and Objectives	Plan Consistency
Policy LU 1.2: *The design and siting of new development will meet locational and development standards to ensure compatibility of new development with adjacent land uses and community character.*	**Consistent:** The Hacienda at Fairview Valley Specific Plan establishes standards for all development within the project site to make new development compatible with existing and surrounding land uses.
Policy LU 1.4*:* *Encourage preservation of the unique aspects of the rural communities and their rural character.*	**Consistent:** The design of the project is meant to retain the area's aesthetic quality by preserving the natural topographic features that surround the Fairview Valley. The project would incorporate the existing desert terrain through the use of transitional landscape programs such as parkway landscaping, edge treatments along residential properties, and preserving natural drainages. The existing Joshua trees are also envisioned to be retained and become a component to the master landscape plan. The proposed project would further maintain a rural character by providing residential land use designations for low density development as visible from adjacent communities, with many homes on properties of 1 to 2 acres or more. Equestrian residential uses would enhance the rural character of the area.
Goal LU 2*:* *Residential land uses will be provided in a range of styles, densities, and affordability and in a variety of areas to live, ranging from traditional urban neighborhoods to more "rural" neighborhoods.*	**Consistent:** The proposed project aims to provide diversified housing and to create a community where multi-generational housing and lifestyles are available. The project proposes eight (8) residential land use categories including large lot residential areas, standard lot residential areas, active adult areas, and opportunities for equestrians, thereby providing for a range of densities and lifestyles.
Policy LU 2.1: *Promote varied approaches to residential development to foster a variety of housing types and densities and more efficient use of the land.*	**Consistent:** The Conceptual Land Use Plan provides eight residential land use categories: 1.) Rural Living (RL-2): Single-family lots of two (2) acres or greater, supporting the board of horses. Provides an opportunity for rural living and a transition to adjacent existing development and future land uses. 2.) Estate Residential (RS-1): Single-family lots 1 acre or greater. Provides an estate feel along major public roads and a transition to adjacent existing development. 3.) Equestrian Estate Residential (R-EQ): Single-family lots 1 acre or greater. Supports equestrian activities. 4.) Very Low Residential (VL): Single-family lots 32,500 SF or greater, with an estate ranch neighborhood theme. 5.) Low Residential (L): Single-family lots 7,000 SF and greater. These lots would be deed restricted for active adult use. 6.) Low-Medium Residential (LM): Single-family lots 6,000 SF and greater, deed restricted for active adult use. 7.) Medium Residential (M): Single-family lots 5,000 SF and greater, deed restricted for active adult use. 8.) Medium-High Residential (MH): Single-family lots 4,000 SF and greater. Could also include single-family attached units.

General Plan Goals and Objectives	Plan Consistency
	All lots would be deed restricted for active adult use.
Policy LU 2.2: *When more intensive development is proposed adjacent to developed large lots, new development shall be required to prove adequate buffering so that compatibility between rural residential uses and more urban uses may be maintained.*	**Consistent:** In some areas the proposed project site abuts existing large residential lots. The proposed project designates low density residential and open space land uses along the site's boundaries in order to provide adequate buffering for all neighboring uses.
Goal LU 3: *The unincorporated communities within the County will be sufficiently served by commercial land uses through a combination of commercial development within the cities and unincorporated communities.*	**Consistent:** The proposed project designates 15 acres for retail/commercial use that would allow for the development of a neighborhood scale shopping center or a cluster of retail/commercial and medical uses to serve the proposed project and neighboring residential communities. Potential uses could include grocery store, retail, office, day care, and restaurant uses. This area could also include the development of public facilities, including a fire station, sheriff station, and/or post office annex to serve the project site and neighboring residential communities.
Policy LU 3.1: *Protect areas best suited for commercial uses by virtue of their location, access to major arterials, and availability of infrastructure and other utilities, from incompatible uses.*	**Consistent:** The proposed project identifies the optimum areas for commercial use and designates them as Retail/Commercial land use only. This designation would include public infrastructure. Therefore, zoning would preclude these areas from any other use.
Goal LU 6*: Promote, where applicable, compact land use development by mixing land uses, creating walkable communities, and strengthening and directing development towards existing communities.*	**Consistent:** The proposed project is designed to promote walkability. Land uses are mixed and specific landmarks are designed in a manner so that they are located roughly a quarter- or half-mile distance from various points within the site. Village A, the section of the project with the most residential units, also includes the neighborhood commercial center, and the potential for a golf course. Furthermore, the project would include a transit stop in each of the villages, allowing residents to easily reach other locations within the site without getting in their cars.
Policy LU 6.1: *Mixed use developments will be encouraged in unincorporated areas of the County for projects that have adequate acreage to accommodate different land uses while providing buffers and other mechanisms to minimize or avoid land use conflicts.*	**Consistent:** The 1,557-acre project site is located in a very rural area of unincorporated San Bernardino County. The project takes advantage of such space by providing a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and about 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space. Densities would be feathered with the highest-density land uses in the center of the project, and the lowest-density uses on the project's periphery. This layout would provide a buffer to surrounding lands.
Goal LU 7: *The distribution of land uses will be consistent with the maintenance of*	**Consistent:** The proposed project incorporates many open spaces into the site, especially where site boundaries interface

General Plan Goals and Objectives	Plan Consistency
environmental quality, conservation of natural resources, and the preservation of open spaces.	with undeveloped and environmentally sensitive land, to protect the natural resources of the area. The project proposes a total of 38 acres of parks and open space.
Policy LU 7.2: *Enact and enforce regulations that will limit development in environmentally sensitive areas, such as those adjacent to river or streamside areas, and hazardous areas, such as flood plains, steep slopes, high fire risk areas, and geologically hazardous areas.*	**Consistent:** The proposed project designates Open Space Conservation land uses in environmentally sensitive areas of the site. The OS-C designation would be given to existing natural features within each of the four villages, and to detention basin locations that function for flood control.
Goal LU 9: *Development will be in a contiguous manner as much as possible to minimize environmental impacts, minimize public infrastructure and service costs, and further countywide economic development goals.*	**Consistent:** The Town of Apple Valley and the City of Hesperia are located adjacent to the project site, and the site abuts many existing large residential lots. Development on the project site itself would be contiguous as well, making efficient use of the space within the site.
Policy LU 9.2: *Discourage leap-frog development and urban sprawl by restricting the extension or creation of new urban services or special districts to areas that cannot be sustained in a fiscally responsible manner.*	**Consistent:** The Specific Plan establishes a mix of uses that includes a range of residential housing types, a limited amount of local-serving retail commercial, a range of active and passive parks, and open space; and includes new infrastructure and utilities to serve the new uses.
Program LU 9.2: *Consider the adoption of regulations and plans, whenever possible, such as the adoption of overlays, specific plans, zoning studies, infrastructure support plans, and other appropriate mechanisms that encourage annexation and the use of city standards within sphere of influence areas.*	**Consistent:** The proposed project site is located within the Town of Apple Valley's sphere of influence. The Hacienda at Fairview Valley Specific Plan aims to establish development standards, and to provide local commercial and recreational services to further the town's goals.
Policy LU 9.3: *In order to ensure a logical land use pattern for specific areas and to minimize review time on environmental and design issues for submitted applications, discourage General Plan Land Use Zoning District Amendments that are submitted without a concurrently filed development project.*	**Consistent:** General Plan Land Use Zoning District Amendments will be filed currently with the proposed project.
Policy LU 9.4: *Ensure land use proposals in sphere of influence (SOI) areas receive appropriate review.*	**Consistent:** The proposed project site is located within the Town of Apple Valley's sphere of influence. Apple Valley is on the distribution list for all project-related documents, which keeps them informed and provides them the opportunity to comment at any time on project plans and proceedings.
Goal LU 10: *Encourage distinct communities with a sense of place and identity.*	**Consistent:** The proposed project would be comprised of four villages. Each village is defined by a cohesive theme and provides a mix of residential and non-residential uses, distinctive amenities, and community facilities. In addition, each village contains a Village Commons area that acts as a focal point. By subdividing the development into these four villages, the project aims to create a feeling of community and

General Plan Goals and Objectives	Plan Consistency
	identity among residents.
Policy LU 10.1: *Adopt community plans with goals, policies, and programs to recognize unique characteristics, issues, and opportunities for communities within the County.*	**Consistent:** The Hacienda at Fairview Valley Specific Plan proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The rural High Desert location provides an excellent setting for equestrian and active adult uses. Additionally, the Specific Plan takes advantage of the opportunity to support environmentally sensitive design practices in order to protect the unique characteristics of the area. Programs include the use of solar energy, alternative modes of transit, recycling, energy building conservation standards, and water conservation. The design of the project is meant to retain the area's aesthetic quality by preserving the natural topographic features that surround the valley.
Goal D/LU 1: *Maintain land use patterns in the Desert Region that enhance the rural environment and preserve the quality of life of the residents of the region.*	**Consistent:** Carefully planned land use designations and open spaces would incorporate the desert environment into the community.
Policy D/LU 1.3: *Utilize Rural Living (RL) areas to buffer Resource Conservation areas from more intensive land uses.*	**Consistent:** The land uses of the proposed project are arranged so that the highest density uses are located in the center of the site, and the lower density uses lie around the edges of the site. As a result, rural residential and open space uses are adjacent to the BLM land and other resource conservation areas that abut the site.
Goal D/LU 2: *Establish locational criteria for future development within the region to ensure compatibility between uses and with the character and vision that is desired for the region.*	**Consistent:** The Hacienda at Fairview Valley Specific Plan identifies criteria for all future development within the project site to ensure compatibility of uses regional character.
Policy D/LU 2.1: *Provide transitional uses and buffer incompatible uses such as residential and commercial uses and environmentally sensitive areas.*	**Consistent:** The Open Space Conservation (OS-C) land use designation would support areas that have been identified to maintain a more natural environment in order to effectively transition land uses into the Granite Mountains and Fairview Creek. Most areas would designate existing natural features or support transitional areas from the community toward more sensitive natural areas. This designation also supports detention basin locations that function for flood control but remain as open space. Desert-oriented landscaping would support the transition into natural areas.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the right of way. It is estimated that the overall distance affected by these improvements are

approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D. These improvements would occur to existing unimproved roads, and would therefore benefit the County by improving access and infrastructure in and out of the Fairview Valley area.

In addition, the project includes the development of two offsite reservoirs. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

Upon approval of the project and the General Plan Amendment, the project site would be rezoned as Specific Plan. When a specific plan is adopted, it would supersede any conflicting provisions of the *Development Code*, unless otherwise specifically stated in the Specific Plan. Therefore, impacts related to conflicts with the *Development Code* would be less than significant.

Overlay Districts

Golf Course Overlay

The Golf Overlay District would allow potential future developers an option of constructing a golf course within Villages A and B. With the approval of the Specific Plan and General Plan Amendment, the Golf Course Overlay would be consistent with applicable land use planning policies. Therefore, no significant impacts would occur.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on estate residential lots 1 acre or greater in portions of Village B, C, and D. With the approval of the Specific Plan and General Plan Amendment, the Equestrian Overlay would be consistent with applicable land use planning policies. Therefore, no significant impacts would occur.

Approval of the Hacienda at Fairview Valley Specific Plan and General Plan Amendment would reduce potential onsite impacts to a level of less than significant.

3.8.4 ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts analysis for land use and planning considered the larger-context of future development of the County as envisioned by the County *General Plan* and relied upon the projections of the County *General Plan* and *General Plan EIR*. Cumulative impacts to land use would be impacts that result from incremental changes in land use that would result in substantial disruption within the established community or conflicts with adopted plans and

policies related to avoidance or mitigation of environmental effects. Currently, the site is vacant. The area surrounding the site is either vacant or contains rural residential uses.

The County *General Plan EIR* analyzed the long-term development of the Desert Region and found that no significant impacts relative to land use and planning would occur with implementation of the County *General Plan*.

The proposed project would require a General Plan Amendment. The General Plan Amendment would allow the development of the Hacienda at Fairview Valley Specific Plan in accordance with the goals of the County *General Plan* and increase allowable densities on the project site. Approval of the proposed project Specific Plan and General Plan Amendment would reduce potential onsite impacts to a level of less than significant. As the County *General Plan* is the baseline for the evaluation of cumulative impacts and the project has been found to be in compliance with the County *General Plan* with the approval and implementation of the General Plan Amendment, no cumulative impacts relative to land use and planning are expected with implementation of the proposed project.

3.9 NOISE

The purpose of this section is to analyze project-related noise source impacts on-site and to surrounding land uses. This section evaluates short-term construction-related impacts, as well as future buildout conditions. Mitigation measures are also recommended to avoid or lessen the project's noise impacts. This discussion is based on the *Hacienda at Fairview Valley Noise Analysis,* prepared by Urban Crossroads, Inc., dated December 16, 2008 (refer to Appendix I, *Noise Analysis*).

3.9.1 EXISTING CONDITIONS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise sources by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

Noise Descriptors

Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak hour Leq is the noise metric used to collect short-term noise level measurement samples and to calculate the Day-Light Noise Level (Ldn). This descriptor is listed here for reference only; the County of San Bernardino relies on the Ldn to assess transportation related impacts on noise sensitive land uses.

The Day-Night Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to dBA Leq sound levels at night between 10:00 PM and 7:00 AM. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. Ldn does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. As identified in the County *General Plan* Noise Element, the County relies on the Ldn noise level standard to assess transportation related impacts on noise sensitive land uses. Examples of various sound levels in different environments are illustrated on Exhibit 3.9-1, *Sound Levels and Human Response*.

Traffic Noise Prediction

The level of traffic noise depends on three (3) primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. A doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of three (3) dBA. The truck mix on a given roadway also has a significant effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires.

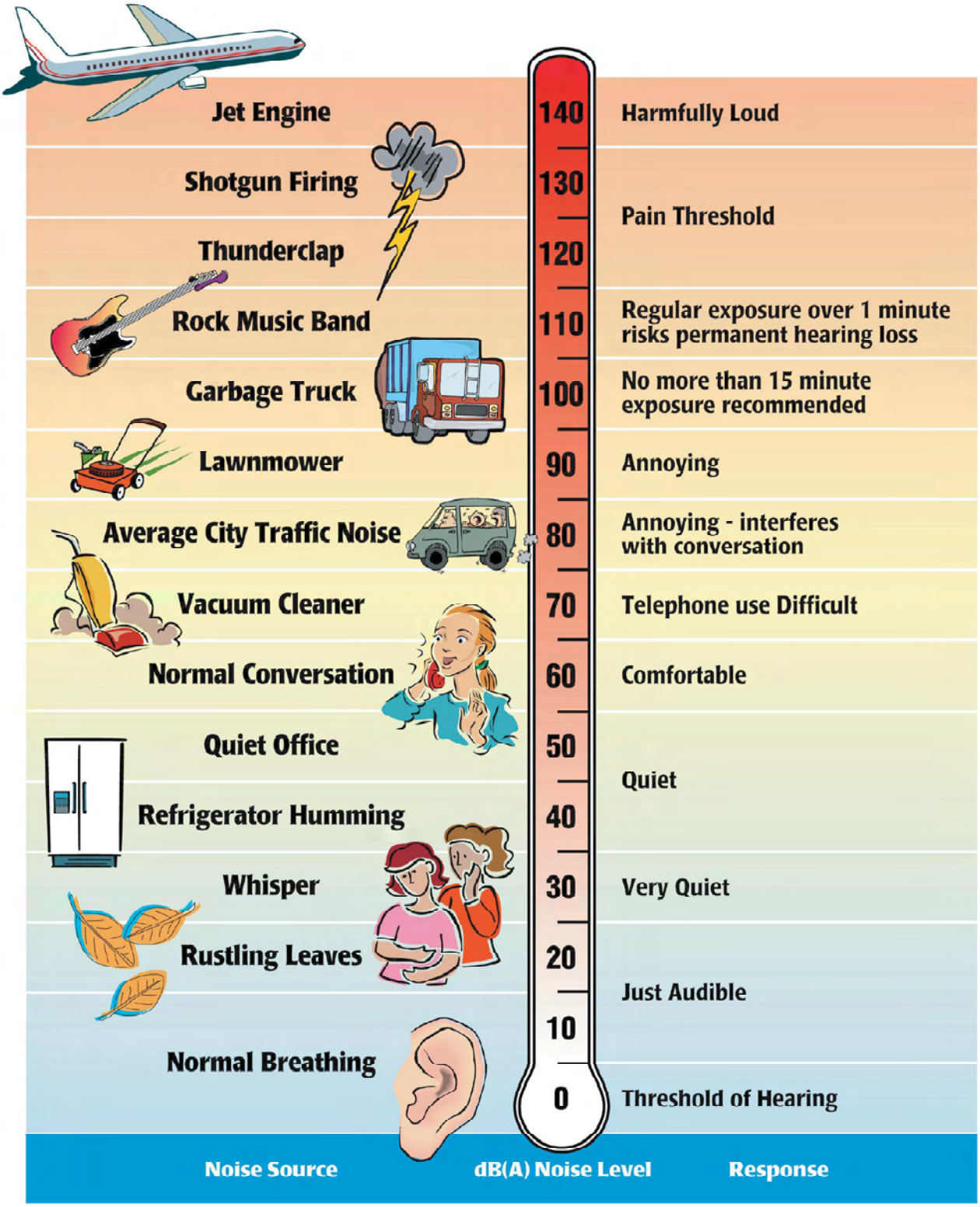
Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase of three (3) dBA. Based on the Federal Highway Administration (FHWA) community noise assessment criteria, this change is considered "barely perceptible."

Noise Control

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receiver by controlling the noise source, transmission path, receiver, or all three (3). This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to any and all of these three (3) elements.

Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. Based on our experience, soft site conditions better reflect the predicted noise levels. In addition, Caltrans' research has shown that the use of soft site conditions is more appropriate for the application of the FHWA traffic noise prediction model used in this analysis.



Source:

Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.

Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004)*, March 1974.

SOUND LEVELS AND HUMAN RESPONSE

This page was intentionally left blank

Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by ten (10) to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of a road. Noise barriers do little good for homes on a hillside overlooking a road or for buildings which rise above the barrier. A noise barrier can achieve a five (5) dBA noise level reduction when it is tall enough to break the line-of-sight.

Existing Noise Level Measurements

To determine the existing noise level environment, noise measurements were taken at five (5) locations in the project area. Exhibit 3.9-2, *Noise Monitoring Locations,* provides the boundaries of the project area and the noise measurement locations. The noise measurements were recorded by Urban Crossroads, Inc. between the hours of 9:00 AM to 12:00 PM on June 10, 2008.

Measurement Procedure and Criteria

Noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter, programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The project site currently contains single-family residences that are spread sporadically over the area. The project site is subject to noise from Cahuilla Road. Adjacent land uses include scattered single-family homes and vacant land.

Noise monitoring locations were selected by Urban Crossroads based on the impact potential. Site 1 is located near the existing intersection of Cahuilla Road and Apache Trail. Site 2 is located approximately 100 feet from the roadway centerline near the existing intersection of Cahuilla Road and Laguna Seca Drive. Site 3 is located 100 feet south of the existing Cahuilla Road centerline at 23875 Cahuilla Road. Site 4 is located 100 feet south of the existing Standing Rock Avenue centerline east of Joshua Road. Site 5 is located 100 feet east of the existing Central road centerline south of Cahuilla Road. Exhibit 3.9-1, *Sound Levels with Human Response,* shows the noise monitoring locations.

Noise Measurement Results

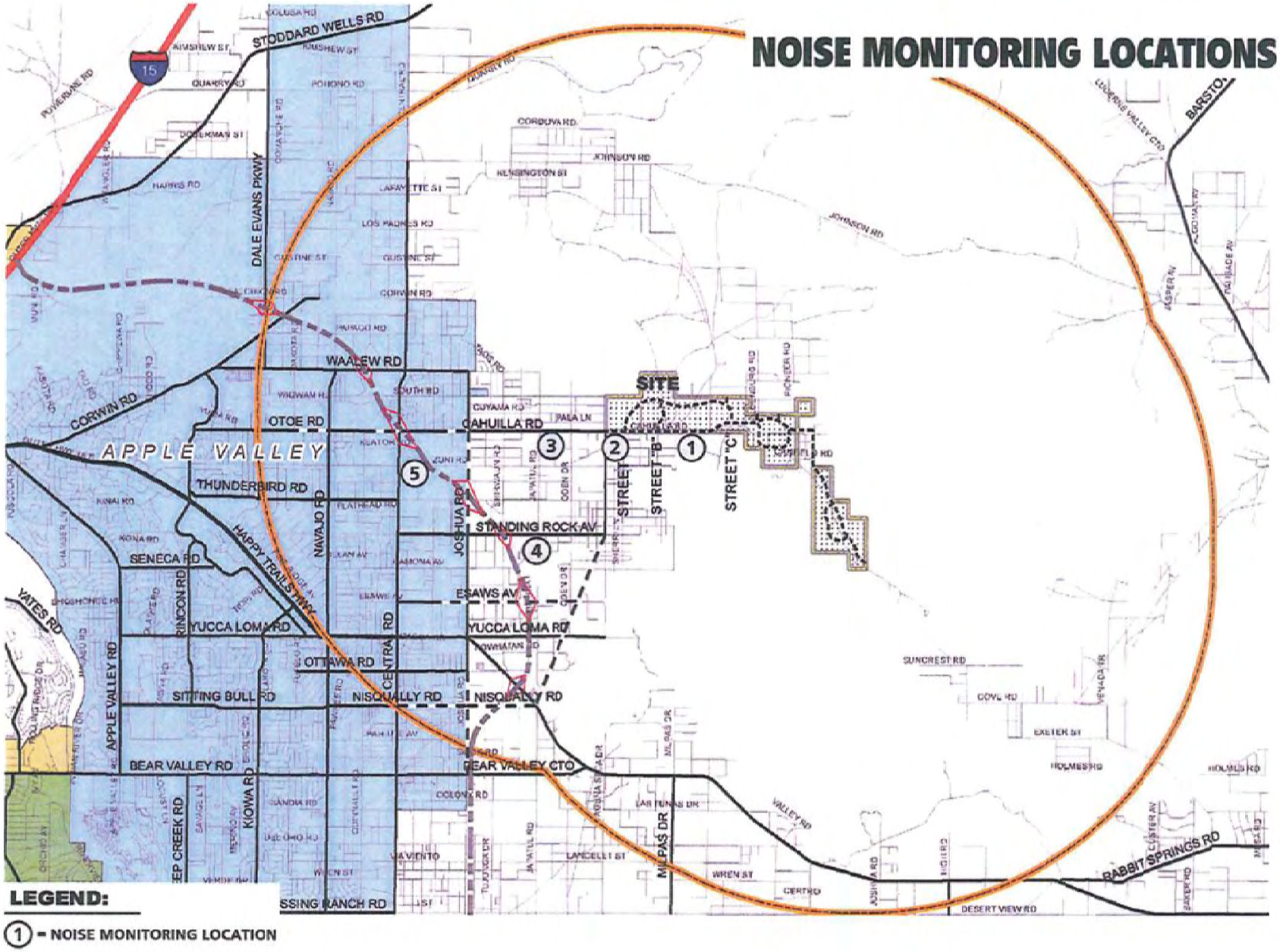
The results of the noise level measurements are presented in Table 3.9-1, *Existing (Ambient) Noise Level Measurements).* All noise measurements were monitored for a minimum time period of ten (10) minutes. The ambient noise measured within the project site exposed to traffic noise ranges from 41.8 to 60.0 dBA Leq. The noise levels measured were then converted to Ldn levels and ranged from 41.9 to 60.0 dBA Ldn. The noise monitoring results printouts and the calculations to convert Leq to Ldn are included in Appendix I.

Table 3.9-1
Existing (Ambient) Noise Level Measurements

Observer Location[2]	Description	Time of Measurement[3]	Primary Noise Source	Noise Levels (Leq dBA)	Noise Levels (Ldn dBA)
1	Located near the existing intersection of Cahuilla Road and Apache Trail.	9:49 AM	Traffic on Cahuilla Road / Ambient Noise	47.4	47.5
2	Located 100 feet from the roadway centerline near the existing intersection of Cahuilla Road and Laguna Seca Drive.	10:07 AM	Traffic on Laguna Seca Road / Cahuilla Road / Ambient Noise	41.8	41.9
3	Located 100 feet south of the existing Cahuilla Road centerline at 23875 Cahuilla Road.	10:29 AM	Traffic on Cahuilla Road / Ambient Noise	48.6	48.7
4	Located 100 feet south of the existing Standing Rock Avenue centerline and approximately 1,930 feet east of the existing Joshua Road centerline.	10:55 AM	Traffic on Standing Rock Avenue / Ambient Noise	55.5	55.6
5	Located 100 feet east of the existing Central Road centerline at the future Zuni Road intersection.	11:16 AM	Traffic on Central Road	60.0	60.0

Notes:
1. *Noise measurements taken by Urban Crossroads, Inc. on June 10, 2008.*
2. *Refer to Appendix I for the location of the monitoring sites.*
3. *All locations were monitored for a period of 10 minutes.*
4. *Leq to Ldn conversions are included in Appendix I.*

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.



NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

NOISE MONITORING LOCATIONS

Exhibit 3.9-2

This page was intentionally left blank

Existing Roadway Noise Levels

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model - FHWA-RD-77-108 (the "FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. For this particular project, hard-site conditions are used and are solely based on the calibration with the noise measurements.

Table 3.9-2, *Existing Conditions Noise Contours*, presents the existing noise contours. The project area currently contains single-family homes in a relatively undeveloped area. The existing noise levels near the project area consist primarily of traffic noise from Cahuilla Road and is currently below 50 dBA Ldn at 100 feet from the road centerline.

Table 3.9-2
Existing Conditions Noise Contours

Road	Segment	Ldn at 100 Feet (dBA)	Distance To Contour (Feet)			
			70 dBA Ldn	65 dBA Ldn	60 dBA Ldn	55 dBA Ldn
Cahuilla Road	e/o Central Rd.	49.0	RW	RW	RW	RW
Cahuilla Road	e/o Joshua Rd.	49.9	RW	RW	RW	RW
Cahuilla Road	w/o Central Rd.	-	-	-	-	-
Central Road	n/o Cahuilla Rd.	58.1	RW	RW	74	160
Central Road	n/o Esaws Ave.	60.3	RW	RW	105	227
Central Road	n/o Ottawa Rd.	61.5	RW	59	127	273
Central Road	n/o Standing Rock Ave.	60.3	RW	RW	105	227
Central Road	n/o Thunderbird Rd.	59.1	RW	RW	88	189
Central Road	n/o Waalew Rd.	53.6	RW	RW	RW	81
Central Road	n/o Yucca Loma Rd.	61.9	RW	62	133	287
Central Road	s/o Ottawa Rd.	61.2	RW	56	121	260
Dale Evans Parkway	s/o Thunderbird Rd.	59.0	RW	RW	86	186
Happy Trails Highway	e/o Bear Valley Rd.	63.0	RW	74	159	344
Happy Trails Highway	e/o Milpas Dr.	62.0	RW	63	136	293
Happy Trails Highway	w/o Bear Valley Rd.	60.9	RW	RW	114	246
Joshua Road	n/o Cahuilla Rd.	53.3	RW	RW	RW	77

Road	Segment	Ldn at 100 Feet (dBA)	Distance To Contour (Feet)			
			70 dBA Ldn	65 dBA Ldn	60 dBA Ldn	55 dBA Ldn
Joshua Road	n/o Esaws Rd.	56.6	RW	RW	59	128
Joshua Road	s/o Esaws Rd.	-	-	-	-	-
Laguna Seca Dr.	s/o Cahuilla Rd.	42.1	RW	RW	RW	RW
Navajo Road	n/o Ottawa Rd.	62.5	RW	68	147	317
Standing Rock Avenue	e/o High Desert Corridor	54.4	RW	RW	RW	91
Standing Rock Avenue	w/o High Desert Corridor	54.4	RW	RW	RW	91
Thunderbird Road	e/o Navajo Rd.	58.1	RW	RW	74	160
Thunderbird Road	w/o Navajo Rd.	60.3	RW	RW	105	227
Waalew Road	e/o Central Rd.	56.9	RW	RW	62	134
Waalew Road	e/o Dale Evans Pkwy.	58.8	RW	RW	83	178
Waalew Road	e/o High Desert Corridor	57.1	RW	RW	64	137
Waalew Road	e/o Navajo Rd.	57.1	RW	RW	64	137
Waalew Road	w/o Dale Evans Pkwy.	58.1	RW	RW	74	160
Yucca Loma Road	e/o Central Rd.	62.9	RW	72	156	336
Yucca Loma Road	w/o Central Rd.	64.9	RW	99	213	458

RW = Noise contour located within the right-of-way of the roadway; n/o = north of; s/o = south of; e/o = east of; w/o = west of
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

3.9.2 REGULATORY SETTING

County of San Bernardino

The County of San Bernardino has identified two separate types of noise sources: (1) mobile, and (2) stationary. To control mobile or transportation related noise sources such as freeways, airport and railroads, the County of San Bernardino has established guidelines for acceptable community noise levels in the Noise Element of the County *General Plan* and the San Bernardino County Development Code. The methods used to control community noise impacts from non-transportation noise sources (such as speakerphones, trash compactors, air-conditioning units, etc.) is also presented in the San Bernardino County Development Code.

Noise Element Criteria

Policy N 1.4 requires the County to enforce the State noise insulation standards (California Administrative Code, Title 24, Chapter 2) and Chapter 35 of California Building Code (CBC). Title 24 requires that an acoustical analysis be prepared for all new development of multi-family dwellings, condominiums, hotels, and motels proposed for areas within the 60 dB Ldn contour of a major noise source for the purpose of documenting that an acceptable interior noise level of 45 dB Ldn would be achieved with windows closed.

Development Code

Chapter 82.18 of the County Development Code includes noise standards for transportation related sources. Exterior noise levels in all single-family residential land use areas and multi-family residential land use areas should not exceed 65 dBA Ldn. Exterior noise levels shall not exceed 70 dBA Ldn for any residential use areas. Ability to mitigate exterior noises to the levels of 65 dBA Ldn and 70 dBA Ldn shall be considered by the review authority when determining the actual Ldn level with which the land uses must comply. Transportation noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 3.9-3, *Noise Standards for Adjacent Mobile Noise Sources.*

Table 3.9-3
Noise Standards for Adjacent Mobile Noise Sources

Land Use		Ldn (or CNEL dB(A)	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Residential	Hotel, motel, transient housing	45	60
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Housing, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

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 PM to 10 AM and 10 decibels to sound levels in the night before 7 AM and after 10 PM

Notes:

1. The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.

2. The outdoor environment shall be limited to:

- *Hospital/office building patios*
- *Hotel and motel recreation areas*
- *Mobile home parks*
- *Multi-family private patios or balconies*
- *Park picnic areas*
- *Private yard of single-family dwellings*
- *School playgrounds*

3. An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Interior noise levels in all single-family and multi-family residences and educational institutions shall not exceed 45 dBA Ldn emanating from sources outside the residential building. The County of San Bernardino had developed a set of requirements for determining and mitigating non-transportation/stationary noise source impacts to residential properties. Noise sources

covered by this standard include, but are not limited to: industrial facilities, mining activities, loading dock activities, loud speakers, sporting events, musical performances, well pumps, equipment, vehicles operated off the public roadways, or any noise producing activities associated with a permanent fixed base of operation. Table 3.9-4, *Noise Standards for Other Sources*, of the Development Code includes noise standards for stationary-related sources:

Table 3.9-4
Noise Standards for Other Sources

Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

According to the stationary source noise standards, industrial facility related noise must not exceed 70 dBA for a cumulative period of more than 30 minutes in any hour (for the daytime and nighttime hours) to any portion of any surrounding property containing a habitable dwelling, hospital, school, library, or nursing home. It should not exceed the 70 dBA plus 5 dBA for a cumulative period of more than 15 minutes in any hour, or plus 10 dBA for a cumulative period of more than five minutes in any hour, or plus 15 dBA for a cumulative period of more than 1 minute in any hour or the standard plus 20 dBA for any period of time.

3.9.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

CEQA Thresholds

Appendix G, of the *CEQA Guidelines* contains analysis guidelines related to the assessment of noise impacts. These guidelines have been utilized as thresholds of significance for this analysis. As stated in Appendix G, a project would create a significant environmental impact if it would:

- Expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generate excessive ground borne vibration or ground borne noise levels;

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

Levels of Significance

In community noise assessment, changes in noise levels greater than 3 dBA are often identified as "barely perceptible," while changes of 5 dBA are "readily perceptible." In the range of 1 dBA to 3 dBA, people who are very sensitive to noise may perceive a slight change in noise level. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. In a community situation, the noise exposure is extended over a long time period, and changes in noise levels occur over years rather than the immediate comparison made in a laboratory situation. The level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people.

For purposes of this study, project-related traffic noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA Ldn <u>and</u> if: (1) the existing noise levels already exceed the 65 dBA Ldn residential standard, <u>or</u> (2) the project increases noise levels from below the 65 dBA Ldn standard to above 65 dBA Ldn.

Off-site cumulative noise impacts describes how much noise levels are projected to increase over existing conditions with the development of the proposed project and all other traffic growth projected with buildout of the Comprehensive General Plan. Long-term cumulative off-site impacts from traffic noise are also measured against two criteria. Both criteria must be met for a significant impact to be identified:

- Future traffic noise levels must create a “readily perceptible” increase of 5 dBA or more compared to existing conditions on a roadway segment adjacent to a noise sensitive land use.

- The resulting future with project noise level must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 dBA CNEL for residential land uses. The project would considerably contribute to this increase if it contributes a “barely perceptible” 3 dBA or more to the increase.

The identified County noise levels of significance criteria generally subsume the CEQA thresholds of significance insofar as the County’s identified performance criteria were adopted as a part of its update to the County *General Plan* and are the County’s official planning policies by which an impact is deemed to be significant.

Environmental Impacts and Mitigation Measures

Short-Term Construction Noise Impacts

3.9-1: *Grading and construction within the area may result in significant temporary noise impacts to nearby noise sensitive receivers.* **Level of Significance: Less Than Significant with Mitigation.**

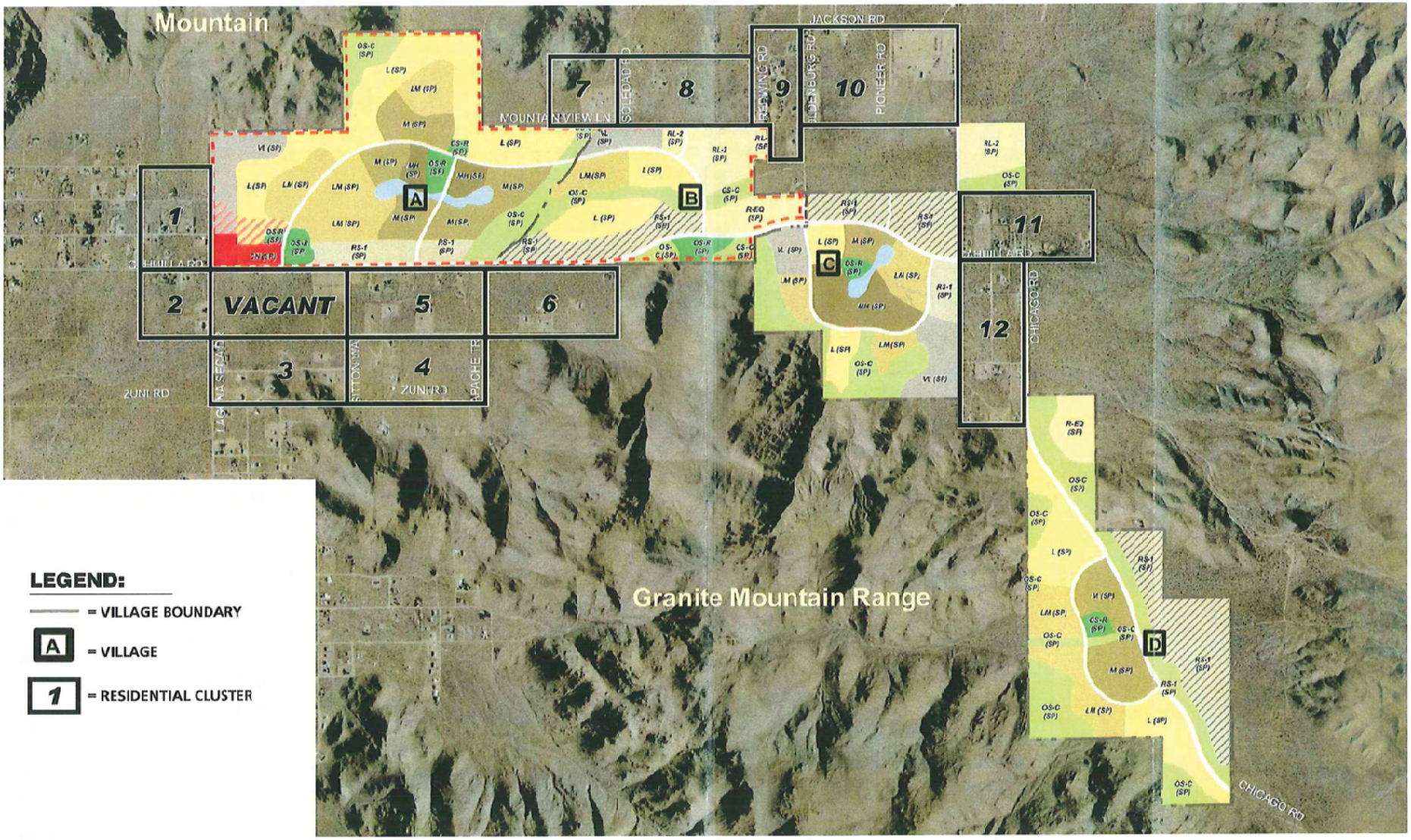
Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including scrapers, dozers, graders, water trucks, excavators, tractors, sweepers, pavers, and rollers can reach high levels. Grading activities typically represent one (1) of the highest potential sources for noise impacts.

The project site is located in a relatively undeveloped area with scattered single family homes near the site. Even though construction activities are exempt from the County's noise ordinance if the construction occurs within the allowable hours, a complete review of the potential constructed related impacts has been performed as part of this study. To assess the noise impacts during construction, a total of 12 unique receiver locations were created. Exhibit 3.9-3, *Noise Sensitive Clusters for Construction-Related Noise Impact Analysis*, illustrates the receivers and their locations. Each receiver location represents a cluster representing a number of homes in the study area that may be impacted by construction-related noise. Construction related noise impacts were analyzed by four (4) phases of construction, and each phase included the development of both structures (residences) as well as all utilities associated with each phase.

Expected On-Site Construction Related Noise

For the purpose of this analysis, the potential short-term construction impacts were described in terms of construction impacts associated with grading activities, utilities construction, paving, and building construction during each project phase, when applicable.

The U.S. Environmental Protection Agency (EPA) had compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 68 dBA measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA at 100 feet from the source to the receptor, and would be further reduced by another 6 dBA to 56 dBA at 200 feet from the source to the receptor. Field measurements show that construction noise levels generated by commonly used grading equipment (i.e., loaders, graders, and trucks) generate noise levels that typically do not exceed the middle of the ranges.



NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

NOISE SENSITIVE CLUSTERS

Exhibit 3.9-3

This page was intentionally left blank

Grading Activities. Grading activities typically represent the highest potential sources for noise impacts. Site preparation and grading would include hauling and spoiling soil on site which is required to build the pads created for new buildings. It is estimated that grading activities during each phase would last approximately three (3) months.

Underground Utility Construction. The types of activities that generally take place may include general trench-work, pipe laying with associated base material and cover, ancillary earthwork, manholes, etc. Underground utility construction is expected to take approximately six (6) months during each respective phase of construction.

Paving. Paving activities include the movement of any existing material, curb and gutter work, road base material placement and blacktop.

Building Construction. Building construction activity would result in emissions from heavy equipment that would be operational during physical building construction.

Noise Impacts per Construction Phase

Project construction is expected to occur in four (4) independent phases, roughly corresponding to each of the four (4) villages that comprise the project. It should be noted that the four (4) phases discussed in the analysis of construction impacts are considered to be consistent with market absorption of each village within the Specific Plan Land Use Plan, and do not correlate to the two operational phases (interim and buildout) as analyzed in the project traffic study. The project site is currently vacant, and thus no demolition activity would be required.

In the first phase of project construction, Village A, located on the western portion of the project site, would be graded. As a worst-case scenario, it is assumed that underground utility construction, paving, building construction, and architectural coating would take place concurrent with grading at the Village A portion of the project site. During this phase of project construction, it is assumed that grading activity would last approximately three (3) months, underground utility construction approximately six (6) months, paving approximately one (1) and a half months, and building construction approximately one (1) year.

In order to represent a worst case scenario, it was assumed that grading, underground utility construction, paving, and building construction on the Village B portion of the project site would begin prior to the completion of building construction and architectural coatings on the Village A site, and thus these activities would overlap. In this second phase of project construction it is assumed that for the Village B area grading activity would last approximately three (3) months, underground utility construction approximately six (6) months, paving approximately one and a half (1½) months, and building construction approximately one (1) year.

Phase 3 of project construction includes the completion of building construction and architectural coatings on the Village B portion of the project site, as well as the commencement of grading, underground utility construction, paving, and building construction on the Village C portion of the project site. It is assumed that grading, underground utility construction, paving, and building construction on the Village C portion of the site would last approximately three (3) months, six (6) months, one and a half (1½) months, and one (1) year, respectively.

The fourth and final phase of project construction includes the completion of building construction and architectural coating activities on the Village C portion of the site, as well as grading, underground utility construction, paving, and building construction for Village D, the easternmost portion of the project site.

The noise impacts during grading, utilities construction, paving, and building construction were estimated using the Roadway Construction Noise Model (RCNM), developed by the Federal Highway Administration. For the purpose of this analysis it is assumed that activities would occur simultaneously during each construction phase, as listed above. Refer to Appendix I for the construction noise assumptions and impacts calculated utilizing the RCNM model.

Most construction equipment moves around the site and is characterized by variations in power and location, resulting in significant variations in noise levels over time. For the purpose of this analysis, all construction equipment is assumed to take place in the center of the area. Table 3.9-5, *Residential uses Impacted By Constructed Related Noise*, shows the noise impacts for each construction activity at 50 feet of the center of activity when all construction equipment is combined.

Table 3.9-5
Residential Uses Impacted by Construction Related Noise

Construction Activity	Equipment Type	Reference Level @ 50 Feet (dBA Leq)	Quantity	Total Noise Level @ 50 Feet (dBA Leq)	Overall Noise Level @ 50 Feet (dBA Leq)
Grading	Scraper	79.6	5	86.6	89.7
	Dozer	77.7	2	80.7	
	Grader	81.0	2	84.0	
	Water Truck	71.0	4	77.0	
	Excavator	76.7	1	76.7	
Building Construction	Tractor	80.0	5	87.0	87.8
	Water Truck	71.0	5	78.0	
	Sweeper	71.6	3	76.4	
Underground Utility Construction	Excavator	76.7	1	76.7	87.8
	Tractor	80.0	3	84.8	
	Water Truck	71.0	3	75.8	
	Scraper	79.6	1	79.6	
	Grader	81.0	1	81.0	
Paving	Paver	74.2	2	77.2	80.2
	Roller	73.0	2	76.0	
	Water Truck	71.0	1	71.0	

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Utilizing a 6 dBA reduction per doubling of distance, the construction noise levels were projected according to the distances to the nearest noise sensitive locations. The resulting construction noise levels during construction for phases 1, 2, 3, and 4 are shown in Table 3.9-6, *Phase 1 Construction Related Noise Impact Levels*, Table 3.9-7, *Phase 2 Construction Related Noise Impact Levels*, Table 3.9-8, *Phase 3 Construction Related Noise Impact Levels,* and Table 3.9-9, *Phase 4 Construction Related Noise Impact Levels*.

Table 3.9-6
Phase 1 Construction Related Noise Impact Levels

Cluster	Distance From Grading Activity to Receiver	Grading Related Noise Impact Level (dBA)	Distance From Building Construction Activity to Receiver	Building Construction Related Noise Impact Level (dBA)	Distance From Underground Utility Construction Activity to Receiver	Underground Utility Construction Related Noise Impact Level (dBA)	Distance From Paving Activity To Receiver	Paving Related Noise Impact Level (dBA)	Overall Construction Related Noise Impact Level (dBA)
1	4,303	51.0	4,303	49.1	4,303	49.1	4,303	41.5	54.8
2	4,475	50.7	4,475	48.8	4,475	48.8	4,475	41.2	54.5
3	3,104	53.8	3,104	51.9	3,104	51.9	3,104	44.3	57.6
4	2,683	55.1	2,683	53.2	2,683	53.2	2,683	45.6	58.9
5	1,360	61.0	1,360	59.1	1,360	59.1	1,360	51.5	64.8
6	2,545	55.6	2,545	53.7	2,545	53.7	2,545	46.1	59.4
7	3,767	52.2	3,767	50.3	3,767	50.3	3,767	42.7	56.0
8	5,403	49.0	5,403	47.1	5,403	47.1	5,403	39.5	52.8
9	6,609	47.3	6,609	45.4	6,609	45.4	6,609	37.8	51.1
10	7,643	46.0	7,643	44.1	7,643	44.1	7,643	36.5	49.8
11	11,108	42.8	11,108	40.9	11,108	40.9	11,108	33.3	46.6
12	11,002	42.8	11,002	40.9	11,002	40.9	11,002	33.3	46.7

Note: distances are in feet.

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Table 3.9-7
Phase 2 Construction Related Noise Impact Levels

Cluster	Distance From Grading Activity to Receiver	Grading Related Noise Impact Level (dBA)	Distance From Building Construction Activity to Receiver	Building Construction Related Noise Impact Level (dBA)	Distance From Underground Utility Construction Activity to Receiver	Underground Utility Construction Related Noise Impact Level (dBA)	Distance From Paving Activity To Receiver	Paving Related Noise Impact Level (dBA)	Overall Construction Related Noise Impact Level (dBA)
1	9,581	44.1	4,303	49.1	9,581	42.2	9,581	34.6	51.0
2	9,610	44.0	4,475	48.8	9,610	42.1	9,610	34.5	50.8
3	7,406	46.3	3,104	51.9	7,406	44.4	7,406	36.8	53.6
4	6,233	47.8	2,683	53.2	6,233	45.9	6,233	38.3	55.0
5	5,398	49.0	1,360	59.1	5,398	47.1	5,398	39.5	59.8
6	3,470	52.9	2,545	53.7	3,470	51.0	3,470	43.4	57.6
7	2,060	57.4	3,767	50.3	2,060	55.5	2,060	47.9	60.3
8	1,014	63.6	5,403	47.1	1,014	61.7	1,014	54.1	66.1
9	1,619	59.5	6,609	45.4	1,619	57.6	1,619	50.0	62.0
10	2,514	55.7	7,643	44.1	2,514	53.8	2,514	46.2	58.3
11	6,048	48.0	11,108	40.9	6,048	46.1	6,048	38.5	50.9
12	6,209	47.8	11,002	40.9	6,209	45.9	6,209	38.3	50.7

Note: distances are in feet.
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Table 3.9-8
Phase 3 Construction Related Noise Impact Levels

Cluster	Distance From Grading Activity to Receiver	Grading Related Noise Impact Level (dBA)	Distance From Building Construction Activity to Receiver	Building Construction Related Noise Impact Level (dBA)	Distance From Underground Utility Construction Activity to Receiver	Underground Utility Construction Related Noise Impact Level (dBA)	Distance From Paving Activity To Receiver	Paving Related Noise Impact Level (dBA)	Overall Construction Related Noise Impact Level (dBA)
1	13,277	41.2	9,581	42.2	13,277	39.3	13,277	31.7	46.0
2	13,221	41.3	9,610	42.1	13,221	39.4	13,221	31.8	46.0
3	10,615	43.2	7,406	44.4	10,615	41.3	10,615	33.7	48.1
4	9,280	44.3	6,233	45.9	9,280	42.4	9,280	34.8	49.4
5	8,886	44.7	5,398	47.1	8,886	42.8	8,886	35.2	50.2
6	6,805	47.0	3,470	51.0	6,805	45.1	6,805	37.5	53.3
7	6,091	48.0	2,060	55.5	6,091	46.1	6,091	38.5	56.7
8	4,596	50.4	1,014	61.7	4,596	48.5	4,596	40.9	62.2
9	3,673	52.4	1,619	57.6	3,673	50.5	3,673	42.9	59.4
10	3,063	54.0	2,514	53.8	3,063	52.1	3,063	44.5	58.3
11	2,039	57.5	6,048	46.1	2,039	55.6	2,039	48.0	60.1
12	2,077	57.3	6,209	45.9	2,077	55.4	2,077	47.8	60.0

Note: distances are in feet.
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Table 3.9-9
Phase 4 Construction Related Noise Impact Levels

Cluster	Distance From Grading Activity to Receiver	Grading Related Noise Impact Level (dBA)	Distance From Building Construction Activity to Receiver	Building Construction Related Noise Impact Level (dBA)	Distance From Underground Utility Construction Activity to Receiver	Underground Utility Construction Related Noise Impact Level (dBA)	Distance From Paving Activity To Receiver	Paving Related Noise Impact Level (dBA)	Overall Construction Related Noise Impact Level (dBA)
1	19,105	38.1	13,277	39.3	19,105	36.2	19,105	28.6	43.0
2	18,841	38.2	13,221	39.4	18,841	36.3	18,841	28.7	43.0
3	15,827	39.7	10,615	41.3	15,827	37.8	15,827	30.2	44.7
4	14,607	40.4	9,280	42.4	14,607	38.5	14,607	30.9	45.6
5	14,884	40.2	8,886	42.8	14,884	38.3	14,884	30.7	45.8
6	13,128	41.3	6,805	45.1	13,128	39.4	13,128	31.8	47.5
7	13,818	40.9	6,091	46.1	13,818	39.0	13,818	31.4	47.9
8	12,669	41.6	4,596	48.5	12,669	39.7	12,669	32.1	49.9
9	11,936	42.1	3,673	50.5	11,936	40.2	11,936	32.6	51.5
10	11,302	42.6	3,063	52.1	11,302	40.7	11,302	33.1	52.8
11	7,586	46.1	2,039	55.6	7,586	44.2	7,586	36.6	56.4
12	6,477	47.5	2,077	55.4	6,477	45.6	6,477	38.0	56.5

Note: distances are in feet.
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

As shown in Tables 3.9-6 through 3.9-9, the predicted noise level during construction at phase 1 at the nearest noise sensitive uses ranges from 46.6 to 64.8 dBA Leq; from 50.7 to 66.1 dBA Leq during phase 2; from 46.0 to 62.2 dBA Leq during phase 3; and from 43.0 to 56.5 dBA Leq during phase 4.

The County of San Bernardino exempts construction noise from their standards when construction, maintenance, repair, or demolition activities occur between 7:00 AM and 7:00 PM, except Sundays and Federal holidays. Construction noise is of short-term duration and would not present any long-term impacts on the project site or the surrounding area. The most effective method of controlling construction noise is by limiting the hours of construction to normal weekday working hours. Implementation of mitigation measure NOI-1 would ensure that construction noise impacts are reduced to a less than significant level.

NOI-1:

- **During all project site excavation and grading on-site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.**
- **The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during all project construction.**
- **The construction contractor shall limit all construction-related activities that would result in high noise levels according to the construction hours to be determined by County staff consistent with normal weekday working hours (e.g., 7a.m. to 7p.m. Monday thru Friday).**
- **The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. Haul trucks shall access the site using the route furthest from sensitive land uses or residential dwellings.**

Construction-Related Vibration Impacts

3.9-2: *Grading and construction associated with the proposed project may result in significant temporary vibration impacts to nearby sensitive receptors.* **Level of Significance: Less Than Significant Impact.**

Vibration is the periodic movement of mass over time. It is described in terms of frequency, amplitude and unlike sound; there is no standard way of measuring and reporting amplitude. Vibration is described in units of velocity (inches per second), and discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration.

Construction equipment such as compactors, heavy trucks and pile drivers can generate perceptible vibration levels during the development of a project. Although the human threshold of perception for vibration is around 65 Vdb (or 0.018 inches/second), human response to vibration is not usually significant unless the vibration exceeds 70 Vdb (or 0.031 inches/second). Depending on the intensity and frequency of the vibration, architectural and structural damage can occur, but such damage rarely occurs when associated with construction equipment/activities. Generally the effects of groundborne vibration are limited to movement of building floors, rattling of windows and objects, and rumbling sounds, resulting in annoyance.

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction at the project site would typically require at least one (1) piece of large equipment to be operating at fairly regular intervals, especially during the earlier stages when excavation, grading, and earth moving activities would occur. Large construction equipment such as a large bulldozer or a loaded truck, can create ground vibration levels of approximately 87 VdB at 25 feet from the vibration source.

Like noise, vibration levels attenuate with distance. Groundbourne vibration levels experienced at a given distance can be estimated using the equation Lv(D) = Lv(25feet) – 30log(D/25) where "Lv" equals the vibration level, and "D" equals the distance between the vibration source and the receptor.[1] For the project, the worst-case construction source vibration levels received at the closest residential land uses (approximately 100 feet distant) are therefore estimated at:

87VdB – 30log (100/25) VdB, or approximately 68.9 VdB.

The estimated 68.9 VdB received at the nearest residential property is below the FTA 75 VdB annoyance impact criteria level, and would therefore not be considered an annoyance or an interference at proximate residential land uses. Further, impacts at the site of the closest

[1] Federal Transit Administration (FTA), *Transit Noise and Impact Assessment Manual*, May 2006, Page 12-11.

sensitive receptor are unlikely to be sustained during the entire construction period, but would occur rather only during the times that heavy construction equipment is operating proximate to the project site perimeter. Moreover, construction at the project site would be restricted to daylight hours consistent with County requirements thereby eliminating potential vibration impact during evening hours. On this basis the potential for the project to result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise is determined to be less-than-significant.

Long-Term (Mobile) Noise Impacts

3.9-3: *Traffic generated by the proposed project would not significantly contribute to existing traffic noise in the area or exceed the County's established standards.* **Level of Significance: Less Than Significant Impact.**

To assess the potential off-site noise levels impact associated with development of the proposed Hacienda at Fairview Valley development, noise contours were developed for the following traffic scenarios:

Existing: This scenario refers to the existing noise conditions, without construction of the proposed project. Refer to the above Section 3.9.2, *Existing Conditions*, for a discussion of the existing roadway noise levels.

Year (2020) With / Without Project: This scenario refers to the background noise conditions at year 2020 with and without the proposed project. This corresponds to the completion of Phase 1 of the proposed project.

Year (2030) With / Without Project: This scenario refers to the background noise conditions at year 2030 with and without the proposed project. This corresponds to the completion of Phase 2 of the proposed project, thus finishing the proposed project.

Year 2020 Project Traffic Noise Level Contributions

Table 3.9-10, *Year 2020 Off-Site Project Related Traffic Noise Impacts*, presents a comparison of the Year (2020) without and with project noise levels. For reference purposes, the Ldn noise level at a distance of 100 feet from the roadway centerline is also included in the table mentioned above. For all analyzed roadway segments the project related traffic would result in noise increases ranging from 0.0 to 16.6 dBA Ldn.

The areas adjacent to Laguna Seca Drive and Cahuilla Road between Central Road and the project site would experience "readily perceptible" noise increases ranging from 0.0 to 16.6 dBA Ldn. While the impacts exceed the 3.0 dBA noise level increase with project, the resulting noise level would remain below 65.0 dBA Ldn.

Table 3.9-10
Year 2020 Off-Site Project Related Traffic Noise Impacts

Road	Segment	Ldn at 100 Feet (dBA)		Increase	Potentially Significant Impact?[1]
		Without Project	With Project		
Cahuilla Road	e/o Central Rd.	51.1	61.0	9.9	NO
Cahuilla Road	e/o Joshua Rd.	51.7	61.9	10.2	NO
Cahuilla Road	w/o Central Rd.	42.1	42.1	0.0	NO
Central Road	n/o Cahuilla Rd.	60.7	61.1	0.5	NO
Central Road	n/o Esaws Ave.	63.7	64.4	0.7	NO
Central Road	n/o Ottawa Rd.	64.6	65.0	0.4	NO
Central Road	n/o Standing Rock Ave.	62.9	63.5	0.6	NO
Central Road	n/o Thunderbird Rd.	61.5	63.9	2.3	NO
Central Road	n/o Waalew Rd.	56.8	57.5	0.7	NO
Central Road	n/o Yucca Loma Rd.	65.1	65.6	0.5	NO
Central Road	s/o Ottawa Rd.	64.2	64.6	0.4	NO
Dale Evans Parkway	s/o Thunderbird Rd.	61.7	61.7	0.0	NO
Happy Trails Highway	e/o Bear Valley Rd.	66.2	66.4	0.2	NO
Happy Trails Highway	e/o Milpas Dr.	65.5	65.8	0.3	NO
Happy Trails Highway	w/o Bear Valley Rd.	63.6	64.2	0.6	NO
Joshua Road	n/o Cahuilla Rd.	55.8	58.1	2.3	NO
Joshua Road	n/o Esaws Rd.	59.9	62.1	2.2	NO
Joshua Road	s/o Esaws Rd.	60.7	62.4	1.8	NO
Laguna Seca Dr.	s/o Cahuilla Rd.	42.1	58.7	16.6	NO
Navajo Road	n/o Ottawa Rd.	66.0	66.2	0.2	NO
Standing Rock Avenue	e/o High Desert Corridor	58.9	61.8	3.0	NO
Standing Rock Avenue	w/o High Desert Corridor	58.9	61.8	3.0	NO
Thunderbird Road	e/o Navajo Rd.	61.4	63.1	1.8	NO
Thunderbird Road	w/o Navajo Rd.	63.2	64.2	1.0	NO
Waalew Road	e/o Central Rd.	59.0	60.1	1.0	NO
Waalew Road	e/o Dale Evans Pkwy.	61.2	61.9	0.6	NO
Waalew Road	e/o High Desert Corridor	59.8	60.8	1.0	NO
Waalew Road	e/o Navajo Rd.	59.8	60.8	1.0	NO
Waalew Road	w/o Dale Evans Pkwy.	61.8	62.1	0.3	NO
Yucca Loma Road	e/o Central Rd.	66.3	66.6	0.3	NO
Yucca Loma Road	w/o Central Rd.	68.5	68.8	0.3	NO

RW = Noise contour located within the right-of-way of the roadway; n/o = north of; s/o = south of; e/o = east of; w/o = west of

Notes:

1. *A significant impact is considered both a level above 65 dBA and an increase of 3.0 dBA or greater.*

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

Year 2030 Project Traffic Noise Level Contributions

Table 3.9-11, *Year 2030 Off-Site Project Related Traffic Noise Impacts*, presents a comparison of the Year (2030) without and with project noise levels. For reference purposes, the Ldn noise level at a distance of 100 feet from the roadway centerline is also included in the tables mentioned above. For all analyzed roadway segments the project related traffic would result in noise increases ranging from 0.0 to 7.0 dBA Ldn.

For Year 2030, the project would increase traffic noise by 5.6 dBA Ldn on Cahuilla Road between Central Road and Joshua Road resulting in a traffic noise level at 100 feet from the road centerline of 63.6 dBA Ldn. On Cahuilla Road between Joshua Road and the project site the project would increase traffic noise by 7.0 dBA Ldn resulting in a noise level at 100 feet from the centerline of 65.2 dBA Ldn. On Laguna Seca Drive, the project site the project would increase traffic noise by 13.9 dBA Ldn resulting in a noise level at 100 feet from the centerline of 56.0 dBA Ldn. According to the thresholds of significance described above, an increase over 3 dBA resulting in a noise level over 65 dBA Ldn would result in a significant noise impact. Currently, the uses adjacent to this segment are single-family homes with front yards facing Cahuilla Road. It is expected that the front yards of those homes may experience a significant impact, however, due to distance and the shielding by the house structures the rear yards of those homes would remain below 65.0 dBA Ldn. Based on a review of aerial photography in the area, the outdoor activity areas of the nearest homes are greater than 100 feet. At distances greater than 100 feet from the roadway centerline, traffic noise would be attenuated below thresholds.

Table 3.9-11
Year 2030 Off-Site Project Related Traffic Noise Impacts

Road	Segment	Ldn at 100 Feet (dBA)		Increase	Potentially Significant Impact?[1]
		Without Project	With Project		
Cahuilla Road	e/o Central Rd.	58.1	63.6	5.6	NO
Cahuilla Road	e/o Joshua Rd.	58.2	65.2	7.0	YES
Cahuilla Road	w/o Central Rd.	53.2	54.8	1.6	NO
Central Road	n/o Cahuilla Rd.	62.6	62.6	0.0	NO
Central Road	n/o Esaws Ave.	64.2	64.4	0.2	NO
Central Road	n/o Ottawa Rd.	65.1	65.2	0.1	NO
Central Road	n/o Standing Rock Ave.	63.3	63.6	0.3	NO
Central Road	n/o Thunderbird Rd.	61.6	62.8	1.2	NO
Central Road	n/o Waalew Rd.	63.1	63.6	0.6	NO
Central Road	n/o Yucca Loma Rd.	65.5	65.7	0.2	NO
Central Road	s/o Ottawa Rd.	64.6	64.7	0.1	NO
Dale Evans Parkway	s/o Thunderbird Rd.	63.9	64.2	0.3	NO
Happy Trails Highway	e/o Bear Valley Rd.	66.5	66.6	0.1	NO
Happy Trails Highway	e/o Milpas Dr.	65.9	66.1	0.2	NO

Road	Segment	Ldn at 100 Feet (dBA)		Increase	Potentially Significant Impact?[1]
		Without Project	With Project		
Happy Trails Highway	w/o Bear Valley Rd.	66.6	66.8	0.2	NO
Joshua Road	n/o Cahuilla Rd.	59.5	62.4	2.9	NO
Joshua Road	n/o Esaws Rd.	61.1	61.4	0.4	NO
Joshua Road	s/o Esaws Rd.	61.1	61.4	0.4	NO
Laguna Seca Dr.	s/o Cahuilla Rd.	42.1	56.0	13.9	NO
Navajo Road	n/o Ottawa Rd.	66.4	66.5	0.1	NO
Standing Rock Avenue	e/o High Desert Corridor	63.8	64.3	0.5	NO
Standing Rock Avenue	w/o High Desert Corridor	62.8	63.1	0.2	NO
Thunderbird Road	e/o Navajo Rd.	61.7	62.6	0.8	NO
Thunderbird Road	w/o Navajo Rd.	63.6	63.8	0.2	NO
Waalew Road	e/o Central Rd.	59.4	62.2	2.8	NO
Waalew Road	e/o Dale Evans Pkwy.	62.9	63.7	0.8	NO
Waalew Road	e/o High Desert Corridor	64.1	64.9	0.8	NO
Waalew Road	e/o Navajo Rd.	62.8	63.8	1.0	NO
Waalew Road	w/o Dale Evans Pkwy.	63.1	63.3	0.2	NO
Yucca Loma Road	e/o Central Rd.	66.5	66.7	0.2	NO
Yucca Loma Road	w/o Central Rd.	68.9	68.9	0.1	NO

RW = Noise contour located within the right-of-way of the roadway; n/o = north of; s/o = south of; e/o = east of; w/o = west of
Notes:
1. A significant impact is considered both a level above 65 dBA and an increase of 3.0 dBA or greater.
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

For all other roadway segments the project related traffic would result in barely perceptible noise increases of less than 3.0 dBA Ldn or would remain below the 65 dBA Ldn noise standard. The computer printouts of the off-site noise contours are provided in Appendix I.

Long-Term Noise Impacts

3.9-4: *The proposed project may result in a significant increase in ambient noise levels.* **Level of Significance: Less Than Significant with Mitigation.**

Stationary Noise Impacts

On the southwestern portion of the project site, a 15-acre area would be developed with a maximum of 200,000 square feet of retail uses. Typical noise impacts associated with retail uses are truck deliveries, air conditioning units, trash compactors, and drive through speakerphones. Currently there are scattered single-family homes west of the proposed project site. Within this retail area, a Public Safety Center would be developed with a sheriff substation and fire station. Typical noise impacts associated with sheriff and fire facilities include occasional sirens from emergency vehicles.

A noise analysis would be required prior to obtaining building permits when grading plans are available. The grading plan would include the location of loading docks, air conditioning units, trash compactors, and drive-thru lanes. Once the grading plan is available, mitigation measure NOI-2 would require a noise analysis to evaluate the potential noise impacts to the existing and proposed noise sensitive homes near the retail areas of the project.

On-Site Mobile Noise Impacts

Currently the primary source of noise to the project site is traffic noise from Cahuilla Road, but the majority of the project site experiences noise impacts that are well below the County of San Bernardino Noise standards based on existing noise measurements. Using the FHWA traffic noise prediction model, calculations of the expected future noise impacts were completed. Table 3.9-12, *Location of Exterior Noise Level Contours (dBA Ldn)*, presents the expected noise impacts at a distance of 100 feet from the roadway centerline and a summary of future on-site noise contours from Cahuilla Road. Since the grading information is not yet available, for the purpose of this preliminary analysis, the site and its surrounding roadways were considered flat. Based on the FHWA traffic noise prediction model, the future unmitigated exterior noise levels contours are 65 dBA LDN at a distance of 47 to 86 feet from centerline, 60 dBA Ldn at a distance of 102 to 186 feet from centerline, and 55 dBA Ldn at a distance of 219 to 401 feet from centerline.

Table 3.9-12
Location of Exterior Noise Level Contours (dBA Ldn)

Roadway	Segment	Ldn at 100 Feet	Distance From Centerline to Noise Contour			
			70 dBA Ldn	65 dBA Ldn	60 dBA Ldn	55 dBA Ldn
Cahuilla Road	w/o Driveway A	64.0	RW	86	186	401
Cahuilla Road	w/o Driveway B	61.5	RW	58	126	271
Cahuilla Road	w/o Driveway C	60.4	RW	50	107	231
Cahuilla Road	e/o Driveway C	60.1	RW	47	102	219

RW = Noise contour located within the right-of-way of the roadway; n/o = north of; s/o = south of; e/o = east of; w/o = west of;
Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

The conceptual site plan shows that the planned residential areas would be located adjacent to Cahuilla Road. At these distances given above, the 70 dBA Ldn contour is located within the road right-of-way; however, portions of the residential land uses adjacent to Cahuilla Road may experience noise impacts above 65 dBA Ldn. The County's Noise Element requires that in residential uses, noise impacts shall be mitigated below 65 dBA Ldn for single-family homes at the noise sensitive exterior areas as well as ensure that interior noise levels remain below the County's required standard of 45 dBA Ldn. A noise barrier may be required for residential areas adjacent to Cahuilla Road. Once specific plans are available, a final noise study shall be

completed to determine specific noise mitigation measures to ensure the proposed project meets the County of San Bernardino exterior and interior noise standards; refer to mitigation measure NOI-3.

NOI-2: **Prior to the issuance of building permits, a noise analysis shall be required when grading plans are available. The grading plan shall include the location of stationary noise sources, such as loading docks, air conditioning units, trash compactors, and drive-thru lanes. The noise analysis shall evaluate the potential noise impacts to the existing and proposed noise sensitive homes near the retail areas of the project. The noise analysis will require design features and practices to ensure that noise levels will be reduced to acceptable levels.**

NOI-3: **Prior to the issuance of building permits, a final noise study shall be completed to determine specific noise mitigation measures to ensure the proposed residential units meets the County's exterior and interior noise standards.**

3.9.3 ANALYSIS OF CUMULATIVE IMPACTS

Short-Term Cumulative Impacts

Construction-related noise for the proposed project and each related project would be localized. In addition, it is likely that each of the related projects would have to comply with the local noise ordinance, as well as mitigation measures that may be prescribed pursuant to CEQA provisions that require significant impacts to be reduced to the extent feasible.

Construction noise impacts would cease upon completion of excavation, grading, and building activities. Compliance with site-specific mitigation, as well as compliance with Code requirements, would serve to minimize the length of time noise-sensitive receptors are exposed to significant noise levels. Additionally, because noise dissipates as it travels away from its source, noise impacts from construction activities would be limited to each of the respective sites and their and vicinities. Construction noise from cumulative projects would not interact with noise from the proposed project due to distances between the specific sites. Therefore, a less than significant impact would occur in this regard.

Long-Term Cumulative Impacts

Off-site cumulative noise impacts describes how much noise levels are projected to increase over existing conditions with the development of the proposed project and all other traffic growth projected. Cumulative increases in traffic noise levels along roadways in the vicinity were estimated by comparing the County *General Plan* buildout scenario to existing conditions. Table 3.9-13, *Cumulative Noise Impacts*, describes how much noise levels are projected to increase over existing conditions with the development of the proposed project and all other traffic growth projected with buildout of the Comprehensive General Plan.

Table 3.9-13
Cumulative Traffic Noise Impacts

Road	Segment	Ldn at 100 Feet (dBA)		Cumulative Increase	Project Contribution	Potentially Significant Impact?[1]
		Existing	2030 With Project			
Cahuilla Road	e/o Central Rd.	49.0	63.6	14.6	5.6	NO
Cahuilla Road	e/o Joshua Rd.	49.9	65.2	15.3	7.0	YES
Cahuilla Road	w/o Central Rd.	-	54.8	-	1.6	-
Central Road	n/o Cahuilla Rd.	58.1	62.6	4.5	0.0	NO
Central Road	n/o Esaws Ave.	60.3	64.4	4.1	0.2	NO
Central Road	n/o Ottawa Rd.	61.5	65.2	3.7	0.1	NO
Central Road	n/o Standing Rock Ave.	60.3	63.6	3.3	0.3	NO
Central Road	n/o Thunderbird Rd.	59.1	62.8	3.7	1.2	NO
Central Road	n/o Waalew Rd.	53.6	63.6	10.0	0.6	NO
Central Road	n/o Yucca Loma Rd.	61.9	65.7	3.8	0.2	NO
Central Road	s/o Ottawa Rd.	61.2	64.7	3.5	0.1	NO
Dale Evans Parkway	s/o Thunderbird Rd.	59.0	64.2	5.1	0.3	NO
Happy Trails Highway	e/o Bear Valley Rd.	63.0	66.6	3.6	0.1	NO
Happy Trails Highway	e/o Milpas Dr.	62.0	66.1	4.1	0.2	NO
Happy Trails Highway	w/o Bear Valley Rd.	60.9	66.8	5.9	0.2	NO
Joshua Road	n/o Cahuilla Rd.	53.3	62.4	9.1	2.9	NO
Joshua Road	n/o Esaws Rd.	56.6	61.4	4.8	0.4	NO
Joshua Road	s/o Esaws Rd.	-	61.4	-	0.4	-
Laguna Seca Dr.	s/o Cahuilla Rd.	42.1	56.0	13.9	13.9	NO
Navajo Road	n/o Ottawa Rd.	62.5	66.5	4.0	0.1	NO
Standing Rock Avenue	e/o High Desert Corridor	54.4	64.3	9.9	0.5	NO
Standing Rock Avenue	w/o High Desert Corridor	54.4	63.1	8.7	0.2	NO
Thunderbird Road	e/o Navajo Rd.	58.1	62.6	4.5	0.8	NO
Thunderbird Road	w/o Navajo Rd.	60.3	63.8	3.5	0.2	NO
Waalew Road	e/o Central Rd.	56.9	62.2	5.3	2.8	NO
Waalew Road	e/o Dale Evans Pkwy.	58.8	63.7	5.0	0.8	NO

Road	Segment	Ldn at 100 Feet (dBA)		Cumulative Increase	Project Contribution	Potentially Significant Impact?[1]
		Existing	2030 With Project			
Waalew Road	e/o High Desert Corridor	57.1	64.9	7.9	0.8	NO
Waalew Road	e/o Navajo Rd.	57.1	63.8	6.8	1.0	NO
Waalew Road	w/o Dale Evans Pkwy.	58.1	63.3	5.3	0.2	NO
Yucca Loma Road	e/o Central Rd.	62.9	66.7	3.8	0.2	NO
Yucca Loma Road	w/o Central Rd.	64.9	68.9	4.0	0.1	NO

RW = Noise contour located within the right-of-way of the roadway; n/o = north of; s/o = south of; e/o = east of; w/o = west of

Notes:

1. *A potentially significant impact occurs when the cumulative increase is greater than 5 dBA and the project contribution is greater than 3 dBA, resulting in exterior noise level greater than 65 dBA Ldn.*

Source: Urban Crossroads, Hacienda at Fairview Valley Noise Analysis, December 16, 2008.

As described above, long-term cumulative off-site impacts from traffic noise are also measured against two criteria. Both criteria must be met for a significant impact to be identified:

- Future traffic noise levels must create a "readily perceptible" increase of five (5) dBA or more compared to existing conditions on a roadway segment adjacent to a noise sensitive land use.
- The resulting future with project noise level must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 dBA CNEL for residential land uses. The project would considerably contribute to this increase if it contributes a "barely perceptible" three (3) dBA or more to the increase.

Based on the criteria above, noise sensitive uses adjacent to Cahuilla Road east of Joshua Road would meet the criteria for significant cumulative noise impacts. A review of aerial photography shows that approximately 36 existing single-family homes have their front yards facing Cahuilla Road on that segment. It is expected that the front yards of those homes may experience a significant impact; however, due to distance and the shielding by the house structures the rear yards of those homes would remain below 65.0 dBA Ldn.

3.9.4 SIGNIFICANT UNAVOIDABLE IMPACTS

No significant unavoidable impacts related to noise have been identified following implementation of the recommended mitigation measures.

3.10 PUBLIC SERVICES AND UTILITIES

The purpose of this section is to evaluate the public service and utilities impacts of the proposed project under construction and long-term buildout conditions. Mitigation measures are recommended to avoid or minimize impacts. Information in this section is based on the *County of San Bernardino General Plan* (March 2007), the *County of San Bernardino General Plan EIR* (February 2007), the County of San Bernardino Development Code (amended February 2008), the *Water Supply Assessment*, prepared by Terra Nova Planning and Research (adopted November 2008), the *Water Resources Study*, prepared by Terra Nova Planning and Research (July 2009) and the *Hacienda at Fairview Valley Drainage Report*, prepared by Allard Engineering (December 8, 2008). In addition, the evaluation is based upon publications by and/or communications with the following governmental entities:

- Apple Valley Fire Protection District
- San Bernardino County Sheriff's Department
- Apple Valley Unified School District
- San Bernardino County Library
- Southwest Gas Company
- Southern California Edison
- Apple Valley Ranchos Water Company
- County of San Bernardino Solid Waste Management Division
- LAFCO Municipal Services Review/Sphere of Influence Update for the Town of Apple Valley (LAFCO Municipal Services Review/Sphere of Influence Update for the Town of Apple Valley identifies the proposed project as part of future development within the region)

3.10.1 EXISTING CONDITIONS

Fire Protection and Emergency Services

The Apple Valley Fire Protection District (AVFPD) provides fire protection and emergency services to the project area. AVFPD currently employs 52 firefighters, paramedics, and

Emergency Medical Technicians. The Apple Valley Fire Protection District responds to approximately 8,400 emergency calls each year. The Apple Valley Fire Protection District currently operates six (6) fire stations, four (4) of which are staffed 24 hours per day. The two (2) remaining stations are staffed as needed by on-call firefighters. The District provides fire protection for a 206 square mile area. The current ISO rating is 4/9.

The closest AVFPD station is Station 331, located approximately 5.9 miles from the project site at 22400 Headquarters Drive, Apple Valley, CA 92307. Station 331 has a staff of four (4) crew members on 24-hour staffing, including a Captain, engineer, and two (2) firefighters. Station 331 has one (1) Type 1 engine. Station 331 responded to approximately 2,100 emergency calls in the year 2008.

The target response time for AVFPD is under 6 minutes 90 percent of the time. AVFPD has an average response time of approximately 6 minutes. In 2008, the majority of emergency calls were for medical aid, traffic collisions, public assistance, and fire alarms. According to the LAFCO Municipal Services Review/Sphere of Influence Update for the Town of Apple Valley, the Town currently has adequate fire services for its residents.

Police Protection

The San Bernardino County Sheriff's Department provides police protection services to the project area. The San Bernardino County Sheriff's Department includes a staff of over 3,700 personnel. Currently, there are 10 sheriff's stations in the unincorporated jurisdictions and 14 cities that contract with the Department for police services. In addition, the department is also served by nearly 2,000 volunteers that conduct a variety of tasks.

The nearest sheriff's department station to the project site is located at 14931 Dale Evans Parkway, Apple Valley, CA 92307. However, this station does not cover/patrol the project site location. The project area is currently covered by personnel at the Victor Valley County substation. The Victor Valley substation is located at 14455 Civic Drive in the City of Victorville, approximately 15.2 miles from the project site. The average drive time to the project site from the Victor Valley substation is approximately 28 minutes.

The Apple Valley region is currently subdivided into four (4) separate beat patterns for patrol. Calls for service average between 150-200 calls per day over three (3) shifts with approximately 3-5 deputies assigned to patrol each shift. Calls for service typically include 911 follow ups, robbery/burglary alarms, traffic collisions, crime reports, and off-highway vehicle related issues.

Schools

The project site is located within the Apple Valley Unified School District (AVUSD). AVUSD serves over 14,250 students in grades kindergarten through twelfth grade. The district includes

nine (9) elementary schools, three (3) middle schools, one (1) K-8 school, two (2) comprehensive high schools, one (1) continuation high school and an alternative education center. AVUSD also operates nine (9) State pre-school programs on five (5) sites serving over 300 pre school students in a standard based curriculum. In addition, the district's Alternative Education Program serves almost 600 students. AVUSD also has its own police department.

Sycamore Rocks Elementary School, located at approximately 2.2 miles from the project site at 23450 South Road, Apple Valley, would provide elementary school services to the project area. Sycamore Rocks Elementary provides services for grades K-5. The current enrollment of Sycamore Rocks Elementary is 535 students. The current capacity is 545 students.

Vista Campana Middle School, located approximately 6.2 miles from the project site at 20700 Thunderbird Road, Apple Valley, would provide middle school services to the project area. Vista Campana provides services for grades 6-8. The current enrollment of Vista Campana Middle School is 789 students. The current capacity is 1,408 students.

Granite Hills High School, located approximately 4.3 miles from the project site at 22990 Esaws Road, Apple Valley, would provide high school services to the project area. Granite Hills High School provides services for grades 9-12. The current enrollment of Granite Hills High School is 2,056 students. The current capacity is 2,494 students.

Apple Valley Unified School District uses student generation rates as outlined in Table 3.10-1, *Student Generation Rates*, below for estimating the number of students that new development may generate.

Table 3.10-1:
Student Generation Rates

Housing Type	Grades		
	K-5	6-8	9-12
Single-Family	.3309	.0790	.1901

Source: Lynette Kachelmeyer, Apple Valley Unified School District, Personal communication, February 2, 2009.

Parks and Recreation

The desert region of the County has a large range of recreational opportunities. Off-highway vehicle recreation areas in the desert include Spangler Hills, El Mirage, Stoddard Valley, Johnson Valley, Rasor, and Dumont Dunes. National parks in the desert region include Death Valley, Mojave National Preserve, and Joshua Tree. State parks in the region include Providence Mountain State Park and Providence Mountains State Recreation area.

There are also several regional parks within the project's region. Big Morongo Regional Park, Calico Ghost Town Regional Park, Moabi Regional Park, Mojave Narrows Regional Park, and Mojave River Forks Regional Park total 4,996 acres.

In addition to National, State, and Regional parks, the project site is in the vicinity of several local parks located in Apple Valley. Apple Valley currently operates and maintains a Town Hall Recreation Center, Community Center, gymnasium, 13 parks and playgrounds, an equestrian center, and ball fields. The closest local parks to the project site include Virginia Park, located at 17242 Central Road approximately 4.3 miles from the project site, and Sycamore Rocks Park, located at 23450 South Road in Apple Valley approximately 2.5 miles from the project site.

Library Services

The San Bernardino County Library provides library services to the project region. The San Bernardino County Library system currently serves approximately 1.1 million people in 18 cities and all of San Bernardino County's unincorporated areas through 29 facilities and two (2) bookmobiles. The 28 branch libraries have a combined square footage of 177,925, providing an equivalent of 0.21 square feet of library space per person residing in the library's service area.

The nearest San Bernardino County library branch to the project site is the Newton T. Bass Apple Valley Branch, located at 14901 Dale Evans Parkway, Apple Valley, CA 92307, approximately 6.5 miles from the project site. The Newton T. Bass branch opened in 2002, and offers a variety of programs and services to its patrons. The Newton T. Bass branch hosts children, teen, and adult reading programs. In addition, the library includes free internet service, movie nights, tutoring programs, and online services. The library is approximately 19,000 square feet, and includes over 74,000 books, video tapes, CD's, and large print items.

Natural Gas and Electricity

Southwest Gas Company provides natural gas services to the Apple Valley region. Based in Las Vegas, Nevada, Southwest Gas Company provides gas service to over 1.8 million residential, commercial, and industrial customers in Arizona, Nevada, and portions of California. Estimates by the South Coast Air Quality Management District (SCAQMD) indicate that residential customers use an average of about 6,000 kilowatt-hours per year. The closest gas line to the project site is located in the right-of-way of Cuyama Road, approximately 4.3 miles from the project site. Table 3.10-2, *Natural Gas Consumption Factors*, identifies the consumption factors used for various types of development.

Table 3.10-2:
Natural Gas Consumption Factors

Land Use	Annual Usage Rate
Single-Family Residential	6,665.0 cubic feet (cf)/unit/month
Retail/Shopping Center	2.9 cf/ft^2/month

Note: Industrial usage factor used is equivalent to the highest commercial usage factor provided by SCAQMD.
Source: SCAQMD Air Quality Handbook, Appendix to Chapter 9, April 1993.

Southern California Edison (SCE) Company provides electricity service to the Apple Valley region. Four (4) main transmission corridors cross through the Town and provide electricity. SCE administers several energy conservation programs for their customers. SCE offers financial incentives to encourage residents to practice energy conservation and use high-efficiency heating and cooling equipment. SCE is part of the Pacific Inertie system, which generates electricity for 10 western states and distributes electricity generated by the County of San Bernardino throughout the system. SCE's transmission system includes 500 kilovolts (kV) and 230 kV facilities that operate as a network. Table 3.10-3, *Estimated Electricity Usage Rates,* identifies the consumption factors used for various types of development.

Table 3.10-3:
Estimated Electricity Usage Rates

Land Use	Annual Usage Rate
Residential	5,626 kW-hr/unit/yr
Retail Commercial	13.55 kW-hr/ft^2/yr

Source: SCAQMD Air Quality Handbook, Appendix to Chapter 9, April 1993

Water

Water Service Area

The Hacienda at Fairview Valley project site was annexed into the Apple Valley Ranchos (AVR) Water Company's service area in April 2009. Although the area currently has no water system infrastructure in place, the nearest point of connection to existing water services is located approximately one (1) mile west of the project site. AVR was established in 1945 to protect and utilize a portion of the Alto Subarea, which is located in the southern portion of the Mojave Groundwater Basin. AVR currently encompasses a service area of 50 square miles, most of which is located within the corporate limits of the Town of Apple Valley and includes portions of unincorporated San Bernardino County. AVR provides services for domestic water and irrigation water, has approximately 20,000 metered service connections, over 450 miles of water pipeline, 24 wells, 16 emergency generators, 11 storage tanks, four (4) booster pump stations, and 16 pressure zones. The majority of water wells pump directly into the Main Pressure Zone

distribution system. This zone is equipped with elevated storage that is capable of supplying the entire system by gravity flow.

AVR, an investor-owned water utility, is regulated by the California Public Utilities Commission (CPUC). AVR wells are located along the Mojave River and are equipped with stationary emergency generators or quick connections for mobile generator hook-ups. As mentioned above, groundwater is pumped from the Alto Subarea into the AVR distribution system, which has approximately 11 million gallons (MG) of elevated storage capacity. The water distribution system pipelines generally range in size from four (4) inches to 20 inches in diameter. These facilities will require expansion to accommodate development of the Specific Plan and ensure adequate fire flows. This is further discussed under Project Impacts, below.

Existing Water Supply

The Mojave Water Agency (MWA) serves as the Watermaster for the adjudicated Mojave Basin. As the Watermaster it is the responsibility of MWA to manage the Basin's water supply by regulating pumping limits, collecting fees for replacement water, securing additional sources of water and assuring that Subareas are not overdrafted.

The adjudication process of the groundwater in the Mojave Basin began in 1990 with cross complaints filed in 1991. In 1992, numerous parties agreed to conduct good faith negotiations and by 1993, over 75 percent of the parties involved agreed to the Stipulated Judgment, thus binding the involved parties. In 1995, a trial of the non-stipulated parties was completed. The final Judgment was entered in 1996 adopting the Physical Solution. The purpose of the Judgment was to create incentives to conserve local water, guarantee that downstream producers will not be adversely affected by upstream producers, and assess producers to obtain funding for the purchase of imported water. The adjudication is intended to eliminate groundwater overdraft and bring the entire Mojave Basin into balance. The Water Resources Study found in Appendix K further describes the parameters of the Judgment.

Under the Judgment, AVR continues to have the right to pump groundwater from the Alto Subarea. AVR shares a common groundwater source with other water providers, including the Victor Valley Water District and Golden State Water System. Other groundwater users include some individual residents, golf courses, businesses, and commercial facilities.

As mentioned above, AVR's existing water supply is comprised of groundwater from the Alto Subarea, which is one (1) of five (5) Subareas located within the Mojave Basin. The Alto Subarea is managed by Watermaster, and consists of water-bearing strata underlying and paralleling a 35-mile length of the Mojave River. The Alto Subarea generally encompasses the communities of Apple Valley, Victorville, Adelanto, Hesperia, Helendale, and Phelan. The general boundaries of the Alto Subarea are the non-water bearing rocks of the San Bernardino Mountains to the south, the non-water bearing rocks of the San Gabriel Mountains to the west,

and the Helendale Fault to the northeast.

The Alto Subarea is naturally recharged by rainfall and snowmelt in the San Bernardino Mountains, flows within the Mojave River, and subsurface flows between Subareas. Due to its proximity to the headwaters of the Mojave River, the Alto Subarea has the largest water supply in the Mojave Basin. In addition, the Alto Subarea benefits from imported State Water Project (SWP) supplies, reclaimed wastewater, and transfers from other water users as described in the Judgment.

MWA estimated that the total groundwater in storage for the Alto Subarea was 960,000 acre feet in 1999, with an available additional storage capacity of approximately 1.1 million acre feet. Thus, the total storage capacity for the Alto Subarea is estimated at approximately 2.1 million acre-feet.

The Judgment establishes a Free Production Allowance (FPA), which is the amount of water that a producer can pump without incurring a Replacement Water Obligation and is a percentage of the Base Annual Production (BAP). For the 2008-2009 water year the BAP for the Alto Subarea was 114,308 acre-feet and the FPA was 71,598 acre-feet. Replacement Water Obligations paid by a producer include a component for any excess production over FPA, a component to cover the collective share of the Subarea's Makeup Water Obligation, and are calculated to account for transfers, leases, and any Carry Over as described in the Water Resources Study included in this EIR's Appendix K.

As a water purveyor under the Judgment, AVR's FPA for the 2008-2009 water year is set at 7,934 acre-feet per year. In addition to this water supply source, AVR also receives a portion of the Jess Ranch Water Company's FPA, pre-purchased claim water, and leased water rights from other water users.

Jess Ranch, which has a BAP of 7,480 acre-feet, has agreed to provide sufficient pumping rights to serve the Jess Ranch area, with up to 2,500 acre-feet per year of FPA – enough to serve the estimated demand at full buildout – for a period of 99 years. AVR entered into a Water Supply and Surplus Water Contract with Jess Ranch Water Company to receive any portion of their FPA not needed to serve the Jess Ranch area. Assuming full buildout of the Jess Ranch area, AVR may receive up to 1,988 acre-feet of water per year from this source (Refer to Appendix K, *Water Resources Study*).

Through an agreement with MWA, AVR has pre-paid for water that was previously stored in the Alto Subarea. Resolution No. 826-06, included in the Water Resources Study, grants AVR 442 acre-feet every two (2) years through 2012 and 7,293 acre-feet in 2014 for a total of 8,619 acre-feet. This Claim water can be used by AVR to meet future Alto Subarea Replacement Water Obligations. Assuming an annual average delivery over a 22-year period, AVR can be expected to receive 392 acre-feet per year from this water source.

The Judgment establishes provisions for the transfer of unused BAP and FPA rights (called Carry Over) among water users within and between defined Subareas. As reported in MWA's 15th Annual Report, Appendix E, AVR received approximately 4,079 acre-feet of Carryover (2007-2008) FPA water from other water users in the Alto Subarea. Leased Water Rights are based on historical deliveries of water transfers as specified in Appendix E of the Watermaster's Annual Report. Since 2003 AVR has received approximately 18,000 acre-feet of transfers in the form of leased water rights, for an average of approximately 3,600 acre-feet per year (not including leased water from Jess Ranch). See Appendix B of the Water Resources Study (located in Appendix K of this EIR) for historical availability of leased water. Table 3.10-4, *Existing Water Supply Sources*, identifies the existing water supplies available to AVR.

Table 3.10-4:
Existing Water Supply Sources

Supply Source	Quantity (Acre-feet/year)
AVR FPA	7,934
Contract with Jess Ranch WC	1,988
Pre-purchased Claim Water	392
Leased Water	3,600

As mentioned previously, AVR has the right to pump groundwater from the Alto Subarea in order to meet demands. Any amount pumped beyond the FPA and those existing supply sources described above are subject to replacement water obligations. Replacement water is secured either through the payment of established fees or by transferring unused production rights from other producers and is managed by the Watermaster per the Judgment. Through the combination of purchasing replacement water and acquiring transfers at the end of 2008, the Alto Subarea, including AVR, had satisfied all cumulative Replacement Water Obligations.

In addition to the above mentioned supply sources, AVR has also undertaken an aggressive water conservation program that is intended to reduce per capita water demand by as much as 20 percent by 2020.

Groundwater Use

Since 1994, verified groundwater production in the Alto Subarea has ranged from 75,100 to 99,900 acre-feet per year, with an average of approximately 86,900 acre-feet per year, as shown in Table 3.10-5, *Alto Subarea Verified Annual Production*. Due to conservation efforts, verified groundwater production in the Alto Subarea was reduced by approximately 10,000 acre-feet to 89,700 acre-feet in 2008 compared to the previous year.

Table 3.10-5:
Alto Subarea Verified Annual Production

Year	Acre-Feet	Million Gallons
1994	81,100	26,427
1995	75,100	24,471
1996	87,500	28,512
1997	88,500	28,838
1998	75,900	24,732
1999	83,300	27,143
2000	88,300	28,773
2001	82,800	26,980
2002	87,100	28,382
2003	86,700	28,251
2004	92,700	30,206
2005	88,900	28,968
2006	95,900	31,249
2007	99,900	32,553
2008	89,700	29,229

Source: Mojave Basin Area Watermaster Annual Water Reports, 1994-2009.

Of the 89,700 acre-feet of verified production, pumpage within the AVR area of benefit amounted to approximately 14,245 acre-feet, which represents approximately 15.89 percent of the total verified water production within the Alto Subarea. Refer to Table 3.10-6, *Apple Valley Ranchos Annual Production.*

In 2008 AVR had a groundwater production capacity of 42,327 acre-feet per year (13,792 million gallons), or 37.79 million gallons per day (mgd), which is far greater than the amount needed to meet demands as shown in Table 3.10-6, *Apple Valley Ranchos Annual Production*.

Table 3.10-6:
Apple Valley Ranchos Annual Production

Year	Acre-Feet	Million Gallons
1999	14,916	4,860
2000	16,002	5,214
2001	14,741	4,803
2002	15,853	5,166
2003	15,536	5,062
2004	16,100	5,246
2005	16,189	5,275
2006*	15,123	4,928
2007*	16,527	5,385
2008*	14,245	4,642

Source: Urban Water Management Plan, Apple Valley Ranchos, 2005.
**Mojave Basin Area Water Master Plan, Annual Reports 2007 and 2009.*

Also refer to Chapter 3.7, *Hydrology, Drainage, and Water Quality*, for a description of the relevant groundwater basins.

Wastewater

The Town of Apple Valley operates and maintains approximately 140 miles of collector sewer, trunk lines, and interceptors, as well as eight (8) sewer lift stations. This local collection system presently serves portions of the Town of Apple Valley and Sphere of Influence areas. The wastewater is conveyed to intercept lines operated by the Victor Valley Wastewater Reclamation Authority (VVWRA) located adjacent to the Desert Knolls Wash, near Highway 18 and the Mojave River. In addition, many lots within the project area have onsite septic systems.

Victor Valley Wastewater Treatment Plant

The Victor Valley Wastewater Treatment Plant (VVWTP), located at 20111 Shay Road, Victorville, CA, currently treats wastewater generated by the project area. The VVWTP recently underwent an expansion which increased the capacity to 14.5 MGD per day. Construction is currently underway to expand the capacity of the VVWTP to 18 MGD. The expansion will include four (4) new primary clarifiers, four (4) additional aeration basins, a second blower building, four (4) new secondary clarifiers, two (2) new anerobic digesters, seven additional sludge drying beds, four (4) additional percolation ponds, generator upgrades, a new septage receiving station, and miscellaneous improvements. The improvements will prepare the plant to accommodate solids returned to the sewer from the proposed subregional treatment facilities. The expansion of the facility was necessary to accommodate rapid growth in the area's population and higher than expected wastewater flows.

Wastewater Disposal

In 2001, VVWRA opened a septage receiving facility for the disposal of the Victor Valley's septic tank and chemical toilet waste. Each month, VVWRA accepts and treats about 500,000 gallons of septic tank and chemical toilet waste. The VVWTP expansion project, which is currently underway, will include a permanent septage facility to replace the current septage receiving facility.

In 2004, VVWRA completed the construction of the North Apple Valley Interceptor, a 9-mile long regional sewer system serving portions of Victorville, San Bernardino County, and Apple Valley. These interceptor lines carry wastewater to the treatment facilities.

Planned Wastewater Treatment Facilities

VVWRA is currently constructing two (2) subregional reclamation facilities, including a four (4) MGD facility in Hesperia, and a second four (4) MGD facility in Apple Valley near the crossing of Stoddard Wells Road and Interstate-15, which should both be operational by late 2009. Using the subregional reclamation facilities, VVWRA will wholesale recycled water to both public and private water customers in the Victor Valley. By 2020, the flow of wastewater from the service area is expected to be 25.6 MGD, and by 2025, the flow is expected to be 32 MGD.

According to the LAFCO Municipal Services Review/Sphere of Influence Update for the Town of Apple Valley, Town staff indicate that the current sewer capacity and infrastructure is adequate to serve the existing sewer needs within its service area, is in good working condition, and continues to expand with new development. The Town of Apple Valley is currently developing a Sewer System Management Plan. The goal of the Sewer System Management Plan is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system and to minimize the frequency and severity of sanitary sewer overflows. The Plan is estimated to be completed in late 2009.

Solid Waste

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County's solid waste disposal system, which consists of six (6) regional landfills, eight (8) transfer stations, and five (5) community collection centers. The County contracts with Burrtec Waste Industries for disposal site operations and maintenance. The County is responsible for solid waste management in unincorporated County areas.

The Apple Valley region currently contracts with AVCO Disposal Inc., a Burrtec Company, for waste management services. AVCO offers curbside waste pickup. In addition, AVCO offers curbside recycling services.

Solid waste from the project area is taken to the Victorville Landfill, located at 18600 Stoddard Wells Road, Victorville, CA 92307. The County of San Bernardino Solid Waste Management Division owns the Victorville Landfill. However, the County has contracted with Burrtec for the operation and maintenance of the facility. The Victorville Landfill has a permitted site area of 491 acres and a permitted disposal area of 341 acres. The landfill has a permitted maximum disposal rate of 3,000 tons per day. The total estimated permitted capacity for the Victorville Landfill is 83,200,000 cubic yards. The remaining estimated capacity of the landfill is 82,200,000 cubic yards. Waste types accepted at the Victorville Landfill include ash, agricultural, construction/demolition, dead animals, green materials, industrial, mixed municipal, sludge, tires, and wood waste. The estimated closure date for the facility is October 2047.

3.10.2 REGULATORY SETTING

Fire Protection

The Uniform Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

Schools

Senate Bill 50 (SB 50 or "Leroy Greene School Facilities Act"), enacted in 1998, represents the most significant school facility finance and developer fee reform legislation for school facilities construction and modernization since the adoption of the 1986 School Facilities Act. SB 50 provides for three (3) levels of school impact fees.

Level I fees are adjusted bi-annually. Level II and Level III fees can be imposed by the school districts with enrollment growth due to new development after the preparation of a School Facility Needs Analysis, which establishes the need for and calculates the scale of both Level II and Level III fees. The Level II fee program is based on 50 percent funding from the State and 50 percent funding from the local districts, while limiting the obligation of developers to mitigate the impacts of projects on school facilities.

The payment of school mitigation impact fees authorized by SB 50 is deemed to provide full and complete mitigation of project impacts on school facilities. SB 50 provides that a State or local agency may not deny or refuse to approve the planning, use, or development of real property on the basis of a developer's refusal to provide mitigation in amounts in excess of that established by SB 50.

SB 50 authorized Statewide bonds in the amount of $9.2 billion, with $2.9 billion for new kindergarten through 12th grade construction to add capacity to local school districts. In 2002, Assembly Bill 16 modified the School Facility Program and authorized two (2) additional Statewide bond measures. Proposition 47 provided $11.4 billion for kindergarten through 12th grade approved by the voters in November 2002 ($8 billion for new construction). A second bond measure in the amount of $10 billion for kindergarten through 12th grade ($7.7 billion for new construction) was approved by the voters in 2004.

AVUSD has eligibility for State funding, and State funding is available for the foreseeable future. Should State funding not be available, AVUSD would impose Level III fees, providing 100 percent mitigation of project impacts.

Solid Waste

Decreasing landfill disposal capacity and difficulty to site or expand waste disposal facilities led to the passage of the California Integrated Waste Management Act of 1989 (Assembly Bill 939, Chapter 1095, Statutes of 1989, et seq. (AB 939)). AB 939 was adopted in an effort to reduce the volume and toxicity of solid waste that is disposed. AB 939 required all California cities and counties to achieve a 50 percent diversion rate by 2000. San Bernardino County has a Comprehensive Disposal Site Diversion Program, which includes additional fees for dumping solid waste. The additional cost goes to run recycling programs which help communities reach State mandated waste reduction goals.

Water Supply

Senate Bill 610

Senate Bill (SB) 610 requires that public agencies in a position of approving certain projects check with the water agency proposed to serve the project to determine if there are sufficient water supplies available to accommodate the project. SB 610 applies to projects that meet the following criteria:

- A proposed residential development of more than 500 dwelling units.
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.

- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one (1) or more of the projects specified above.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

SB 610 amended Public Resources Code Section 21151.9 to provide that whenever a city or county decides that a project meets any the above criteria, it must comply with Section 10910 *et seq.* of the Water Code. Section 10910 *et seq.* of the Water Code was also amended by SB 610 to require a city or county to coordinate the CEQA analysis with the water agency proposed to serve the project. Section 10910 *et seq*. requires a city or county to identify any public water system that may supply water to a proposed project. The city or county must ask each of these water providers to indicate whether its "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." If the city or county cannot receive this information from the water provider, it must provide the water supply assessment itself.

Apple Valley Ranchos Urban Water Management Plan

Apple Valley Ranchos Water Company completed the most recent Urban Water Management Plan (UWMP) in November 2005 for its service area. The UWMP describes and evaluates water uses and supplies, conservation practices, and reclamation activities within the service area of Apple Valley Ranchos Water Company over the next 20 year period through 2025.

County of San Bernardino *General Plan*

The Circulation and Infrastructure Element of the County *General Plan* includes strategies to support the production of a circulation and infrastructure system consistent with the overall vision specified by the County. The following goals, policies, and programs are applicable to the proposed project:

Goal CI 9: The County will ensure the quality of life by pacing future growth with the availability of public infrastructures.

Policy CI 9.1: Control the timing and intensity of future development and ensure that future development is contingent on the provision of infrastructure facilities and public services.

Policy CI 9.2: Promote the least intensive uses in areas with minimal infrastructure facilities and public services. The more intensive uses are permitted in areas where urban level infrastructure facilities and public services currently exist or can reasonably be extended.

Policy CI 9.4: Ensure that new development pay a fair share of the costs to provide infrastructure facilities required to serve such development. If an applicant is required to pay more than a proportional share, reimbursement agreements or other mechanism shall be used.

Policy CI 9.5: Make available or establish financial mechanisms (such as assessment and community facility districts) to most efficiently spread the cost of necessary infrastructure improvements as determined by the local public agency over all development benefiting from such improvements. Provide legal written notice to all people affected by such financial mechanism cost.

Goal CI 10: Ensure timely development of public facilities and the maintenance of adequate service levels for these facilities to meet the needs of current and future County residents.

Policy CI 10.1: Ensure that adequate facility and service standards are achieved and maintained through the use of equitable funding methods.

Policy CI 10.2: Equitably distribute throughout the County new public facilities and services that increase and enhance community quality of life.

Goal CI 11: The County will coordinate and cooperate with governmental agencies at all levels to ensure safe, reliable, and high quality water supply for all residents and ensure prevention of surface and ground water pollution.

Policy CI 11.1: Apply Federal and State water quality standards for surface and groundwater and wastewater discharge requirements in the review of development proposals that relate to type, location and size of the proposed project to safeguard public health.

Policy CI 11.9: Encourage water conservation, replenishment programs, and water sources in areas experiencing difficulty in obtaining timely or economical water service from existing potential suppliers, or water quality or quantity problems.

Policy CI 11.12: Prior to approval of new development, ensure that adequate and reliable water supplies and conveyance systems will be available to support the development,

consistent with coordination between land use planning and water system planning.

Goal CI 12: The County will ensure adequate wastewater collection, treatment, and disposal consistent with the protection of public health and water quality.

Policy CI 12.10: Because public health and safety are endangered through the establishment of urban uses without adequate sewer service, the County will seek to direct urban development in areas that are served by domestic sewer systems and away from areas in which soils cannot adequately support septic tank/leach field systems.

Policy CI 12.11: Prior to approval of new development, ensure that adequate and reliable wastewater systems will be available to support the development, consistent with coordination between land use planning and wastewater system planning.

Goal CI 13: The County will minimize impacts to stormwater quality in a manner that contributes to improvement of water quality and enhances environmental quality.

Policy CI 13.1: Utilize site-design, source-control, and treatment control best management practices (BMPs) on applicable projects, to achieve compliance with the County Municipal Stormwater NPDES Permit.

Policy CI 13.2: Promote the implementation of low impact design principles to help control the quantity and improve the quality of urban runoff.

Goal CI 16: The County will protect its residents and visitors from injury and loss of life and protect property from fires through the continued improvement of existing Fire Department facilities and the creation of new facilities, but also through the improvement of related infrastructure that is necessary for the provision of fire service delivery such as water systems and transportation networks.

Policy CI 16.3 Encourage development in areas that have adequate infrastructures for the provision of fire service, which include, but are not limited to, water systems capable of delivering appropriate fire flow, and transportation networks that can provide access for fire apparatus and other emergency response vehicles as well as provide efficient egress for evacuees.

Goal CI 17: The County will provide adequate law enforcement facilities to deliver services to deter crime and to meet the growing demand for services associated with increasing populations and commercial/industrial developments.

Goal CI 19: Prior to approving a General Plan Amendment that increases residential densities, the County will ensure that impacts to schools, libraries, and day-care facilities are adequately mitigated.

Goal D/CI 2: Ensure that infrastructure improvements are compatible with the natural environment of the region.

Policy D/CI 2.1: Retain the natural channel bottom for all storm water drainage facilities and flood control channels when such facilities are required for a specific development. This protects wildlife corridors and prevents loss of critical habitat in the region.

Policy D/CI 3.6: Require subdivisions within the region to have all common landscaping be consistent with xeriscape design incorporating drought-tolerant plants as determined by the County and the water supply agency during review of landscape plans.

Policy D/CI 3.7: Encourage the use of ultra-low-flush (ULF) toilets in area with water supply limitations because their use at locations where septic tanks are acceptable can actually enhance septic tank operational efficiency.

Policy D/CI 3.8: The County shall require use of drip irrigation systems or systems of equivalent efficiency for all landscaping at commercial and industrial facilities and all common areas of residential developments. The County shall encourage the use of similar systems on individual residential lots.

3.10.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State *CEQA Guidelines*. For the purposes of this analysis, an impact on public services and utilities is considered significant if the project would result in:

- Substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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;

- The increase in use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- The inclusion of recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- Result in substantial increases in demand necessitating new or extended services in excess of service provider's ability to provide service;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements;
- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- 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;
- Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- Comply with Federal, State, and local statutes and regulations related to solid waste.

Environmental Impacts and Mitigation Measures

Fire Protection Services

3.10-1: *Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 fire protection services.* **Level of Significance: Less Than Significant Impact with Mitigation.**

Onsite Improvements

The project site is currently undeveloped, and therefore, minimal fire protection is required. The project proposes the development of up to 3,114 residential units, open space, and commercial uses, which would increase the demand for fire protection services. Apple Valley Fire Protection District (AVFPD) would provide fire protection services to the proposed project. As stated above, the target response time for AVFPD is under six (6) minutes 90 percent of the time. AVFPD currently has an average response time of approximately 6 minutes. According to AVFPD, the District could serve the project with existing stations, staff, response times, and equipment for a limited time, although at this time AVFPD cannot conclude to what degree service would be affected. The Project Applicant would be required to pay Development Fees to offset the capital costs for fire protection and emergency service.

A two-acre Public Safety Facility site is proposed within the Commercial portion of the project site. In addition, the Project Applicant and AVFPD are currently negotiating a Memorandum of Understanding (MOU) to completely fund the construction for a Public Safety Facility to serve the project site. Space within the Public Safety Facility would be provided for a Fire Station and a Police contact station that would not only serve the project site but surrounding areas as well. Once implemented, the Fire Station would be adequately equipped to provide fire services for the buildout of the project. Implementation of mitigation measures PSU-1 through PSU-3 would reduce fire protection impacts to a less than significant level.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the right of way. The project also includes the development of up to two (2) offsite water tank/reservoir areas. These offsite improvements would create minimal impacts to fire protection services. It is anticipated that these offsite improvements would reduce fire protection response times to remote areas by improving access and fire flows. Less than

significant impacts would occur with implementation of mitigation measures PSU-1 through PSU-3.

Overlay Districts

Golf Course Overlay

Should the golf course overlay be implemented, the golf course would replace a large number of residential units within Villages A and B. Fewer structures would be built should the golf course be implemented, thus reducing demand on fire protection services. Less than significant impacts would occur with implementation of mitigation measures PSU-1 through PSU-3.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. Implementation of the Equestrian Overlay would result in similar demands for fire protection services as described above. Implementation of mitigation measures PSU-1 through PSU-3 would reduce fire protection impacts to a less than significant level.

PSU-1: **Prior to the development of any combustible construction, the development of each phase shall have two (2) points of paved access, or as otherwise approved by the Fire District, for fire and other emergency equipment, and routes of escape which will safely handle evacuations. Each of these access points shall provide an independent route into the area in which the development is located.**

PSU-2: **Unless otherwise approved by the Fire Chief, on-site fire protection water systems shall be designed to be looped and fed from two (2) remote points.**

PSU-3: **The start of construction of the proposed Public Safety Facility shall occur prior the issuance of no more than 2,300 Certificates of Occupancy by the County. The completion of construction of the Fire Station shall occur within 12 months from start of construction.**

Police Protection Services

3.10-2: *Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 police protection services.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

The project site is currently undeveloped, and therefore, minimal police protection is required. The project proposes the development of up to 3,114 residential units, open space, and commercial uses, which would increase the demand for fire protection services. San Bernardino County Sheriff's Department would provide police protection services to the project. As stated above, the project site is located with the limits covered by personnel at the Victor Valley County susbation. The Victor Valley substation is located at 14455 Civic Drive in the City of Victorville, approximately 15.2 miles from the project site. The average drive time to the project site from the Victor Valley substation is approximately 28 minutes. Implementation of the proposed project would impact the Victor Valley substation, as call volume would increase and call response times would increase. The Project Applicant would be required to pay Development Fees to offset the capital costs for police protection services.

A two-acre Public Safety Facility is proposed within the Commercial portion of the project site. Space within the Public Safety Facility area would be provided for a Fire Station and a Police contact station that would not only serve the project site but surrounding areas as well. Once implemented, the County Sheriff Department would be located on the project site and would provide police services for the buildout of the project. Less than significant impacts would occur with implementation of mitigation measure PUS-4.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the right of way. The project also includes the development of up to two (2) offsite water tank/reservoir areas. These offsite improvements would create minimal impacts to police protection services. It is anticipated that these offsite improvements would reduce police protection response times to remote areas by improving access. Less than significant impacts would occur with implementation of mitigation measure PSU-4.

Overlay Districts

Golf Course Overlay

Should the golf course overlay be implemented, the golf course would replace a large number of residential units within Villages A and B. Fewer structures would be built should the golf course be implemented, thus reducing demand for police protection services. Less than significant impacts would occur with implementation of mitigation measure PSU-4.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. Implementation of the Equestrian Overlay would result in similar demand for police protection services as described above. Implementation of mitigation measure PSU-4 would reduce police protection impacts to a less than significant level.

PSU-4: **The construction of the proposed Public Safety Facility shall occur prior the issuance of no more than 2,300 Certificates of Occupancy by the County. The completion of construction of the Public Safety Facility shall occur within 12 months from start of construction.**

School Services

3.10-3: *Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 school services.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The increased population as a result of the proposed project would also generate additional children required to attend public schools in the Apple Valley Unified School District (AVUSD). To evaluate impacts to AVUSD facilities as a result of the proposed project, student generation factors are applied to the future development. As stated previously, the project proposes a total of 3,114 residential units. Of this total, approximately 2,815 units would be deed restricted active adult (55+) units, and the remaining 299 units would be single-family residential units. Because 2,815 of the proposed residential units are age restricted, it is anticipated that only the remaining 299 single-family units have the potential to generate students. As outlined in Table

3.10-7, *Students Generated by the Proposed Project,* the proposed 299 single-family residential units would generate approximately 180 students.

Table 3.10-7:
Students Generated by the Proposed Project

Grade Level	Student Generation Rate*	Total Student Generation
Apple Valley Unified School District		
Kindergarten – 5th Grade	0.3309	99
6th – 8th Grade	0.0790	24
9th – 12th Grade	.1901	57
Total Apple Valley USD		180

**Student Generation Rates based on personal communication with Lynette Kachelmeyer, Director, Facilities and Planning, AVUSD, February, 2009.*

Sycamore Rocks Elementary School would provide elementary school services to the proposed project. Sycamore Rocks Elementary provides services for grades K-5. The current enrollment of Sycamore Rocks Elementary is 535 students. The current capacity is 545 students. As identified in Table 3.10-7, the proposed project would generate approximately 99 elementary school students, for a total of approximately 634 students (535 students currently enrolled + 99 K-5th grade students generated by the proposed project). This total would exceed the school's current capacity of 545 students by 16 percent.

Vista Campana Middle School would provide middle school services to the proposed project. Vista Campana provides services for grades 6-8. The current enrollment of Vista Campana Middle School is 789 students. The capacity is 1,408 students. As identified in Table 3.10-7, the proposed project would generate approximately 24 middle school students, for a total of 813 students (789 students currently enrolled + 24 middle school students generated by the proposed project). This total would increase the school's enrollment by 1.7 percent.

Granite Hills High School would provide high school services to the proposed project. Granite Hills High School provides services for grades 9-12. The current enrollment of Granite Hills High School is 2,056 students. The capacity is 2,494 students. As identified in Table 3.10-7, the proposed project would generate approximately 57 high school students, for a total of 2,113 students (2,056 students currently enrolled + 57 high school students generated by the proposed project). This total would increase the school's enrollment by 2.7 percent.

As stated above, the Project Applicant would be required to pay development impact fees as required by AVUSD in order to offset impacts of additional students generated by the project.

Appropriate school fees would be assessed, as required by State law, at the time of issuance of building permits for the project. Pursuant to Government Code Section 65995, payment of the developer fees required by State law would provide full and complete mitigation of the project's impacts on school facilities. Prior to issuance of the first building permit, the Project Applicant shall pay the required developer fees in compliance with SB 50. Evidence that agreements have been executed shall be submitted to the Building Department, or fees shall be paid with each building permit. Therefore, impacts would be less than significant.

Offsite Improvements

Offsite improvements associated with the proposed project would not generate additional students. Therefore, impacts would be less than significant.

Overlay Districts

Golf Course Overlay

Should the golf course overlay be implemented, the golf course would replace a large number of residential units within Villages A and B, thus reducing the number of students generated by the proposed project. Therefore, impacts would be less than significant.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The EQ Overlay would be located solely on estate residential lots one (1) acre or greater in portions of Village B, C, and D. Implementation of the Equestrian Overlay would not generate additional students, as the number of single-family homes that would be developed would remain the same. Therefore, impacts would be less than significant.

Expansion of Parks

3.10-4: *Implementation of the proposed project may 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.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The project proposes approximately 336 acres of parks, recreation, and open space for use by both the residents of the project as well as regionally. Natural open space would account for approximately 280 acres of the total, while improved parks would account for 38 acres, and recreational lakes, which are part of the project's wastewater treatment system, would account

for 18 acres. Four (4) private park areas, known as Village Commons, would be located within each village that would be connected by a community wide trail system that would support walking, jogging, and hiking. In addition, Fairview Valley Equestrian Park (located in Village B) would be an equestrian friendly facility and staging area for a trailhead into the Quail Spring area and Granite Mountains. It is anticipated that the Fairview Valley Equestrian Park would be a public regional park.

Two (2) types of open space are designated to support the Land Use Plan:

Open Space Recreation (OS-R): This designation would support active and passive recreation areas such as gardens, lawn bowling, putting greens, sports courts, detention basins, clubhouses, and pools.

Open Space Conservation (OS-C): This designation would support areas that have been identified to maintain a more natural environment in order to effectively transition land uses into the Granite Mountains and Fairview Creek. The intent is to integrate the natural environment into each Village. Most areas would designate existing natural features or support transitional areas from the community toward more sensitive natural areas. This designation also supports detention basin locations that function for flood control but remain as open space. Desert-oriented landscaping would support the transition into natural areas.

It is anticipated that the proposed project would generate approximately 6,009 residents (refer to Chapter 3.11, *Population and Housing,* of this Draft EIR). The County has a park requirement of 14.5 acres of undeveloped lands and/or trails per 1,000 population and 2.5 acres of developed parkland per 1,000 population. Using the County's requirement of 14.5 acres of undeveloped lands and/or trails per 1,000 people, the project would be required to provide 86 acres of undeveloped land. As identified in the Specific Plan, the project proposes a total of 280 acres of natural open space, which is significantly greater than the required acreage described in the *General Plan.* Using the County's requirement of 2.5 acres of developed parkland per 1,000 people, the project would be required to provide 14 acres of developed parkland. As identified in the Specific Plan, the project proposes a total of 38 acres of improved parkland, which is significantly greater than the required acreage described in the *General Plan*. Therefore, impacts regarding the expansion of parks would be less than significant.

Offsite Improvements

Nothing proposed as part of the offsite improvements would increase the need for the expansion of parks due to implementation of the proposed project. No impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the number of residential units developed on the project site and increase the amount of open space preserved. Therefore, impacts would be less than significant.

Equestrian Overlay

Implementation of the Equestrian Overlay would not increase the need for additional recreational facilities above and beyond what the project would demand. Therefore, impacts would be less than significant.

Parks and Recreation Services

3.10-5: *Implementation of the proposed project may include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The proposed project would construct recreational facilities, including 336 acres of parks, recreation, and open space for use by both the residents of the project as well as regionally. The system of parks is designed to serve a broad cross-section of residents by providing a diverse mix of active and passive recreational opportunities. The parks proposed in the Specific Plan are in compliance with the County of San Bernardino *General Plan* requirements. The impacts of the implementation of these parks are addressed throughout this Draft EIR. Development of the recreational facilities in the project site would not cause additional adverse physical effects on the environment; therefore, no further mitigation measures would be required.

Offsite Improvements

Recreational facilities are not proposed as part of the offsite facilities. No impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would allow potential future developers an option of constructing a golf course within Villages A and B. An analysis of the impacts associated with the development of the project site (including Villages A and B, where the Golf Course

would be located) is included in this Draft EIR. Development of the Golf Course Overlay would not cause additional adverse physical effects on the environment; therefore, no further mitigation measures would be required.

Equestrian Overlay

Implementation of the Equestrian Overlay would allow equestrian residential development to occur as an option to the base residential land use. An analysis of the impacts associated with the development of the project site is included in this Draft EIR. Development of the Equestrian Overlay would not cause additional adverse physical effects on the environment; therefore, no further mitigation measures would be required.

Library Services

3.10-6: *Implementation of the proposed project may result in substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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 library services.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The proposed project would include the development of 3,114 residential units. It is anticipated that the proposed project would generate approximately 6,009 residents. Development of the proposed project would increase the demand for library services within the Apple Valley region. The County of San Bernardino Library system currently maintains a ratio of 0.21 square feet of library space per person residing within the County's library service system. With the implementation of the proposed project, an additional 1,197 square feet of library space would be needed. This increased demand would be a potentially significant impact to library services. However, the San Bernardino County Library system receives funding from secured property taxes as well as fees for services and State aid. After project implementation, these taxes would also be distributed to the library district. These funds would be used to upgrade and expand existing facilities. Thus, the project's impact to library services would be less than significant.

Offsite Improvements

Implementation of offsite improvements would not affect library services, as no residences are proposed as part of the offsite improvements that would increase population. No impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would not affect library services, as fewer residences would be built, and thus, demand for library services would decrease. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would not increase the demand for library services beyond what is analyzed above. Less than significant impacts would occur in this regard.

Natural Gas Services

3.10-7: *Implementation of the proposed project may result in an increase in demand necessitating the expansion of natural gas services.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

The 2002-2012 Energy Report prepared by the California Energy Commission (CEC) demonstrates that the margin between the State's energy needs and energy supplies is narrow. The energy demand and supply balance would not change unless there is increased generation, decreased demand or an increase in efficiency of use. Implementation of the proposed project would incrementally increase natural gas consumption, but not at a level that would be considered substantial in relation to regional or Statewide energy supplies.

Southwest Gas Company would provide natural gas services to the project site. The Specific Plan includes the development of up to 3,114 residential units and up to 200,000 SF of commercial development. Table 3.10-8, *Proposed Project Natural Gas Consumption,* identifies natural gas consumption generated by the proposed project.

Table 3.10-8:
Proposed Project Natural Gas Consumption

Type of Development at Build-out	Annual Usage Rate	Project Unit No./Square Footage	Projected Monthly Usage at Build-out
single-family dwelling units	6,650.0 cubic feet (cf)/unit/month	3,114 DU	20,708,100 cf
commercial space	2.9 cf/ft²/month	200,000 SF*	580,000 cf
			Total: 21,288,100 cf

Source: SCAQMD Air Quality Handbook, Appendix to Chapter 9, April 1993.
**Assumes a maximum of 200,000 SF of commercial uses, as identified in the Specific Plan.*

As depicted in Table 3.10-8, the proposed project would consume approximately 21,288,100 cubic feet of natural gas per month. The Specific Plan contains provisions for the implementation of Green Development Systems, including energy efficiency standards for the proposed buildings. Implementation of these measures would help reduce the project's energy demand and help reduce the associated impacts with the generation and delivery of natural gas.

Southwest Gas Company currently has existing gas lines in the vicinity of the project site, located in the right-of-way of Cuyama Road, approximately 4.3 miles from the project site. The need for gas transmission improvements would be determined by Southwest Gas Company once applications for service and payments are received by Southwest Gas Company. Once an application and payments are received, planning for gas services can begin concurrent with approval of tentative subdivision plans. Potential impacts from the construction of underground lines would be concurrent and a part of the construction impacts addressed throughout this EIR.

The provision of natural gas services to the project site would be available. However, expansion and upgrading of existing distribution systems would be required for implementation of the project. Implementation of mitigation measure PSU-5 would reduce impacts to a level of less than significant.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the right of way. It is estimated that the overall distance affected by these improvements are approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D. These improvements would occur to existing unimproved roads, and would therefore benefit the County by improving access and infrastructure in and out of the Fairview Valley area.

Construction of offsite infrastructure would not impact the operation and use of natural gas and electricity within the region. Less than significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the demand for natural gas services, as the Golf Course Overlay would replace residences that would be located within Villages A and B. Less than significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would not increase the demand for natural gas services beyond what is analyzed above, as no additional buildings would be constructed should the Equestrian Overlay be implemented. Less than significant impacts would occur in this regard.

PSU-5: **The Project Applicant shall coordinate with Southwest Gas Company regarding the proper extension of natural gas services to the project site. This shall include the development of detailed plans for utility placement and the project's participation in energy conservation programs provided by Southwest Gas Company. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with Southwest Gas Company shall be provided to the County's Land Use Services Department for review and approval prior to the issuance of grading permits. Coordination with Southwest Gas Company will ensure that existing natural gas pipelines and services would not be impacted by implementation of the proposed project.**

Electricity Services

3.10-8: *Implementation of the proposed project may result in an increase in demand necessitating the expansion of electricity services.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

Southern California Edison (SCE) would provide electricity services to the proposed project site. The Specific Plan includes the development of up to 3,114 residential units and up to 200,000 SF

of commercial development. Table 3.10-9, *Proposed Project Electricity Consumption,* identifies electricity consumption by the proposed project.

Table 3.10-9:
Proposed Project Electricity Consumption

Land Use	Annual Usage Rate	Project Unit No./Square Footage	Projected Annual Usage Rate
Residential	5,626 kW-hr/unit/year	3,114 DU	17,519,364 kW-hr/unit/year
Commercial space	13.55 kW-hr/ft^2/yr	200,000 SF*	27,100,000 kW-hr/ ft^2/yr
			Total: 44,619,364 kW-hr/yr

Source: SCAQMD Air Quality Handbook, Appendix to Chapter 9, April 1993.
**Assumes a maximum of 200,000 SF of commercial uses, as identified in the Specific Plan.*

As depicted in Table 3.10-9, the proposed project would use approximately 44,619,364 kilowatt hours per year of electricity. The Specific Plan contains provisions for the implementation of Green Development Systems, including energy efficiency standards for the proposed buildings. The Specific Plan requires that a minimum of 25 percent of the total residential units constructed as part of the project be powered primarily by solar energy. A minimum of 55 percent of these residential units' total annual average electricity demand would be powered by solar energy sources. Implementation of these measures would help reduce the project's energy demand and help reduce the associated impacts with the generation and delivery of electricity.

Electricity lines would be extended within the right-of-way of roads within the project site. The need for electricity transmission improvements would be determined by SCE once applications for service and payments are received by SCE. Once an application and payments are received, planning for electricity services can begin concurrent with approval of tentative subdivision plans. Potential impacts from the construction of underground lines would be concurrent and a part of the construction impacts addressed throughout this EIR.

The provision of electricity services to the project site would be available. However, expansion and upgrading of existing distribution systems would be required for implementation of the project. Implementation of mitigation measure PSU-6 would reduce impacts to a level of less than significant.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Sewer and water pipelines would also be constructed within the right of way, as well as electricity lines. It is estimated that the overall distance affected by these improvements are approximately ¾ of a mile. These offsite improvements would connect Village C to Village D, and would improve overall access for Village D. These improvements would occur to existing unimproved roads, and would therefore benefit the County by improving access and infrastructure in and out of the Fairview Valley area.

Construction of offsite infrastructure would not impact the operation and use of electricity within the region. Conversely, implementation of offsite improvements proposed as part of the project would better serve the project area with electricity services. Less than significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the demand for electricity services, as the Golf Course Overlay would replace residences that would be located within Villages A and B. Less than significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would not increase the demand for electricity services beyond what is analyzed above, as no additional buildings would be constructed should the Equestrian Overlay be implemented. Less than significant impacts would occur in this regard.

PSU-6: **The Project Applicant shall coordinate with Southern California Edison regarding the proper extension of electrical services to the project site. This shall include the development of detailed plans for utility placement and the project's participation in energy conservation programs provided by Southern California Edison. Utility placement shall not conflict with other planned infrastructure improvements such as water distribution systems and site drainage facilities. Evidence of this coordination with Southern California Edison shall be provided to the County's Land Use Services Department for review and approval prior to the issuance of grading permits. Coordination with Southern California Edison will ensure that existing electrical lines and services would not be impacted by implementation of the proposed project.**

Water Supply

3.10-9: *Implementation of the proposed project may result in insufficient water supplies to serve the project from existing entitlements and resources.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

Project Water Demand

The project proposes the development of up to 3,114 residential homes (2,815 active adult and 299 single family residential units), 15 acres of neighborhood commercial uses, and approximately 336 acres of parks and open space. The project area includes a total of 1,557 acres of development, with approximately 1,447 acres considered for water consumption and 80 acres identified for roads. Pursuant to the requirements of SB 610, as adopted in the California Water Code as Sections 10910-10915, a Water Supply Assessment (WSA) was completed for the proposed project and adopted by Apple Valley Ranchos Water Company (AVR) on November 19, 2008.

The projected water demand analyzed in the WSA assumes the most intensive water use scenario, and considers that all feasible water efficient and water saving design features are incorporated at buildout. Actual water demand at buildout is dependent on the level of development that occurs. In addition, the overall demand for water is expected to be somewhat offset by the availability of tertiary treated water, which can be used instead of groundwater for non-potable purposes such as irrigation.

Table 3.10-10, *Proposed Project Estimated Water Service Demands*, presents the projected water demand at buildout of the proposed Specific Plan. The projected water demand for buildout of the proposed project is estimated to be 1,331 acre-feet per year, or 1.19 million gallons per day. This total demand includes all projected onsite water use such as potable water and water used for irrigation purposes. Appendix A of the Water Supply Assessment describes the methodology and factors used to project overall water demand at project buildout.

Table 3.10-10:
Proposed Project Estimated Water Service Demands

Land Use Designation	Landscaping (ac-ft/yr)	Potable (ac-ft/yr)	Total Annual Demand (ac-ft/yr)	Daily Demand (mgd)
Rural Living (RL-2)	69.2	4.2	73.4	0.07
Estate (RS-1)	191.6	22.2	213.8	0.19
Equestrian (R-EQ)	44.8	4.7	49.5	0.04
Very Low (VL)	101.8	15.6	117.5	0.10
Low (L)	165.2	80.7	245.9	0.22
Low-Medium (LM)	129.9	73.3	203.2	0.18
Medium (M)	107.8	74.7	182.5	0.16
Medium-High (MH)	40.3	34.1	74.3	0.07
Commercial (CN)	7.1	14.0	21.1	0.02
Parks Landscape	55.9	0.0	55.9	0.05
Water Features	59.7	0.0	59.7	0.05

Land Use Designation	Landscaping (ac-ft/yr)	Potable (ac-ft/yr)	Total Annual Demand (ac-ft/yr)	Daily Demand (mgd)
Open Space	33.2	1.1	34.3	0.03
Streets	0.0	0.0	0.0	0.00
Total	**1,066.6**	**324.6**	**1,331.2**	**1.19**

Water Supply Impacts from the Proposed Project

As stated above, the main source of potable water for the proposed project would be groundwater from the Alto Subarea, and will be supplied by the Apple Valley Ranchos Water Company. In order to plan for and allow for increased development within the Alto Subarea AVR and the Watermaster, MWA, have developed UWMP's as described above. These planning documents show that with management actions described therein and mentioned below there will be sufficient water supplies available to meet demands during single, normal, and multiple dry years without adversely impacting water supplies or deliveries to existing or planned future water users over the 20 year period analyzed.

The proposed project's estimated water consumption at buildout of 1,331 acre feet per year represents 0.14 percent of the estimated groundwater stored in the Alto Subarea (960,000 acre-feet) and 1.5 percent of the 2008 total verified production for the Alto Subarea (89,700 acre-feet). Therefore, the proposed project will be fully served from existing entitlements and water resources since sufficient water supplies are currently available in groundwater storage.

The 2005 UWMP reports that regional water supplies will primarily be derived from groundwater extractions from the Mojave Basin, recycled water (treated wastewater), and SWP imports. Based on these projections, the 2005 UWMP concluded that regional water demands would be met until at least 2030 during normal, dry, and multiple dry years. In addition, MWA's Regional Water Plan discusses water demand and supply conditions specific to the Alto Subarea. The report determined that implementation of regional water management measures would assure that sufficient water resources were available to meet anticipated demands. As identified in the WSA and the Water Resources Study, there is substantial evidence to support a determination that there are and will be sufficient water supplies to meet the demands of the project and existing and planned future users during normal, dry, and multiple dry year scenarios.

AVR's UWMP also concluded that there are sufficient water supplies and resources currently available to meet projected water demand. However, the availability of water supplies for AVR to meet the demand projections is dependent upon MWA's ability to manage the basin and to continue to implement water projects and management actions necessary to recharge the groundwater basin, maintain groundwater levels, and protect groundwater quality. It should be noted that AVR's 2005 UWMP did not specifically address demand for the proposed project.

However, it did take into account continuing population increase in its service area, some of which may be attributed to the proposed Specific Plan. Nonetheless, the WSA assumes that demand associated with the Specific Plan is in addition to the demand projected in AVR's UWMP as well as other planned future development (North Apple Valley Industrial Specific Plan: NAVISP). The WSA and the Water Resources Study confirms that water demand for the proposed project is anticipated to be met during normal, dry, and multiple dry years through 2030 since sufficient water supplies are currently available and are projected to be available through the planning period.

The MWA UWMP, the AVR UWMP, the WSA, and the Water Resources Study prepared for the project indicate that existing water supplies and resources are and will be sufficient to meet the water demands of the project.

Management Actions

The MWA 2005 UWMP indicates that water demands for the region can be met through 2030 in normal, single and multiple dry year conditions provided that certain conservation, regional recharge and recovery, and other management actions are implemented during this period. Such actions include the following:

- Actions identified as the "highest priority projects," with implementation to begin within 3-5 years, including:
    - Ten (10) percent municipal conservation in the Mojave Basin and five (5) percent in the Morongo Basin/Johnson Valley;
    - Wastewater reclamation in the Alto Subarea;
    - Wellhead treatment in the Alto Subarea;
    - Recharge in the Alto Floodplain and Regional and Warren Valley aquifers;
    - Provide a new water supply for Pioneertown[1].
- Actions "under consideration" for implementation by 2020, including:
    - A regional treatment plan in the Alto Subarea;
    - Recharge in the Alto Transition Zone, Baja, Centro, Este and Oeste, Copper Mountain; Valley and Means/Ames Valley;

[1] 2005 MWA UWMP, page 27

- Provide a new water supply for Hinkley[2].

Project Design Features

The proposed project includes many project design features to increase water use efficiency and decrease water demand. The following project design features have been incorporated into the Specific Plan:

- Require a minimum of 90 percent of all non-turf planting areas in common areas and street right of ways to utilize drought tolerant and/or native plant materials;
- Establish a maximum percentage of turf grass coverage in common and residential front yards for lots ¾ acre and larger (19 percent max) and less than ¾ acre (28 percent max);
- Eliminate "non-functional" turf grass coverage allowed in recreation areas;
- Provide a wastewater treatment system that reuses reclaimed water to irrigate common areas and street right of way landscape;
- Require micro-irrigation systems for watering of plants within common areas and street right of ways;
- Incorporate water saving features and technologies within residential and commercial buildings; and
- Provision of community pool(s) at the community recreation areas within convenient distance from the majority of active adult homes, thus reducing the need for private pools.

Project design features and implementation of mitigation measures PSU-7 and PSU-8, as well as HYD-5 through HYD-9 will reduce water demand generated by buildout of the proposed project and assure that existing water supplies and resources are and will continue to be sufficient to meet water demands generated by the proposed project in addition to existing and planned future users.

Water Resources and Climate Change

The primary concern in dealing with climate change is adequately predicting future hydrological cycles and various other water resource supply conditions so that appropriate

[2] 2005 MWA UWMP, page 27

management techniques can be applied. The most agreed upon effect of climate change is that temperatures are rising and this increase in temperature has the potential to cause a shift in the hydrological cycle. Climate change models generate a variety of future water supply scenarios. Despite these differences, climate models generally agree that a shift in the amount and location of precipitation is taking place and could last for decades.

The project's groundwater water supply is largely protected from the direct impacts of global climate change. Unlike water stored in lakes, reservoirs, and other surface waters, groundwater is largely protected from the direct impacts of climate change since increased temperatures would not result in increased evaporation. Nonetheless, indirect impacts of global climate change could result in the reduction of available water resources. Although it is difficult to predict the extent to which climate change will impact water resources, reducing water demand and increasing water use efficiency can lessen potential impacts. Also, annual variations in available water supplies are anticipated and, therefore, optimal storage of supplies in wet years and prudent management in dry years will also assure overall stable supplies.

Climate change is having an emerging global impact, and is resulting in State and Federal requirements to reduce water consumption over the coming years. In addition to the project design features intended to limited water demands, the project will adhere to all existing and future regulations regarding water resources and climate change.

Offsite Improvements

The project proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Water pipelines would also be constructed within the right of way.

The proposed project also includes the potential development of up to two (2) offsite water tank/reservoir areas, for both potable and reclaimed water storage. The first offsite reservoir would be located north of Mountain View Lane and east of Laguna Seca Road. The second offsite reservoir would be located west of Chicago Road near the Granite Mountain Range.

These offsite improvements would assure that sufficient water supplies are available to serve the project and provide the required storage and pressure to meet fire flow standards. No adverse impacts to water supplies would occur with regard to offsite improvements associated with development of offsite water infrastructure.

Overlay Districts

Golf Course Overlay

The Golf Course Overlay District would allow potential future developers the option of constructing a golf course within Villages A and B. The Specific Plan outlines the following project design features in an effort to reduce water consumption:

- The golf course may not be irrigated with potable water or groundwater; Irrigation shall only come from reclaimed or recycled sources;
- Water features/hazards are prohibited except for ponds utilizing treated effluent for irrigation;
- Turf area shall be limited to 5.5 acres per hole; and
- Drought tolerant or native plants and/or gravel or native soils shall be used except for tee boxes, fairways, and greens.

These project design features would limit the amount of potable water needed to serve the golf course and assure that any potential impacts to water supplies are reduced to less than significant levels. In the event that the Golf Course Overlay is implemented, it would replace approximately 450-500 residential units within Villages A and B, thereby further reducing the overall water demand generated by the project. Due to project-specific design features and the mitigation measures set forth below, the Golf Course Overlay, in conjunction with rest of the project, would not result in significant impacts to water supplies.

Equestrian Overlay

The Equestrian Overlay District would allow equestrian residential development to occur as an option to the base residential land use. The Equestrian Overlay would be located solely on Estate Residential lots 1 acre or greater in portions of Village B, C, and D. With the implementation of project specific design features and those mitigation measures set forth below, the Equestrian Overlay, in conjunction with rest of the project, would not result in significant impacts to water supplies.

PSU-7: **Prior to or concurrent with County approval of any subdivision or land use permit, the applicant shall submit a master landscape plan, plant palette, and irrigation plan, which demonstrates and quantifies irrigation demand associated with the landscape plan, and shall be consistent with the Specific Plan. Apple Valley Ranchos (AVR) Water Company shall review and provide**

comments on the irrigation master plan to the County prior to issuance of water services.

PSU-8: **The Project Applicant shall pay all applicable charges pursuant to AVR's tariffs, approved and in effect at that time, including Supplemental Water Acquisition Fees.**

Also refer to mitigation measures HYD-5 through HYD-9 in Chapter 3.7 of this document.

Water System Facilities

3.10-10: *Implementation of the proposed project may require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

Due to the size of the project site and the natural elevation changes, the project may require the construction of up to three (3) water tank/reservoir areas. Each area would provide space to locate one (1) potable water tank, for domestic uses and one (1) smaller reclaimed water tank, for irrigation and other common area uses, adjacent to each other, if necessary (Refer to Exhibit 2.0-9, *Conceptual Water Plan*). The final number and location of the tank/reservoir sites would be coordinated with AVR Water District and approved by the County during tentative tract map and final map processes once rough pad elevations are established for planning areas within each village. Once pad elevations are established, the appropriate tank/pipe sizing and site locations would be established. The project proposes one (1) onsite water tank/reservoir area south of Cahuilla Road either west or east of Chicago Road within Village C or Village D. Due to the current preliminary state of the development planning and design, the precise location and details for these facilities have not yet been determined. When technical planning and engineering has been completed during subsequent tract map processing with the County, including the project's residential lotting, commercial building square footage, graded pad elevations and street layout, siting of the storage tank will be finalized such that its elevation is at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for this proposed development, the water storage tank at this site which is illustrated on Exhibit 2.0-9, *Conceptual Water Plan* as either Site 3A or 3B must be located such that the base elevation will be between 3,315' above Mean Sea Level (MSL) and 3,365' MSL.

Offsite Improvements

As discussed above, the project includes the development of up to two offsite water tank/reservoir areas. Each site may contain one (1) potable and one (1) reclaimed water tank adjacent to each other. These potential water tank areas may occur off-site, illustrated as Site #1 and Site #2 on Exhibit 2.0-9, *Conceptual Water Plan.* These water tank areas may be located within BLM-managed public lands. If final locations of off-site water tanks, and associated pipeline improvements, are determined by Apple Valley Ranchos Water Company (AVR) to be deemed necessary within BLM-managed public lands due to pad elevations and pressure zone requirements, the applicant and/or AVR shall be required to follow all applicable procedures and abide by regulations for use of right-of-way for such purposes as contained within 43 C.F.R. Part 2800—Rights-of-Way under the Federal Land Policy Management Act, or similar applicable Part, and all applicable Federal and/or State Agency requirements for the identified land. Exhibit 2.0-9, *Conceptual Water Plan*, also illustrates the approximate locations of the booster pump stations (BPSs) and gravity storage water tank sites that will be required for AVR to serve the proposed Hacienda at Fairview Valley Development. The development will be served by two (2) primary pressure zones, each with a booster pump station (BPS) and gravity storage tanks. Due to the current preliminary state of the development planning and design, the precise locations and details for these facilities have not yet been determined. When technical planning and engineering has been completed during subsequent tract map processing through the County, including the project's residential lotting, commercial building square footage, graded pad elevations and street layout, siting of the storage tanks will be finalized.

The approximate primary tank site for this zone is labeled as Site 1 on Exhibit 2.0-9, *Conceptual Water Plan*. While the exact location has not been determined, the elevation for this site must be at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for this proposed development, the water storage tank at Site 1 must be located such that the base elevation will be between 3,315' above Mean Sea Level (MSL) and 3,365' MSL.

Site 2, as shown on Exhibit 2.0-9, *Conceptual Water Plan*, shows the approximate location for the tank that will serve the Upper Fairview Valley Zone. The primary criteria for siting the tank is that it be at least 100 feet above the highest pad elevation in the development being served by this pressure zone. Based on current planning for this proposed development, the water storage tank at Site 2 must be located such that the base elevation will be between 3,610' MSL and 3,660' MSL.

The proposed project also proposes to improve portions of Cahuilla Road and Chicago Road that are located outside of the project area. Water pipelines would be constructed within the right of way to serve residents of the proposed project. The impacts of the implementation of

these facilities are addressed throughout this Draft EIR. Therefore, no significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Water facilities would be constructed regardless of whether or not the Golf Course Overlay was to be implemented. The impacts of the implementation of these facilities are addressed throughout this Draft EIR. Therefore, no significant impacts would occur in this regard.

Equestrian Overlay

Water facilities would be constructed regardless of whether or not the Equestrian Overlay was to be implemented. The impacts of the implementation of these facilities are addressed throughout this Draft EIR. Therefore, no significant impacts would occur in this regard.

Exceedance of RWQCB Wastewater Treatment Requirements

3.10-11: *Implementation of the proposed project may exceed the capacity of the existing wastewater treatment system, and may result in the construction of new facilities or exceed RWQCB wastewater treatment requirements.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The majority of the project site is planned to have residential densities greater than the ½ acre minimum and will require greater wastewater treatment than septic tanks provide. Wastewater collection systems, wastewater treatment and effluent disposal, or reuse will be required for approximately 686 acres and 2,815 residential units. A total of approximately 440 acres planned with 299 residential units on lots greater than ½ acre would qualify for septic tank systems.

Each of the proposed villages will have its own sewer collection system for use with lots less than ¾ acre in size. The sewer collection system will connect to interceptor lines and be treated onsite.

Each of the villages is recommended to have its own wastewater treatment system. The initial phases of each village are recommended to have a package treatment system. The package treatment system is recommended to be sized to handle the first 200 to 250 residential units. When the package treatment system reaches 80 percent capacity, the permanent wastewater treatment system will be designed and submitted for approval by the County.

Each village is recommended to have its own wastewater treatment plant. The treatment system is recommended to have a computerized control system and telemetry to minimize operations man hours and time.

The recreational water features would serve as integral components of the overall wastewater treatment system. During initial development phases, the source of water for these water features could be the following:

- Diverted wastewater from another location; or
- Potable water from the water company.

Once critical mass is reached to support the water levels through reclaimed or treated water and storm drainage systems, any potable water or treated groundwater would be utilized for residential and commercial development within the project area. Another option would be for the water features to remain as OS-C open space areas until the critical mass of development and resulting wastewater and stormwater is reached.

Transmission facilities would largely be constructed within existing roadway right of ways. Septic systems would be constructed within each lot that is large enough to meet the County's requirement. As such, the impacts of either of these options would be primarily limited to short-term construction-related impacts, such as short-term noise, short-term air quality impacts, and temporary traffic delays if travel lane closures are necessary. The proposed project is designed to meet the requirements of the Lahontan Regional Water Quality Control Board. No significant impacts would be expected following the standard construction-related mitigation measures identified throughout this EIR.

Offsite Improvements

Transmission facilities would largely be constructed within existing roadway right of ways. Sewer mains for the proposed project would be located within the Right of Way of Cahuilla Road and Chicago Road. The impacts of the implementation of these facilities are addressed throughout this Draft EIR. Therefore, no significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, it would replace homes in Villages A and B, which would reduce the amount of wastewater generated by the proposed project. Therefore, no significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would allow equestrian residential development to occur as an option to the base residential land use. An analysis of the impacts associated with the development of the project site is included in this Draft EIR. Development of the Equestrian Overlay would not cause additional adverse physical effects on the environment; therefore, no significant impacts would occur.

Storm Drainage Facilities

3.10-12: *Implementation of the proposed project may 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.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The project site currently includes unimproved drainage courses that traverse the project site. The project site drains into two (2) separate watersheds, the Westerly Watershed, and the Fairview Creek Watershed. In addition, the project site is surrounded on three (3) sides by the Fairview and Granite Mountains, and therefore, large areas drain through the project site. If the drainage from these offsite areas together with the onsite drainage area are allowed to drain into Fairview Creek, large channels and underground storm drain systems would be necessary to convey stormwater safely through the proposed project. An increase in potential flooding may occur to downstream properties due to an increase of stormwater runoff created by the proposed project. Therefore, the project proposes the development of onsite detention basins to address the potential increase in runoff. The drainage concept proposed for the project is an expansion of the current Master Plan of Drainage for Apple Valley, which proposes one (1) large detention basin downstream of the project.

Nine (9) detention basins are proposed to detain developed flow rates to below existing levels. Some of the detention basins are proposed to have dead storage available to store debris from upstream undeveloped land. Two (2) regional detention basins are proposed within Village D and would reduce flow rates and size of downstream drainage facilities. The remaining seven basins would reduce developed flow rates to or below pre-developed levels. The nine (9) detention basins would cover a surface area of approximately 58.9 acres. Since the project site currently drains Cahuilla Road in two (2) separate watersheds, the pre-developed and developed condition 100 year event peak flow rates were determined for each watershed. Table 3.10-11, *Peak Drainage Flow Rates,* provides peak flow rates at the crossing of the two (2) watersheds and Cahuilla Road.

Table 3.10-11:
Peak Drainage Flow Rates

	Westerly Watershed	Fairview Creek Watershed	Both Watersheds
Pre-Developed Condition Peak Flow Rate	1,205 cfs	10,926 cfs	12,131 cfs
Reduced Pre-Developed Condition Peak Flow Rate*	1,187 cfs	10,762 cfs	11,949 cfs
Developed Condition Peak Flow Rate	351 cfs	10,760 cfs	11,111 cfs

Source: Hacienda at Fairview Valley Specific Plan Drainage Report, Allard Engineering, 2009.
cfs=cubic feet per second
** The County Basin Policy requires the developed condition peak flow rate to be no more than 90 percent of the pre-developed condition peak flow rate. The entire watershed is approximately 10,205 acres of which the site is approximately 1,557 acres. Therefore, the project is approximately 15.3 percent of the watershed. Applying 90 percent to the 15.3 percent portion of the watershed and 100 percent to the remaining 84.7 percent of the watershed, an effective reduction to the entire pre-developed condition peak flow rate is 98.5 percent.*

The developed condition flow rate is 838 cfs less than the required maximum allowable flow rate. The developed condition flow rate is 93 percent of the pre-developed condition flow rate.

The drainage plan for the Specific Plan depicts preliminary drainage concepts for the proposed project site. Flood protection would be assured through a system of levees, ditches, pipes, and basins. It is anticipated that offsite runoff would be collected and detained in onsite detention basins. Debris and small storm events would be retained in the retention portions of the basins. Larger storm events would exceed the retention storage and be released at a reduced rate from the existing condition.

Implementation of the drainage plan would mitigate the effect on downstream property owners of increased runoff due to development. Therefore, impacts would be less than significant.

Offsite Improvements

The construction of offsite improvements, including two (2) proposed offsite detention basins north of Mountain View Lane, would improve drainage for the project site and surrounding areas. No significant impacts would occur.

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, the same drainage improvements would be constructed. Therefore, no significant impacts would occur.

Equestrian Overlay

Should the Equestrian Overlay be implemented, the same drainage improvements would be constructed. Therefore, no significant impacts would occur.

Wastewater Treatment

3.10-13: *Implementation of the proposed project may result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.* **Level of Significance: Less Than Significant with Mitigation.**

Onsite Improvements

Each of the proposed villages will have its own sewer collection system for use with lots less than ¾ acre in size. The sewer collection system will connect to interceptor lines and be treated onsite.

Each of the villages is recommended to have its own wastewater treatment system. The initial phases of each village are recommended to have a package treatment system. The package treatment system is recommended to be sized to handle the first 200 to 250 residential units. When the package treatment system reaches 80 percent capacity, the permanent wastewater treatment system should be designed, approved, and ready for installation.

Currently, the Victor Valley Wastewater Regional Agency treats the majority of sewage in the Victor Valley. Local cities and County areas have regional sewer interceptors that transport sewage to regional facilities. Solid waste not captured by onsite septic tanks would be transported to Victor Valley Wastewater Treatment Plant (VVWTP). The VVWTP recently underwent an expansion which increased the capacity to 14.5 MGD per day. Construction is currently underway to expand the capacity of the VVWTP to 18 MGD. The expansion will include four (4) new primary clarifiers, four (4) additional aeration basins, a second blower building, four (4) new secondary clarifiers, two (2) new anerobic digesters, seven additional sludge drying beds, four (4) additional percolation ponds, generator upgrades, a new septage receiving station, and miscellaneous improvements. The improvements will prepare the plant to accommodate solids returned to the sewer from the proposed subregional treatment facilities.

The expansion of the facility was necessary to accommodate rapid growth in the area's population and higher than expected wastewater flows. With the implementation of proposed improvements, it is anticipated that VVWTP would have capacity to treat solid waste generated by the proposed project.

As stated above, the proposed project would include the construction and operation of wastewater treatment facilities with each phase of development to accommodate wastewater generated by the proposed project. The County Service Area (CSA) would operate the onsite facilities. The facilities would be designed to meet the requirements of both the CSA and the Lahontan Regional Water Quality Control Board. The CSA would be responsible for ensuring that the size of the wastewater treatment facilities would adequately serve the project. With the implementation of Mitigation Measure PSU-9, impacts would be less than significant.

Offsite Improvements

The proposed offsite improvements would include sewer mains, which would connect the proposed onsite wastewater system. The CSA would be responsible for ensuring that the size of the sewer mains would adequately serve the project. With the implementation of Mitigation Measure PSU-9, impacts would be less than significant.

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, the proposed onsite wastewater treatment system would be constructed to accommodate the Golf Course. Therefore, with the implementation of Mitigation Measure PSU-9, no significant impacts would occur.

Equestrian Overlay

Should the Equestrian Overlay be implemented, the proposed onsite wastewater treatment system would be constructed to accommodate the proposed uses. Therefore, with the implementation of Mitigation Measure PSU-9, no significant impacts would occur.

PSU-9: **Prior to issuance of building permits, the Project Applicant shall submit detailed wastewater system plans to the County Service Area for approval. The wastewater treatment conveyance facilities shall be designed in accordance with County standards and sized to accommodate wastewater flows for the proposed project.**

Landfill Capacity

3.10-14: *The proposed project may not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

Construction and implementation of the Specific Plan would increase the generation of solid waste and the need for additional landfill space. Construction activities will generate various types of solid waste, such as litter and miscellaneous construction debris, which would require disposal in a landfill. However, solid waste generated during construction is anticipated to be minimal and would be temporary in nature. Solid waste generation factors provided by the California Integrated Waste Management Board can be used to project future solid waste generation at project build-out. Table 3.10-12, *Projected Solid Waste Generation at Project Build-out*, describes these factors and applies them to anticipated build-out development.

Table 3.10-12:
Projected Solid Waste Generation at Project Build-out

Type of Development at Build-out	Annual Waste Generation Factor	Project Unit No./Square Footage	Projected Annual Waste Generation at Build-out
single-family dwelling units	2.04 tons/unit	3,114 DU	6,353 tons
commercial space	0.0024 tons/sq. ft.	200,000 SF*	480 tons
			Total: 6,833 tons per year

Source: "Assessments for Solid Waste Impacts," September 1992.
**Assumes a maximum of 200,000 SF of commercial uses, as identified in the Specific Plan.*

As identified in Table 3.10-12, solid waste generated by the proposed project would contribute approximately 6,833 tons per year.

Proposed land uses are not anticipated to produce unusually high quantities of solid waste or unusual hazardous conditions. However, the Specific Plan would result in a significant increase in the volume of solid waste generated over time.

Solid waste generated by the proposed project would be taken to the Victorville Landfill, located at 18600 Stoddard Wells Road, Victorville, CA 92307. The County of San Bernardino Solid Waste Management Division owns the Victorville Landfill. However, the County has contracted with Burrtec for the operation and maintenance of the facility. The Victorville Landfill has a permitted site area of 491 acres and a permitted disposal area of 341 acres. The landfill has a permitted maximum disposal rate of 3,000 tons per day. The total estimated permitted capacity for the Victorville Landfill is 83,200,000 cubic yards. The remaining

estimated capacity of the landfill is 82,200,000 cubic yards. Waste types accepted at the Victorville Landfill include ash, agricultural, construction/demolition, dead animals, green materials, industrial, mixed municipal, sludge, tires, and wood waste. The estimated closure date for the facility is October 2047. In addition, the proposed project would also be required to participate in the County's recycling efforts in order to comply with AB 939. Therefore, because the landfill has additional capacity and the proposed project would be required to comply with AB 939, less than significant impacts are expected to occur.

Offsite Improvements

Construction of the offsite infrastructure improvements described above would potentially create temporary minor construction-related solid waste. Solid waste generated from the construction of the offsite improvements would be temporary and would cease upon completion of construction. As described above, Victorville Landfill has a remaining estimated capacity of 82,200,000 cubic yards. The estimated closure date for the facility is October 2047. In addition, the proposed project would also be required to participate in the County's recycling efforts in order to comply with AB 939. Therefore, because the landfill has additional capacity and the proposed project would be required to comply with AB 939, less than significant impacts are expected to occur.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the generation of solid waste, as the Golf Course Overlay would replace residences that would be located within Villages A and B. Less than significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would allow equestrian residential development to occur as an option to the base residential land use. No additional residential units would be constructed with the implementation of the Equestrian Overlay. Additional equestrian uses could increase the amount of solid waste generated by the proposed project due to additional generation of manure. However, it is anticipated to be minimal. Therefore, implementation of the Equestrian Overlay would result in less than significant impacts to landfill capacity.

Solid Waste

3.10-15: *Implementation of the proposed project may not comply with Federal, State, and local statutes related to solid waste.* **Level of Significance: Less Than Significant Impact.**

Onsite Improvements

The proposed project would be required to comply with all applicable Federal, State, and local statutes related to solid waste. Therefore, less than significant impacts would occur in this regard.

Offsite Improvements

The proposed offsite improvements would be required to comply with all applicable Federal, State, and local statutes related to solid waste. Therefore, less than significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Development associated with the proposed Golf Course Overlay would be required to comply with all applicable Federal, State, and local statutes related to solid waste. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

Development associated with the proposed Equestrian Overlay would be required to comply with all applicable Federal, State, and local statutes related to solid waste. Therefore, less than significant impacts would occur in this regard.

3.10.4 ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts analysis for public utilities relied upon the projections of the *General Plan* and *General Plan EIR*, the 2005 Urban Water Management Plan, and the 2007 Water Supply Assessment prepared for the Hacienda at Fairview Valley Specific Plan. Cumulative impacts relative to public services and utilities would be impacts that result from incremental increases in demands on public services and utilities that would result in cumulative demands beyond the capacity of those public services and utilities.

The County *General Plan EIR* analyzed the long-term development of the County of San Bernardino and found that no significant impacts relative to public services and utilities would

occur with implementation of the County *General Plan* as the County's public services and utilities would be upgraded, constructed, and implemented as development occurs.

As stated above, the Water Supply Assessment is a cumulative analysis in that it considers the project's impacts to water supplies in addition to existing and planned future water users, and assesses the sufficiency of existing entitlements and water resources in meeting water demands for the project as well as existing and planned future water users. As reported above and stated in the WSA and the Water Resources Study, with implementation of mitigation measures and those project-specific design features intended to minimize water demands onsite there are sufficient water supplies currently available to meet the projected demands of the proposed project in addition to existing and planned future users and cumulative impacts to water supplies will be reduced to less than significant levels.

CHAPTER 3.11

POPULATION AND HOUSING

3.11 POPULATION AND HOUSING

The purpose of this section is to discuss the potential population and housing impacts associated with implementation of the proposed Hacienda at Fairview Valley Specific Plan (project). All physical, secondary environmental impacts related to population growth, such as traffic, noise, and water supply, are discussed in their respective subsections of Chapter 3 of this Draft EIR. Information in this section was compiled from the Town of Apple Valley *General Plan* Housing Element (2000), data from the U.S. Census (1990, 2000, and American Community Survey 2007), the California Department of Finance, and the Southern California Association of Governments (SCAG).

3.11.1 EXISTING CONDITIONS

Population

The proposed project site is located in western San Bernardino County, within the unincorporated area of Fairview Valley. The project site is within the Sphere of Influence of the Town of Apple Valley with a population of 70,092 [1], about three (3) percent of the population of the County of San Bernardino (County). The 2008 population of the County was estimated at 2,055,766 by the State of California Department of Finance. [2]

Population increases in the Town of Apple Valley (Town) over the last eight (8) years has averaged around three (3) percent per year. The Town of Apple Valley experienced a rapid steady population growth of 23 percent from 2000 to 2008, which is slightly larger than the 18 percent change from 1990 to 2000. The Town grew more in the past eight (8) years than it did in the decade before. The Southern California Association of Governments projects the population of the Town of Apple Valley to increase by approximately 60 percent to 86,749 people by 2025.[3]

By comparison, the population growth rate of the County is similar to that of the Town. However, the annual growth rate for the County between 2000 and 2008 averaged two (2) percent compared to three (3) percent for the Town. The County grew 21 percent from 1990 to 2000 as compared to the Town which grew 18 percent in the same time. The Southern California Association of Governments projects the County to grow by approximately 62

[1] State of California, Department of Finance, E-1 Population Estimates for Cities, Counties, and the State with Annual Percent Change – January 1, 2007 and 2008. Sacramento, California, May 2008.
[2] State of California, Department of Finance, E-1 Population Estimates for Cities, Counties, and the State with Annual Percent Change – January 1, 2007 and 2008. Sacramento, California, May 2008.
[3] SCAG RTP Growth Forecast by City, Adopted 2008.

percent to 1,063,806 people between 2000 and 2025, when the population is projected to be 2,773,945.[4]

In contrast, unincorporated County grew at a negative rate from 1990 to 2000 at -9 percent mainly due to areas being incorporated into the cities of San Bernardino County. The unincorporated areas grew 2 percent over the past eight (8) years (2000 - 2008). This reflects the incorporation of these growing areas and they continue to grow as shown in the County's growth rates for the same time periods. SCAG projects the population of unincorporated San Bernardino County to increase by approximately 49 percent to 436,081 people between 2000 and 2025.[5] Refer to Table 3.11-1, *Population Trends.*

Table 3.11-1:
Population Trends (Estimate 1990 & 2000-2008) With 2025 Projection

Year	Population	Change	Percent Change
Town of Apple Valley			
1990	46,079	-	-
2000	54,239	(from 1990) 8,160	(from 1990) 18%
2008	70,092	(from 2000) 15,853	(from 2000) 23%
2025	86,749	(from 2000) 32,510	(from 2000) 60%
San Bernardino County			
1990	1,413,830	-	-
2000	1,710,139	(from 1990) 296,309	(from 1990) 21%
2008	2,055,766	(from 2000) 345,627	(from 2000) 20%
2025	2,773,945	(from 2000) 1,063,806	(from 2000) 62%
San Bernardino County, Unincorporated Areas			
1990	322,557	-	-
2000	292,857	(from 1990) -29,700	(from 1990) -9%
2008	298,013	(from 2000) 5,156	(from 2000) 2%
2025	436,081	(from 2000)143,224	(from 2000)49%

Sources:
Town of Apple Valley General Plan Housing Element Update, 2000.
State of California, Department of Finance, E-4 Population Estimates f or Cities, Counties and the State, 2001-2008, with 2000 Benchmark. Sacramento, California, May 2008.
State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. Sacramento, California, August 2007.
Southern California Association of Governments, RTP Growth Forecast by City, Adopted 2008.

Housing

Apple Valley and the surrounding mountains historically involved mining, quarrying, ranching, and agriculture but have now grown into a residential community with a decrease in agriculture. According to the Town of Apple Valley *General Plan*, the lack of infrastructure

[4] SCAG RTP Growth Forecast by City, Adopted 2008.
[5] SCAG RTP Growth Forecast by City, Adopted 2008.

poses constraints on future development in this rural area. Yet, to a large degree, these services have been consciously limited in order to retain a rural life-style and environment in the Town and surrounding environments.[6]

In addition to the incorporated areas of Apple Valley, the Town has a large Sphere of Influence which encompasses 130 square miles of land, which is nearly double the size of the incorporated boundaries of the Town. The availability of land within the Town's sphere of influence increases the potential for new development and growth.[7]

According to the *General Plan*, the desert region of the County has an average of 2.68 persons per household. This is slightly lower than the overall County average household size of 3.31, and slightly lower than the State average household size of 2.94. The average senior household size is 1.8 persons per household (*2008 California Department of Finance (DOF)*. The Town of Apple Valley has a total of 24,925 housing units (May 2008). A majority of those housing units are single detached homes (77 percent) as shown in *Table 3.11-2: Town of Apple Valley Housing Stock*, below.

Table 3.11-2:
Town of Apple Valley Housing Stock

Single Detached	Single Attached	2-4 Units	5+ Units	Mobile Homes
19,380	727	2,089	1,686	1,043
77.7%	2.9%	8.3%	6.7%	4.1%

Source: California Department of Finance 2008

Future Housing Needs

The Department of Housing and Community Development (HCD) determines housing construction needs for the State based on projected growth in population, employment and households. These housing needs are allocated among cities by Regional Councils of Government. The SCAG distributes a regional housing goal number by HCD, and is mandated to allocate the numbers to jurisdictions in the area. The future housing need in the Town of Apple Valley refers to the share of the regional housing need that has been allocated to the Town. Refer to *Table 3.11-3: Regional Housing Needs Allocation Plan*, below for all housing need totals for the Town of Apple Valley and the County.

[6] Town of Apple Valley General Plan Housing Element, 2000.
[7] Town of Apple Valley General Plan Housing Element , 2000, page 48.

Table 3.11-3:
Regional Housing Needs Allocation Plan

	Town of Apple Valley	County of San Bernardino
% very low income households	23.5%	23.3%
% low income households	16.1%	16.2%
% moderate income households	18.9%	18.8%
% above moderate income households	41.4%	41.6%
% Total	**100%**	**100%**
Number of very low income households	912	25,051
Number of low income households	627	17,420
Number of moderate income households	736	20,275
Number of above moderate income households	1,611	24,797
Total	**3,887**	**100,543**

SCAG Regional Council., RHNA Final Allocation Plan 2007.

SCAG adopted its Final Regional Housing Needs Allocation (RHNA) Plan on July 12, 2007 for the planning period of January 1, 2006 - June 30, 2014. The Town of Apple Valley's share of the total SCAG 2007 Regional Housing Needs is 3,887 units. Apple Valley's allocation of very low-income units (23.5 percent) is nearly the same as the County average (23.3 percent), and the allocation of above moderate-income units (41.1 percent) is again similar to the County average (41.6 percent).

Employment

As of 2007, Apple Valley had a labor force of approximately 27,200 people, and a regional labor force of 97,300.[8] The unemployment rate of Apple Valley is 9.4 percent, which is higher than the County's rate of 8.5 percent.[9] Table 3.11-4: *Occupations of Apple Valley Town Residents* and *Table* 3.11-5: *Occupations San Bernardino County Residents,* below, compares each sector and their respective changes from 1990 to 2007.

[8] State of California Employment Development Department Labor Market Information Division, *Labor Force Data For Sub-County Areas,* 2007.
[9] State of California Employment Development Department Labor Market Information Division, *Labor Force Data For Sub-County Areas,* 2007.

Table 3.11-4:
Occupations of Apple Valley Town Residents

Occupation	1990	2000	2007	Percent Change 1990-2007
Civilian employed population 16 years and over	**18,185**	**19,758**	**34,425**	**89%**
Management, professional, and related	4,367	6,143	6,395	46%
Sales and office	5,721	5,269	7,590	32%
Production, transportation, and material moving	2,682	2,769	7,507	180%
Construction, extraction, maintenance, and repair	3,001	2,472	7,231	141%
Service	2,062	3,061	5,654	174%
Farming, fishing, and forestry	352	44	48	-86%

Source: U.S. Census 1990, 2000, and American Community Survey 2007

Table 3.11-5:
Occupations of San Bernardino County Residents

Occupation	1990	2000	2007	Percent Change 1990-2007
Civilian employed population 16 years and over	**591,371**	**661,272**	**863,109**	**46%**
Management, professional, and related	140,624	186,096	237,778	69%
Sales and office	187,926	180,447	239,580	27%
Production, transportation, and material moving	85,388	112,442	133,828	57%
Construction, extraction, maintenance, and repair	90,079	74,519	104,450	16%
Service	76,257	104,728	145,540	91%
Farming, fishing, and forestry	11,097	3,040	1,933	-83%

Source: U.S. Census 1990, 2000, and American Community Survey 2007

Major employers in the Town of Apple Valley are Apple Valley Unified School District (1,770), Saint Mary's Medical Center (1,350), and the Wal-Mart Distribution Center (1,100).[10] According to the U.S. Census and U.S. Department of Finance, the largest employment sector in the Town of Apple Valley is sales and office, employing 7,590 people (22 percent), followed closely by the production, transportation, and material moving sector, employing 7,507 people (21 percent) in 2007. Similarly, the sales and office sector is the largest occupation sector in the County of San

[10] Town of Apple Valley website, Market Profile, 2008.

Bernardino employing 239,580 people (28 percent), followed by the management, professional and related sector employing 237,778 people (27 percent) in 2007.

Jobs-Housing Balance

The jobs-housing balance is a ratio between the number of jobs and the number of housing units within a city. A jobs-housing ratio that is less than 1.0 indicates that the community has more homes than jobs; residents in these communities generally commute to other communities for work. A jobs-housing ratio that is higher than 1.0 indicates that the community has more jobs than homes; employees from other areas commute into these cities for work.

Ideally, the jobs-housing ratio should be close to 1.0, with one (1) job for every household. When the jobs-housing ratios in a region are substantially less or more than 1.0, many residents are required to commute to other communities. These commuting patterns contribute to regional traffic problems and increased vehicle air pollutant emissions and related air quality problems.

The Town of Apple Valley had approximately 24,925 housing units in 2008. The California Department of Housing and Community Development (HCD) provide a target goal of 1.5 jobs per housing unit, and the County of San Bernardino has a target goal of 1.2 jobs per housing unit. The jobs-housing ratio for the Town of Apple Valley is 1.38 (34,425 jobs / 24,925 housing units).

Mean travel time to work, as gathered by the U.S. Census Bureau, is estimated that 72 percent of Apple Valley's employed residents commute outside of the City to work, as compared to only 55 percent of workers Statewide.[11] The Census data shows no change in the percentage of residents working within the Town and out of the Town from 1990 to 2000.

According to the U.S. Census, the percentage of Apple Valley residents commuting over 45 minutes to reach their workplace increased by 24 percent between 1990 and 2000. Tables 3.11-6: *Commuting Times of Apple Valley Town Residents*, and 3.11-7: *Workplace Location of Apple Valley Town Residents*, below outlines employment numbers by workplace location and average commuting times for Apple Valley Town residents. According to the US Census, only 28 percent of Apple Valley's residents work in the Town and the remaining 72 percent of residents work outside of the Town, which may explain the high percentage of residents who commute over 45 minutes to work. The cost of housing drives employees working in other regions (e.g. the High Desert) to relocate to the Town, while still commuting to another employment center.

[11] US Census 1990 and 2000.

Table 3.11-6:
Commuting Times of Apple Valley Town Residents

Travel Time to Work	1990		2000		Percent Change 1990-2000
0 to 14 minutes	5,054	28%	4,827	25%	-4%
15 to 29 minutes	7,052	39%	6,906	36%	-2%
30 to 44 minutes	1,834	10%	1,942	10%	6%
45 minutes or more	3,890	21%	4,821	25%	24%
Work from home	510	2%	862	5%	69%
Workers who did not work from home	17,830	98%	18,496	95%	4%

Source: U.S. Census 1990 and 2000.

Table 3.11-7:
Workplace Location of Apple Valley Town Residents

Workplace Location	1990		2000		Percent Change 1990-2000
In town of Apple Valley	5,182	28%	5,502	28%	0%
Out of town of Apple Valley	13,158	72%	13,856	72%	0%
total	*18,340*	*100%*	*19,358*	*100%*	
In San Bernardino County	15,877	86.6%	17,136	89%	7%
Outside San Bernardino County	2,382	13%	2,006	10%	-15%
Worked out of State	81	.4%	216	1%	166%
total	*18,340*	*100%*	*19,358*	*100%*	

Source: U.S. Census 1990 and 2000.

3.11.2 REGULATORY SETTING

County of San Bernardino *General Plan*

The Land Use Element of the County *General Plan (2007)* provides policy direction for each land use designation, and also provides overall land use policies for the County. According to the County *General Plan*, the purpose of the Land Use Element is to act as a guide for the County's

future development. The following goals, policies, and programs are applicable to the proposed project:

Goal LU 5: **Reduce traffic congestion and air pollution and improve the quality of life for County residents by providing employment and housing opportunities in close proximity to each other.**

Policy LU 5.1: When a change in permitted land use(s) is proposed, review development applications to ensure that housing and employment opportunities (current and projected) are located in close proximity to each other, acknowledging housing and employment opportunities within both unincorporated County areas and cities.

The Housing Element of the County *General Plan* promotes the development of a wide variety of housing to meet the needs of all economic segments of the community. The following goals, policies, and programs are applicable to the proposed project:

Goal H 9: **Because of the various lifestyles and population characteristics of the County's residents, a variety and balance of housing types and densities will be provided, through the *General Plan*, to require that all new planning area or specific plan studies provide housing types and densities commensurate with demonstrated lifestyles, projected needs, and population characteristics of the individual planning area.**

Goal H 13: **Because it is desirable to achieve a job-housing balance, which will further local and regional goals of improved air quality and traffic mobility, industrial and commercial development will be targeted for areas of the County that have an adequate housing supply, and the following action programs will be implemented.**

Goal D/H 1: **Encourage a diversity of housing types that will accommodate all individuals and families from all income levels.**

3.11.3 ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *CEQA Guidelines.* For the purposes of this analysis, an impact on population and housing is considered significant if the proposed project would:

- 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).

Environmental Impacts and Mitigation Measures

Direct Population Growth

3.11-1: *Implementation of the proposed Hacienda at Fairview Valley Specific Plan would directly induce substantial population growth in the planning area.* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

CEQA requires the consideration of the potential direct and indirect growth inducing impacts of a proposed project. Implementation of the proposed Hacienda at Fairview Valley Specific Plan would facilitate the construction of new homes, which in turn would result in direct residential growth. The RHNA allocates up to 20,622 housing units by the planning period ending in 2014 within unincorporated San Bernardino County (including 3,899 moderate income units and 4,802 very low income units).

The proposed project is planned to provide 299 single-family homes and 2,815 homes for active-adult (55+) lifestyles. The active-adult neighborhood lifestyle homes would be deed restricted to support an age-restricted community for occupancy by persons 55 years of age and older as defined and regulated by the Housing for Older Persons Act (HOPA) within the Federal Fair Housing Act (FHA) in effect at the time of final map approvals. The Specific Plan is envisioned to have a resort style recreational atmosphere with equestrian and multi-use trails as well as parks and natural open space. The proposed Specific Plan supports a mix of housing types – rural living, estates, equestrian, and very low to medium high densities – all designed to meet a modest range of income and family needs.

Thus, while the proposed Specific Plan would directly induce population growth within the unincorporated County, the growth would help the unincorporated County meet its target of a wide range of housing types between 2000 and 2025, which is considered a beneficial impact.

Assuming an average household size of 2.68 persons (County *General Plan*, 2007) for single-family residences, the Specific Plan would increase the population of the area by approximately 801 persons (2.68 persons per household x 299 single-family residences). Assuming an average household size of 1.85 persons per senior residential unit, the Specific Plan would increase the population of the area by approximately 5,208 persons (1.85 persons per household x 2,815 senior residences). Therefore, the total population increase generated by the proposed project would be approximately 6,009 persons. Although the proposed project site is located in an

unincorporated portion of San Bernardino County, the proposed project is located in the Sphere of Influence of the Town of Apple Valley. Therefore, population impacts were analyzed based on Town of Apple Valley estimates. This is an approximately 8.5 percent increase in the 2008 population of Apple Valley as reported by the DOF, and approximately 7 percent of the growth anticipated within Apple Valley by 2025. Thus, the amount of new residential growth by the Specific Plan is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town. Therefore, because the population growth associated with the proposed Specific Plan is within the estimates projected by SCAG, the Specific Plan would not exceed the amount of growth projected for the County for the year 2025, and thus would result in less than significant impacts on population growth.

Table 3.11-8, *Existing and Proposed Project Site Population Projections,* identifies the estimated population projections for the project site under existing general plan designations and with the proposed project.

Table 3.11-8:
Existing and Proposed Project Site Population Projections

County of San Bernardino *General Plan*	Proposed General Plan Amendment
RL-5 (up to 191 units at 2.68 people per household =**512** residents)	Single Family residential (up to 299 units at 2.68 people per household = **801** residents)
RL-20 (up to 8 units at 2.68 people per household =**22** residents)	Active Adult residential uses (up to 2,815 units at 1.85 people per household = **5,208** residents)
RL-40 (up to 11 units at 2.68 people per household =**30** residents)	
Estimated Total: 564 residents	***Estimated Total: 6,009 residents***

Offsite Improvements

No direct population growth would occur with the implementation of the proposed project according to the Specific Plan as a result of any offsite improvements. Therefore, less than significant impacts would occur as no residential units are proposed offsite and will not directly impact population growth.

Overlay Districts

Golf Course Overlay

Development associated with the proposed Golf Course Overlay District would potentially decrease the projected population growth of the project site because the golf course would replace a large majority of the housing in Village A and Village B, thus reducing the population. Therefore, less than significant impacts would occur in this regard.

Equestrian Overlay

No direct impacts to population growth would result from the implementation of the proposed Equestrian Overlay District. The proposed Equestrian Overlay District would allow the boarding of horses within portions of the Estate Residential (RS-1) land use designations which it overlays. Therefore, less than significant impacts would occur in this regard.

Indirect Population Growth

3.11-2: *Implementation of the proposed Hacienda at Fairview Valley Specific Plan would indirectly induce substantial population growth.* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

The proposed project would generate new employment opportunities within the Sphere of Influence of the Town of Apple Valley by constructing new neighborhood retail/commercial uses. The project proposes approximately 15 acres of commercial uses that would serve residents in the surrounding areas. Assuming two (2) employees per 1,000 square feet of commercial space, it is estimated that the proposed project site could create up to 400 full-time-equivalent employment positions. Overall, the unincorporated portions of the County are projected to experience a greater increase (66 percent) in the number of jobs than the County as a whole (40 percent). Therefore, the potential increase of approximately 400 jobs with the implementation of the proposed project would fall within the County's projections. Therefore, less than significant impacts would occur.

Offsite Improvements

Although there are no residential units proposed off site, infrastructure improvements would indirectly impact population growth of the future. The proposed project will require offsite improvements to meet the needs of the development. These offsite improvements would be required to comply with all applicable Federal, State, and local statutes related to an increase in population growth. Therefore, less than significant impacts would occur in this regard.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would increase the amount of jobs that the proposed project would generate, and thus, potentially indirectly induce population growth. However, the amount of jobs generated by the Golf Course is anticipated to be minimal, and would fall within the County's projections. Therefore, impacts would be less than significant.

Equestrian Overlay

Implementation of the Equestrian Overlay would not indirectly induce population growth, as the Equestrian Overlay would allow the boarding of horses within portions of the Estate Residential (RS-1) land use designations which it overlays. Therefore, less than significant impacts would occur in this regard.

3.11.4 ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts analysis for population and housing relied upon the projections of the County *General Plan*, *DOF*, *SANBAG*, and *SCAG*. Cumulative impacts relative to population and housing would be impacts that result from incremental increases in population that would result in rampant growth or the displacement of housing or populations. Currently, the site is vacant. The area surrounding the site consists of either vacant land or residential uses.

This EIR section analyzed the long-term development of the Town of Apple Valley and San Bernardino County, and found that no significant impacts relative to population and housing would occur with implementation of the Specific Plan. Implementation of the proposed Specific Plan would not result in more units than envisioned by the *General Plan* or *SCAG* nor would it displace substantial housing or populations.

As this is the baseline for the evaluation of cumulative impacts and the proposed project would not result in substantial population growth beyond that envisioned by the County *General Plan*, Town of Apple Valley, or *SCAG*, nor would substantial housing or populations be displaced, no cumulative impacts relative to population and housing are expected with implementation of the proposed project. Therefore, cumulative population and housing impacts would be less than significant.

CHAPTER 3.12

TRANSPORTATION AND CIRCULATION

3.12 Existing Conditions

The purpose of this section is to establish the conditions of existing roadways and transportation systems, identify potentially significant impacts, and recommend mitigation measures to reduce the significance of such impacts. Information in this section is based on the findings, conclusions, and recommendations of the *Transportation Impact Analysis for the Hacienda at Fairview Valley Specific Plan in the Sphere of Influence of the Town of Apple Valley*, prepared by Urban Crossroads, dated August 2008 (Appendix L), as well as the County of San Bernardino (County) *General Plan* (adopted March 2007), and the County *General Plan EIR* (February 2007).

3.12.1.1 Existing Conditions

Existing Roadway System and Daily Traffic Volumes

All of the roadways in the project area except Happy Trails Highway (SR-18) are two-lane undivided roadways. SR-18 west of Central Avenue is a four-lane divided highway. East of Central Avenue, SR-18 is also a two-lane undivided roadway. The Hacienda and Fairview Valley Traffic Impact Analysis (TIA) identifies that consistent with the San Bernardino Congestion Management Plan (CMP) traffic study guidelines, a *de facto* right-turn lane has been assumed to exist where the outside through lane is greater than or equal to 20 feet.

Exhibit 3.12-1, *Existing Average Daily Traffic*, depicts the estimated average daily traffic (ADT) volumes calculated by Urban Crossroads, Inc, within the project area. The highest daily traffic volumes in the project area occur on SR-18 where the vehicles per day (VPD) exceed 15,100, west of Navajo Road. The daily traffic volume on Cahuilla Road adjacent to the project site is about 600 VPD.

Project Area Intersections

The project area includes 39 intersections, 22 existing intersections and 17 future intersections, identified by County staff. The majority of the future intersections identified are located along the proposed High Desert Corridor, existing dirt roads/future arterial roads, and within the project site. The locations of these intersections are presented in Exhibit 3.12-2, *Intersection Analysis Locations*, below.

Existing Intersections and Level of Service

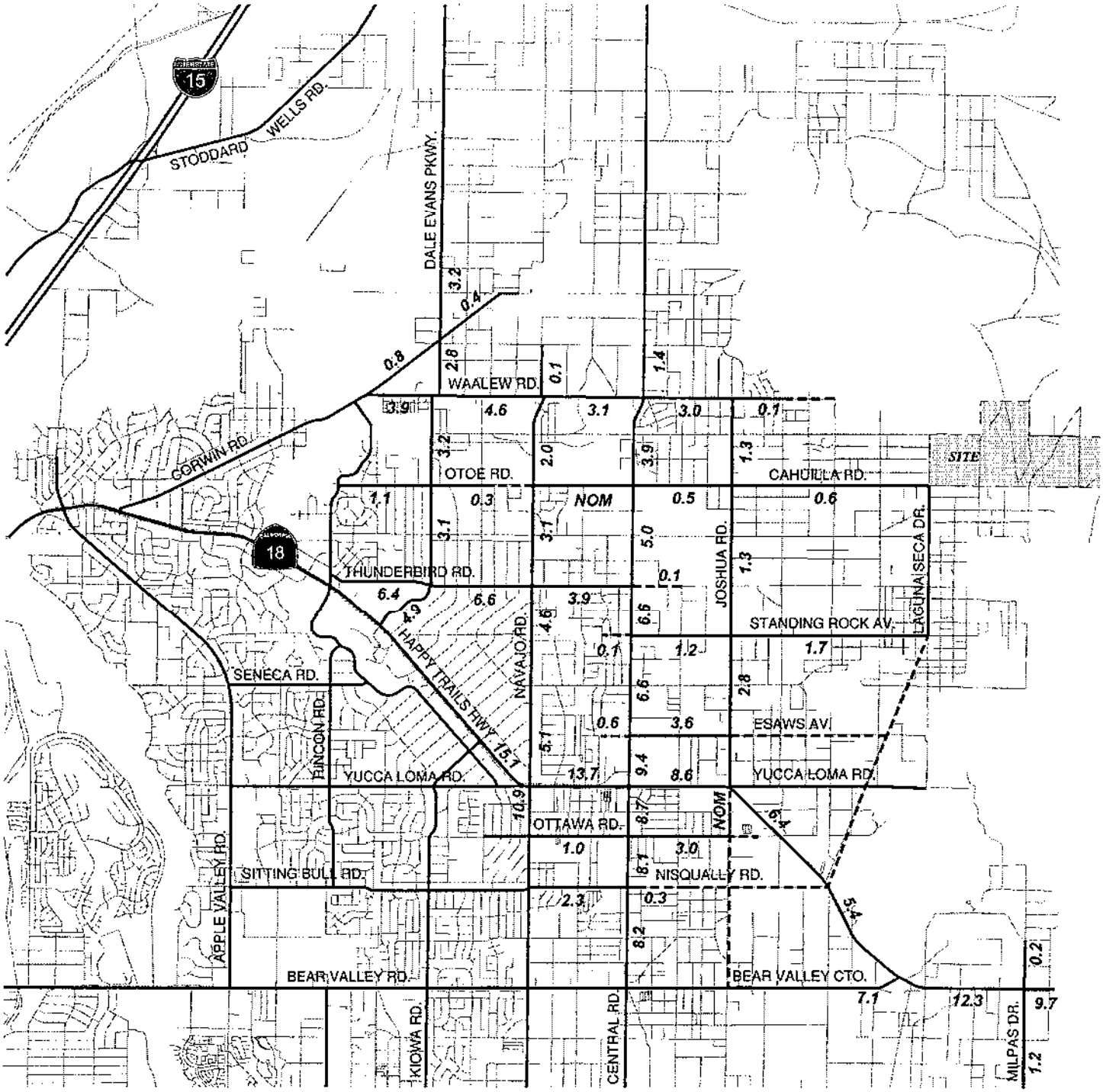
The 22 existing intersections and associated levels of service are outlined below in Table 3.12-1, *Existing Conditions Intersection Level of Service*. The intersections of Central Road/Ottawa Road and Central Road/Nisqually Road are deficient in the AM peak hours by Town of Apple Valley

and County standards with Level of Service (LOS) D or below. In addition, the intersections of SR- 18/Bear Valley Road and Milpas Drive/Highway 18 are deficient in the PM peak hours by Town of Apple Valley and County standards with LOS D or below.

Table 3.12-1:
Existing Conditions Intersection Level of Service

Intersection	Traffic Control	Delay (seconds)		Level of Service	
		AM	PM	AM	PM
Dale Evans Parkway (NS) at:					
• Corwin Road (EW)	CSS	10.2	12.0	B	B
South Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	10.5	13.1	B	B
North Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	11.4	12.4	B	B
Dale Evans Parkway (NS) at:					
• Otoe Road (EW)	CSS	9.9	11.0	A	B
• Thunderbird Road (EW)	AWS	20.1	11.4	C	B
Navajo Road (NS) at:					
• Waalew Road (EW)	AWS	8.7	8.3	A	A
• Thunderbird Road (EW)	AWS	10.8	10.1	B	B
• Highway 18 (EW)	TS	15.5	16.9	B	B
Central Road (NS) at:					
• Waalew Road (EW)	AWS	8.3	8.4	A	A
• Cahuilla Road (EW)	CSS	10.5	11.3	B	B
• Thunderbird Road (EW)	CSS	13.5	13.6	B	B
• Standing Rock Avenue (EW)	CSS	12.1	12.8	B	B
• Esaws Avenue (EW)	TS	33.7	31.5	C	C
• Highway 18 (EW)	TS	15.1	14.6	B	B
• Ottawa Road (EW)	CSS	--	15.9	F	C
• Nisqually Road (EW)	CSS	34.9	17.1	D	C
Joshua Road (NS) at:					
• Waalew Road (EW)	CSS	9.3	9.2	A	A
• Cahuilla Road (EW)	CSS	9.2	9.5	A	A
• Standing Rock Avenue (EW)	AWS	7.8	7.7	A	A
• Highway 18 (EW)	CSS	15.0	23.2	C	C
Highway 18 (NS) at:					
• Bear Valley Road (EW)	CSS	11.2	28.6	B	D
Milpas Drive (NS) at:					
• Highway 18 (EW)	CSS	18.2	30.6	C	D

Source: Urban Crossroads, 2008.



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

RBF CONSULTING

NOT TO SCALE

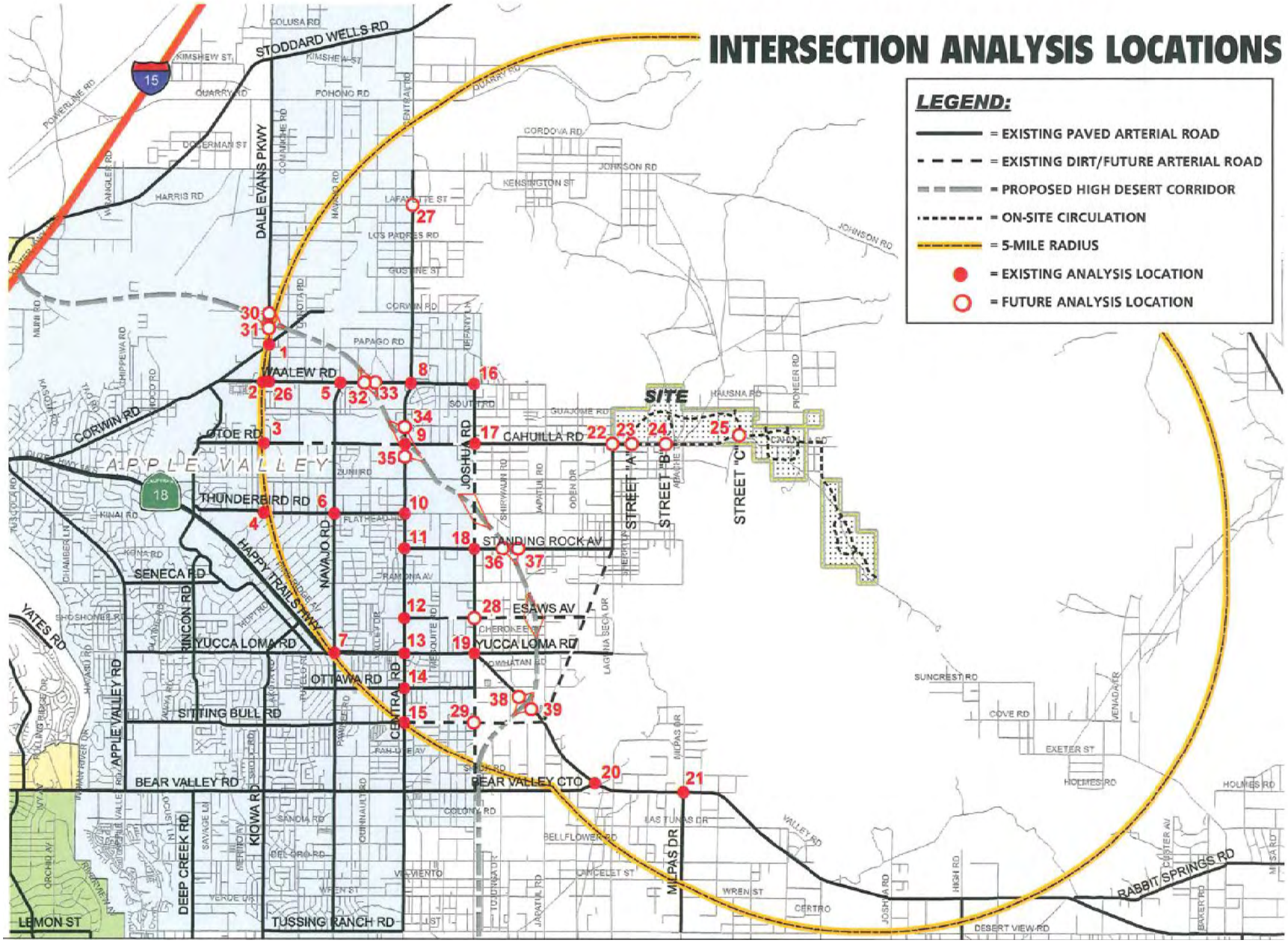
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

EXISTING AVERAGE DAILY TRAFFIC (ADT)

Exhibit 3.12-1

This page was intentionally left blank



NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

INTERSECTION ANALYSIS LOCATIONS

Exhibit 3.12-2

This page was intentionally left blank

Future Intersection Analysis Locations

The following 17 future intersections were defined through discussions with County staff. As previously stated, the majority of these intersections are located along the proposed High Desert Corridor, existing dirt roads/future arterial roads, and within the project site:

Dale Evans Parkway (NS) at:

- High Desert Corridor Westbound Ramps (EW)
- High Desert Corridor Eastbound Ramps (EW)

High Desert Corridor Southbound Ramps (NS) at:

- Waalew Road (EW)

High Desert Corridor Northbound Ramps (NS) at:

- Waalew Road (EW)

Central Road (NS) at:

- La Fayette Road (EW)
- High Desert Corridor Westbound Ramps (EW)
- High Desert Corridor Eastbound Ramps (EW)

Joshua Road (NS) at:

- Esaws Avenue (EW)
- Nisqually Road (EW)

High Desert Corridor Southbound Ramps (NS) at:

- Standing Rock Avenue (EW)

High Desert Corridor Northbound Ramps (NS) at:

- Standing Rock Avenue (EW)

High Desert Corridor Southbound Ramps (NS) at:

- Highway 18 (EW)

High Desert Corridor Northbound Ramps (NS) at:

- Highway 18 (EW)

Laguna Seca Drive (NS) at:

- Cahuilla Road (EW)

"A" Street (NS) at:

- Cahuilla Road (EW)

"B" Street (NS) at:

- Cahuilla Road (EW)

"C" Street (NS) at:

- Cahuilla Road (EW)

Existing Level of Service and Intersection Operations

Existing intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts conducted by Urban Crossroads, Inc. The AM peak period traffic volumes were determined by counting the two-hour period between 7-9 AM in the morning. Similarly, the PM peak hour traffic volumes were identified by counting the two-hour period from 4-6 PM in the evening. The results of the existing peak hour traffic operations and level of service are shown in Table 3.12-1, *Existing Conditions Intersection Level of Service*, above. The project area existing intersections currently operate at acceptable levels of service during the peak hours except the following intersections per the various local jurisdictions' criteria:

- Central Road (NS) at:
    - Ottawa Road (EW)
    - Nisqually Road (EW)
- Highway 18 (NS) at:
    - Bear Valley Road (EW)
- Milpas Drive (NS) at:

- Highway 18 (EW)

Based on the existing traffic volumes and roadway geometries, the following existing intersections were determined to need traffic signals:

- North Dale Evans Parkway (NS) at:
  - Waalew Road (EW)
- Central Road (NS) at:
  - Ottawa Road (EW)
- Highway 18 (NS) at:
  - Bear Valley Road (EW)

Planned Transportation Improvements

The long range transportation system within the project area is expected to undergo improvements by the Town of Apple Valley and County. These improvements are subject to the Town of Apple Valley and County *General Plan* Circulation Elements and roadway cross-sections. Please refer to Exhibits 3-E through 3-H in the *Traffic Impact Analysis* (TIA) prepared by Urban Crossroads, 2008 (located in Appendix L).

Inconsistencies between the Town of Apple Valley *General Plan* and the County *General Plan* are in section 3.12.2 below, as it is important to note the differences of the right-of-way designations.

Funded Roadway Improvements Unrelated to the Project

No other committed sources of funding for additional improvements necessary to correct existing deficiencies or severe future increases in traffic are currently in place. The analyses in the TIA assume no additional funded improvements beyond the following discussed below.

A number of other major regional transportation improvements unrelated to the project are moving forward and are at least partially funded through the South/East Apple Valley Local Area Transportation Facilities Plan or other funding sources such as Measure "I" sales tax revenue. Measure "I" is a 20-year half-cent transportation sales tax adopted by the County in 1989 for transportation improvements.[1] The long range traffic model reflects these reasonably

[1] SANBAG, 2006.

foreseeable transportation improvements. Roadways that fall into the category and directly affect the project area include:

- the construction of Joshua Road, from Standing Rock Road to Highway 18 to four (4) lanes;
- the widening of Highway 18, from Joshua Road to Pioneer Road to six (6) lanes; and
- construction of Joshua Road, from Highway 18 to Bear Valley Cutoff to four(4) lanes.

Regulatory Framework

Town of Apple Valley *General Plan*

The long range transportation system within the project area is expected to undergo planned improvements by the Town of Apple Valley. The Town of Apple Valley *General Plan* Circulation Element was recently adopted in September of 2006. The Town of Apple Valley *General Plan* Circulation Element indicates the future presence of the High Desert Corridor and future intersections while the County *General Plan* Circulation Element does not.

County of San Bernardino *General Plan*

The long range transportation system within the project area is expected to undergo improvement as a result of planned improvements by the County. The County *General Plan* Circulation Element does not indicate the future presence of the High Desert Corridor as the Town of Apple Valley *General Plan* Circulation Element does. Other inconsistencies exist between the two (2) Circulation Elements, including the variation of through travel lanes, typical roadway cross-section widths, and road classification types. The County Circulation Element also identifies Cahuilla Road and Chicago Road through the project site as existing secondary highways, although these roads are currently unpaved. The County Circulation Element also identifies a connection on the eastern boundary of the project site to Granite Mountain Road and SR-247. However, the existing topography along this identified connection consists of mountainous terrain characterized by significant elevation changes and grade differentials which would make a two (2) lane limited access collector difficult and costly to construct.

County of San Bernardino *General Plan* Circulation and Infrastructure Element

The Circulation and Infrastructure Element of the *General Plan* includes strategies to support the production of a circulation and infrastructure system consistent with the overall vision specified by the County. The following goals, policies, and programs are applicable to the proposed project:

Goal CI 1: **The County will provide a transportation system, including public transit, which is safe, functional, and convenient; meets the public's needs; and enhances the lifestyles of County residents.**

Policy CI 1.1 The County's comprehensive transportation system will be developed according to the Circulation Policy Map (the Circulation Element Map), which outlines the ultimate multi-modal (nonmotorized, highway, and transit) system to accommodate the County's mobility needs and provides the County's objectives to be achieved through coordination and cooperation between the County and the local municipalities in the County, adjacent counties and cities within those counties, the California Department of Transportation, and SANBAG.

Goal CI 2: **The County's comprehensive transportation system will operate at regional, countywide, community, and neighborhood scales to provide connectors between communities and mobility between jobs, residences, and recreational opportunities.**

Goal CI 3: **The County will have a balance between different types of transportation modes, reducing dependency on the automobile and promoting public transit and alternate modes of transportation, in order to minimize the adverse impacts of automobile use on the environment.**

Goal CI 4: **The County will coordinate land use and transportation planning to ensure adequate transportation facilities to support planned land uses and ease congestion.**

Policy CI 4.1: Ensure appropriate legal and physical access to land prior to final approval of land divisions or new development.

Policy CI 4.2: To reduce the dependence on the automobile for local trips, integrate transportation and land use planning at the community and regional levels by promoting transit-oriented development (TOD), where appropriate and feasible.

Policy CI 4.6: Ensure that applicants, subdividers, and developers dedicate and improve right-of-way per County standards and contribute to their fair share of offsite mitigation.

Goal CI 5: **The County's road standards for major thoroughfares will complement the surrounding environment appropriate to each geographic region.**

Policy CI 5.1: Implement appropriate design standards for all types of highways as shown in Chapter 83.23 of the County Development Code.

Policy CI 5.3: Limit, where feasible, access along all roads intersecting major and secondary highways for a distance of 600 feet from the centerline of said highways to the maximum extent possible.

Policy CI 5.4: Utilize road standards appropriate to geographic constraints and which complement the surrounding environment (see Chapter 83.23 of the Development Code).

Policy CI 5.5: Public roadways should be developed consistent with the road standards as indicated in Chapter 83.23 of the Development Code.

Policy CI 5.6: For privately maintained roads, the minimum width should be: (a) no less than a 24-foot-wide (paving, curbs and gutters) with no parking allowed; (b) 30-foot-wide (paving, curbs and gutters) with parking allowed on one (1) side; or (c) a 36-foot-wide (paving, curbs and gutters) with parking allowed on both sides.

Policy CI 5.7: During the review of proposed *General Plan* amendments or the development of specific plans, ensure accessibility to the site(s) including the quality of existing or proposed roads that will provide access.

Goal CI 6: The County will encourage and promote greater use of non-motorized means of personal transportation. The County will maintain and expand a system of trails for bicycles, pedestrians, and equestrians that will preserve and enhance the quality of life for residents and visitors.

Policy CI 6.1: Require safe and efficient pedestrian and bicycle facilities in residential, commercial, industrial, and institutional developments to facilitate access to public and private facilities and to reduce vehicular trips. Install bicycle lanes and sidewalks on existing and future roadways, where appropriate and as funding is available.

San Bernardino Association of Governments

The San Bernardino Association of Governments (SANBAG) transportation model has been used to evaluate the select zone (trip distribution) analysis for the proposed development as well as the distribution and likely travel routes of the project traffic for year 2030 conditions.

Traffic Study Methodology and Background

The preparation of the study used in this section is in conformance with the requirements of the 2005 County Congestion Management Program (CMP) and traffic study guidelines. A CMP traffic study is technically no longer required as the County and the Town of Apple Valley have updated their impact fee programs pursuant to the requirements of the Nexus Study of the CMP document. However, the County continues to use the CMP traffic study guidelines as the basis for their own independent traffic study requirements and was completed in line with the direction of County staff.

The CMP requires no analysis further than five (5) miles from the site or where less than 50 project trips are added to a CMP intersection and 100 or less peak hour project (two [2] ways) are added to freeway segments. In accordance with CMP requirements, both Interim Year analysis and Long Range Horizon Year analysis are included in the study. As portions of the project (Village A and Village B) are proposed to be completed by 2020, the project Interim Year condition is 2020 for analysis purposes. The report also evaluated Long Range Design Horizon Year (2030) conditions when the project is fully occupied.

The traffic study also satisfies the requirements of the California Department of Transportation (Caltrans) and is required to evaluate State highways where 50 to 100 trips are assigned to the State Highway system (which is generally consistent with the CMP traffic study guidelines).

Analysis Methodology and Significance Criteria

The following traffic analysis methodologies are consistent with the County CMP. The following analysis years were considered in the TIA:

- Existing Conditions – 2007
- Interim Year – 2020
- CMP Horizon Year – 2030

Traffic conditions were evaluated for existing conditions and two (2) future horizon years. Traffic counts were conducted by Urban Crossroads, Inc. in December 2007 to quantify existing traffic conditions. AM and PM traffic hours were considered in the analysis in accordance with the CMP. The Horizon Year (2030) without project traffic volumes were derived from the subregional travel demand model currently being used for long range planning in the County.

The County provided direction to utilize the Comprehensive Transportation Plan (CTP) traffic model, which is the only approved travel demand forecasting tool within the project area, for the passenger car model and truck model. The overall model growth and factor for the CTP

passenger car model was adjusted from a base year of 2000 and a horizon year to 2025, reflecting a 25-year growth period, to a base year of 2007 and horizon year of 2030, reflecting a 23-year growth period. The CTP truck model overall model growth and factor were similarly adjusted. The CTP truck model has a base year of 1994 and horizon year of 2020. However, SANBAG has directed that all analysis assume that the 1994 base year is functionally equivalent to 2000 conditions, reflecting a 20-year period to 2020 conditions and yet again adjusted for 2030 conditions, reflecting 23 years of growth from 2007 to 2030.

The analysis methods outlined in the Transportation Research Board's Highway Capacity Manual (HCM) (2000) were used in the TIA. The results of this analysis on operational performance of a roadway network are commonly described using a grading system called level of service or LOS. LOS is a description of intersection operating conditions, ranging from LOS A (free flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays), as shown in Table 3.12-2*: Definitions of Level of Service for Uninterrupted Flow.*

Table 3.12-2:
Definitions of Level of Service for Uninterrupted Flow

LOS "A"	Represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
LOS "B"	Is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
LOS "C"	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
LOS "D"	Represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
LOS "E"	Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
LOS "F"	Is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, Inc., 2008.

The HCM methods for calculating LOS and significance criteria for signalized intersections, unsignalized intersections, and freeway segments are described below. Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas. The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control.

Level of service is dependent on the quality of traffic flow at the intersections along the roadway. The levels of service for the study used in this analysis were calculated using HCM methodology, which expresses the level of service at an intersection in terms of delay time for the various intersection approaches, and uses different procedures depending on the type of intersection control.

Signalized Intersections

For signalized intersections, average total delay per vehicle for the overall intersection is used to determine level of service.

All Way Stop (AWS)

For all way stop (AWS) controlled intersections, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the flow of the main street. The level of service for this type of intersection analysis is also based on average total delay per vehicle for the overall intersection.

Stop Sign Controlled

The project area intersections, which are stop sign controlled on the minor streets only, have a level of service that is dependent on the occurrence of gaps in the traffic flow of the main street. The level of service criteria for this type of intersection is based on total delay per vehicle for the worst minor street movement(s).

Table 3.12-3: *Levels of Service in Terms of Average Total Delay per Vehicle*, below, shows the LOS methodologies.

Table 3.12-3:
Levels of Service in Terms of Average Total Delay per Vehicle

Level of Service	Average Total Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, Inc., 2008.

Definition of Deficiency and Significant Impacts

The following definitions of deficiencies and significant impacts have been developed in accordance with the Town of Apple Valley and County CMP requirements and County *General Plan* requirements.

Peak hour intersection operations of LOS "C" or better are generally acceptable. Therefore, any intersection in the Town of Apple Valley or unincorporated County at LOS "D" to "F" would be considered deficient. Deficient intersections have been further evaluated to identify:

- Evaluations of the mitigation measures required to restore operations to an acceptable level of service with respect to county and local jurisdiction LOS standards.
- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable level of service.
- Calculation of the project share of new traffic and improvement costs on the impacted facility during peak hours of traffic.

Additionally, a threshold of significance has been identified where the project contributes 50 or more peak hour trips in conjunction with an intersection exceeding the allowable level of service.

3.12.1.1 Project Conditions

The proposed project includes a maximum of 3,114 residential units, including 299 single family residential units, 2,815 senior (active) adult residential units, and up to 200,000 square feet (TSF)

of neighborhood commercial development. The proposed project would have five (5) access points along Cahuilla Road.

Construction Traffic

The proposed project would include the development of residential, commercial, and open space uses, as well as associated infrastructure. This development would be developed in phases, and therefore, construction traffic would occur throughout the buildout of the proposed project. Construction traffic would be considered temporary with the development of each phase of the proposed project. Short-term impacts would cease upon completion of project construction. As required by the County, short-term impacts for roadways would be reduced by implementation of a Traffic Management Plan (TMP), which would be prepared by a Registered Civil Engineer and subject to approval by the County prior to construction activities. The TMP would delineate routes of minimal impact, potential lane closures, and permitted hours of construction activity.

Trip Generation

Trip generation calculation rates from the most recent Institute of Transportation Engineers Trip Generation Rates, (7th Edition) were used in the TIA. Given the mix of uses proposed as a part of the planned development, it is expected that a portion of the trips generated by the proposed project would consist of dual-purpose or internally captured trips. In addition, not all of the vehicle trips expected to be generated by the commercial component of the proposed project would be new trips on the roadway network. A significant amount of these trips would consist of pass-by trips or vehicles already traveling along these roadways adjacent to the project site for other purposes that would patronize the proposed development in conjunction with their trip and then continue on to their original destination.

As shown in Table 3.12-4, *Project Trip Generation Summary*, Phase 1 of the proposed development is projected to generate 13,197 trip-ends per day with 589 vehicles per hour during the AM peak hour and 1,097 vehicles per hour during the PM peak hour. The overall proposed development is projected to generate 19,432 trip-ends per day with 965 vehicles per hour during the AM peak hour and 1,592 vehicles per hour during the PM peak hour by the project buildout.

Table 3.12-4:
Project Trip Generation Summary

Village	Land Use	Quantity and Units	Peak Hour		Daily
			AM Total	PM Total	
Phase 1 - 2020					
Village A	Single-Family Detached	55 DU	41	56	526
	Senior Adult Housing	1,349 DU	270	351	5,005
	Shopping Center	200 TSF	236	988	10,656
		Subtotal	**547**	**1,395**	**16,187**
Village B	Single-Family Detached	74 DU	56	75	708
	Senior Adult Housing	224 DU	45	58	831
		Subtotal	**101**	**133**	**1,539**
Subtotal Phase 1			648	1,528	17,726
Internal Trips (Residential)[1]			0	-105	-1,066
Internal Trips (Commercial)[1]			0	-105	-1,066
Net External Trips (Commercial)			236	883	9,590
"Pass-By" Trips (25% - Commercial Only)[2]			-59	-221	-2,398
Total Reduction (Phase 1 Only)			-59	-431	-4,530
Total External Trips (Phase 1)			**589**	**1,097**	**13,197**
Phase 2 – Long Range					
Village C	Single-Family Detached	98 DU	74	99	938
	Senior Adult Housing	545 DU	109	142	2,022
		Subtotal	**183**	**241**	**2,960**
Village D	Single-Family Detached	72 DU	54	73	689
	Senior Adult Housing	697 DU	139	181	2,586
		Subtotal	**193**	**254**	**3,275**
Subtotal (Phase 2)			376	495	6,235
Total (Phases 1 and 2)			1,024	2,023	23,961
Internal Trips (Residential)[1]			0	-105	-1,066
Internal Trips (Commercial)[1]			0	-105	-1,066
Net External Trips (Commercial)			236	883	9,590
"Pass-By" Trips (25% - Commercial Only)[2]			-59	-221	-2,398
Total Reduction (Phases 1 and 2)			-59	-431	-4,530
Total External Trips (Phases 1 and 2)			**965**	**1,592**	**19,432**

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, 2008.
DU = Dwelling Units; TSF = Thousand Square Feet
[1] Internal Capture is the reduction of the compatibility of land uses (proposed residential and commercial) within the project site. Examples of internal capture are vehicular trips from the residential areas to the commercial. The internal capture rates are based upon data collected by the Institute of Transportation Engineers (ITE) and included in the Trip Generation Handbook, Chapter 7, Multi-Use Development.
[2] "Pass-By" reduction rates have been used to account for traffic that will access the site as an intermediate stop on the way to a primary destination.

Trip Distribution and Assignment

The project trip distribution and assignment process represent the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. The project trip distribution assumptions were reviewed by County Staff. To better address the project trip distribution on the roadway network, the project site was divided into Traffic Analysis Zones (TAZs), which are boundaries superimposed on the project site.

Interim Year 2020 Project Trip Distribution

The Interim Year 2020 Project Trip Distribution is primarily based on existing travel patterns and the existing roadway system. These patterns are affected by near-term development patterns in the vicinity of the project site. It is anticipated that project traffic will utilize Cahuilla Road, currently a dirt road, west of Joshua Road under Near Term conditions. According to County staff, the project would be conditioned to improve the unpaved portion of Cahuilla Road west of Joshua Road to provide a two-lane paved roadway suitable for use by project traffic. The San Bernardino Associated Governments (SANBAG) maintained transportation model has been used to evaluate the distribution and likely travel routes of the project traffic for both the residential and commercial land uses proposed on the project site. Refer to Exhibit 3.12-3, *Interim Year (2020) Project Trip Distribution*, below for the percentage of trips to and from the project.

2030 Project (Commercial and Residential) Trip Distribution

The 2030 long-range project trip distribution and assignment process represents the orientation of traffic to and from the project site in the Horizon Year. SANBAG maintained transportation model and 2030 horizon year model were used to evaluate the distribution and likely travel routes of the project traffic for both the residential and commercial land uses proposed on the project site. Unlike the Interim Year 2020 distribution, the 2030 distribution assumes the construction of the High Desert Corridor, which would traverse in a general northwest to southeast alignment in the vicinity of the site. The regional model includes arterial roadway segments that are dirt roads under existing conditions. Refer to Exhibit 3.12-4, *2030 Project (Commercial) Trip Distribution* and Exhibit 3.12-5, *2030 Project (Residential) Trip Distribution*, below for the percentage of trips to and from the project.

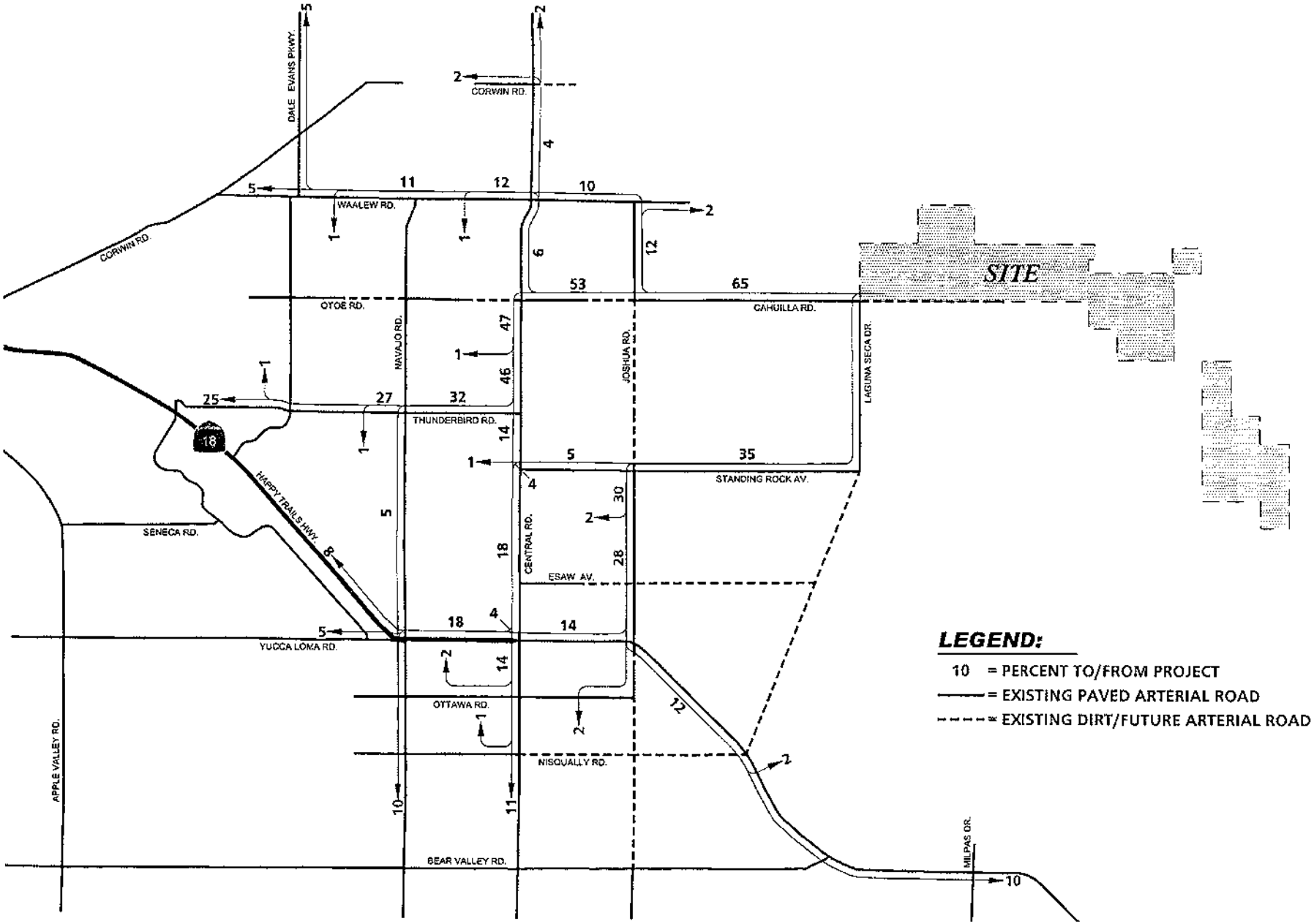
Project Intersection Configurations

The following summarizes the required intersection configurations for both Interim Year and Buildout conditions:

- Driveway "A" at Cahuilla Road (EW) –

- Install a traffic signal
- Southbound-
  - Construct 1st shared left/right-turn lane
- Eastbound-
  - Construct 1st left-turn lane
  - Construct 1st and 2nd through lanes
- Westbound-
  - Construct 1st shared through/right-turn lane
  - Construct 1st through lane

- Driveway "B" at Cahuilla Road (EW)-
  - Install a stop sign on Driveway "B" approach
  - Southbound-
    - Construct 1st shared left/right-turn lane
  - Eastbound-
    - Construct 1st left-turn lane
    - Construct 1st through lane
  - Westbound-
    - Construct 1st shared through/right-turn lane
- Driveway "C" at Cahuilla Road (EW)-
  - Install a stop sign on Driveway "C" approach
  - Southbound-
    - Construct 1st left/right-turn lane



NOT TO SCALE

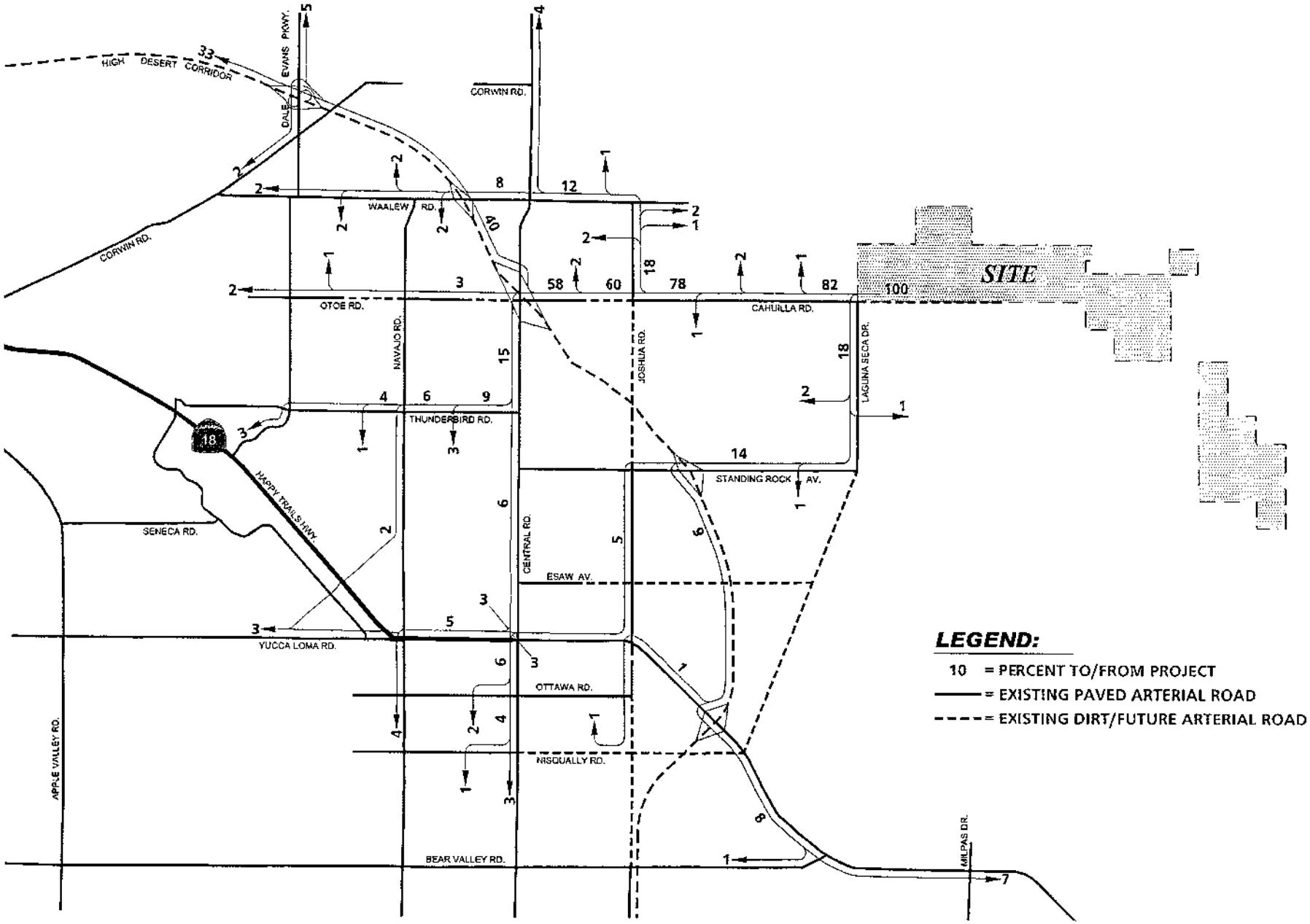
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

INTERIM YEAR (2020) PROJECT TRIP DISTRIBUTION

Exhibit 3.12-3

This page was intentionally left blank



NOT TO SCALE

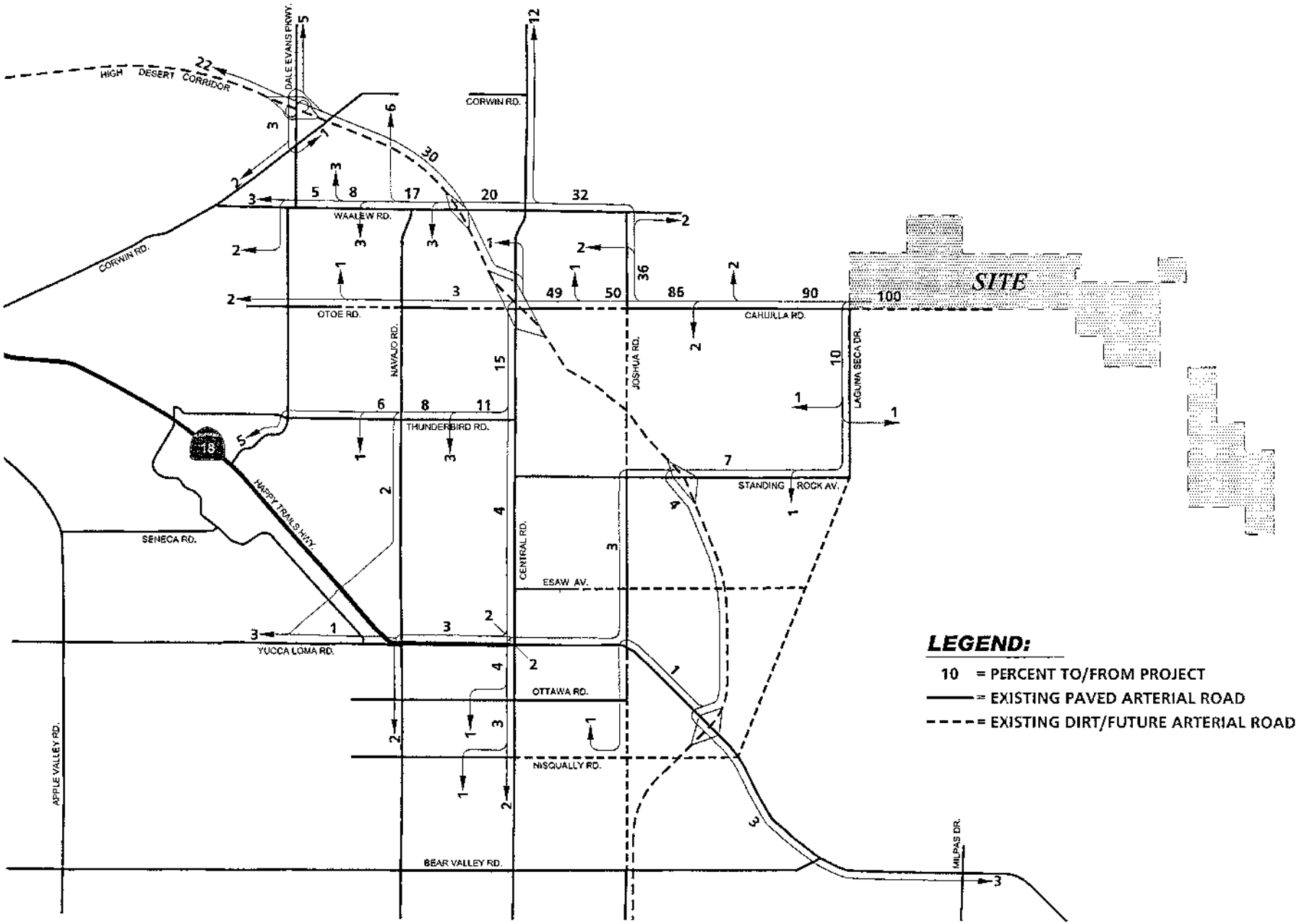
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

2030 PROJECT (COMMERCIAL) TRIP DISTRIBUTION

Exhibit 3.12-4

This page was intentionally left blank



NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

2030 PROJECT (RESIDENTAL) TRIP DISTRIBUTION

Exhibit 3.12-5

- Eastbound-
  - Construct 1st left-turn lane
  - Construct 1st through lane
- Westbound-
  - Construct 1st shared through/right-turn lane

Emergency Access Alternatives

For emergency situations where entry to the project site via the intersection of Laguna Seca Drive at Cahuilla Road is prohibited, adequate emergency vehicle access shall be provided pursuant to County requirements through adjacent and parallel roads (such as Sloan Road and Keator Road).

Project Only Traffic Conditions

The project-only traffic forecasts have been generated by applying the trip generation, distribution, and traffic assignment calculations. Exhibit 3.12-6, *Interim Year (2020) Project Only Average Daily Traffic (ADT)* and Exhibit 3.12-7, *2030 Project Only Average Daily Traffic (ADT)* depict average daily traffic and peak hour intersection volumes for the project only for interim year 2020 and horizon year 2030.

Future Traffic Conditions

The 2020 without-project traffic volumes are estimated based on the 2007 existing traffic volumes plus the 2007 to 2020 area-wide background growth volumes plus the known cumulative development volumes. Background growth includes a 3% annual growth rate from 2007 to 2020 in addition to the growth attributable to known development projects. Horizon Year 2030 volume forecasts without the project used a growth increment process based on volumes predicted by the CTP traffic model 2000 and 2030 scenarios.

Other Development Trip Generation

The Town of Apple Valley currently has many proposed developments within the project area. Refer to Exhibit 3.12-8, *Other Development Location Map* and Table 3.12-5, *Other Development Trip Generation Summary*, below for the total cumulative project volumes and locations. As indicated in Table 3.12-5, other developments in the project area are projected to generate 140,698 trip-ends per day with 8,714 vehicles per hour during the AM peak hour and 14,637 vehicles per hour during the PM peak hour.

Table 3.12-5:
Other Development Trip Generation Summary

	Peak Hours						Daily
	AM			PM			
	IN	OUT	TOTAL	IN	OUT	TOTAL	
Grand Total	**4,275**	**4,440**	**8,714**	**7,168**	**7,469**	**14,637**	**140,698**

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, 2008.

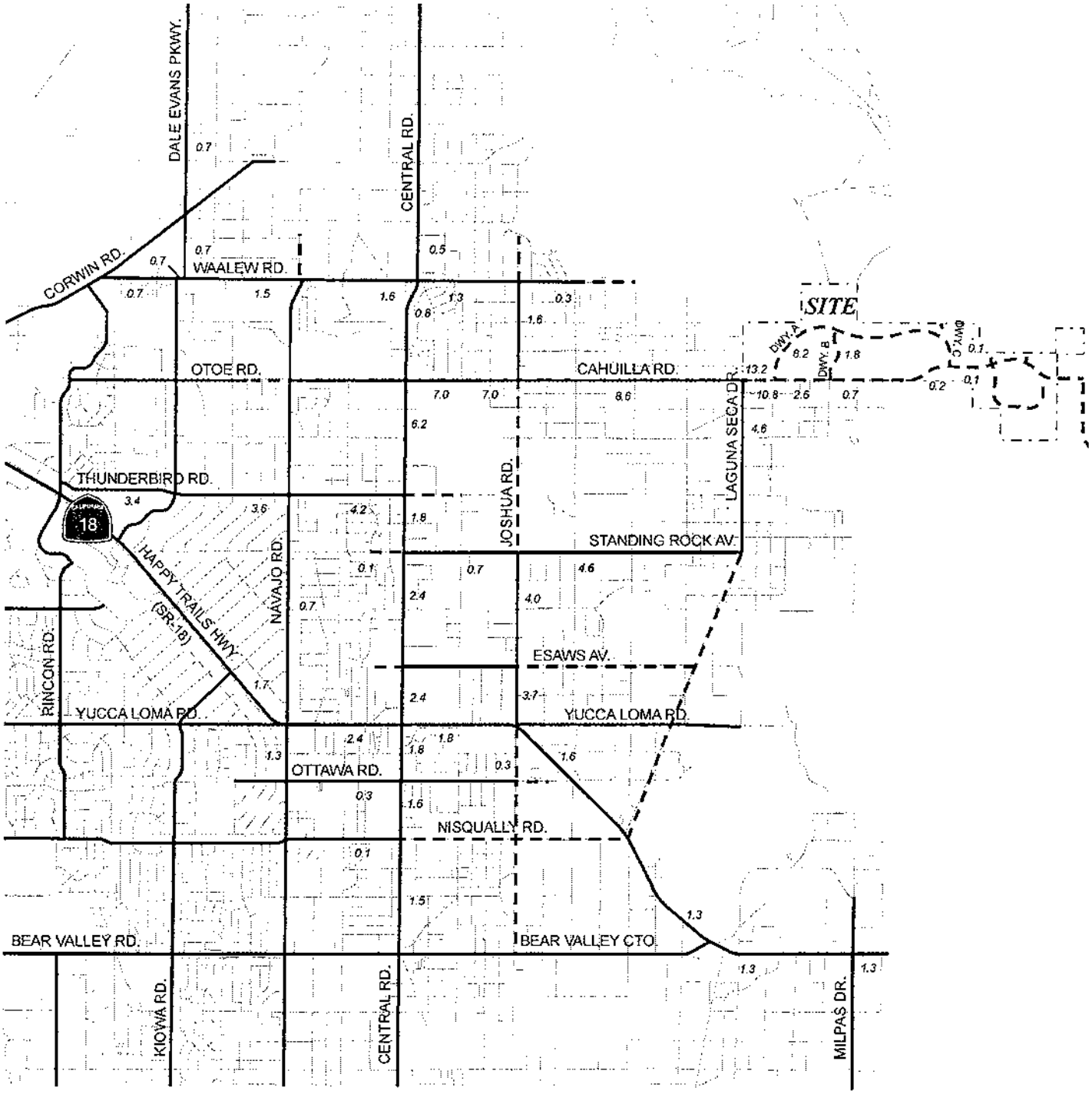
Other Development Trip Distribution and Assignment

The cumulative development projects have been aggregated into Traffic Analysis Zones (TAZs) in order to efficiently represent the cumulative development projects trip distribution and assignment to the roadway network.

Based on the identified trip distribution patterns for the other developments on arterial highways throughout the project area, other future development daily traffic volumes are shown in Exhibit 3.12-9, *Other Development Only Average Daily Traffic (ADT).* The largest daily traffic volumes attributable to other development for Interim Year conditions occur on Happy Trails Highway (SR-18) west of Navajo Road (13,900 VPD).

Interim Year (2020) Without Project Average Daily Traffic Volumes

Average Daily Traffic (ADT) volumes for the Interim Year (2020) Without Project were determined from deriving the sum of 2007 existing traffic volumes plus the 2007 to 2020 area-wide background growth (3%) volumes plus the known cumulative development volumes. As shown in Exhibit 3.12-10, *Interim Year (2020) Without Project Average Daily Traffic (ADT).* The highest ADT volumes in the project area occur on Happy Trails Highway (SR-18) west of Navajo Road, anticipated to carry approximately 36,100 vehicles daily.



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

NOT TO SCALE

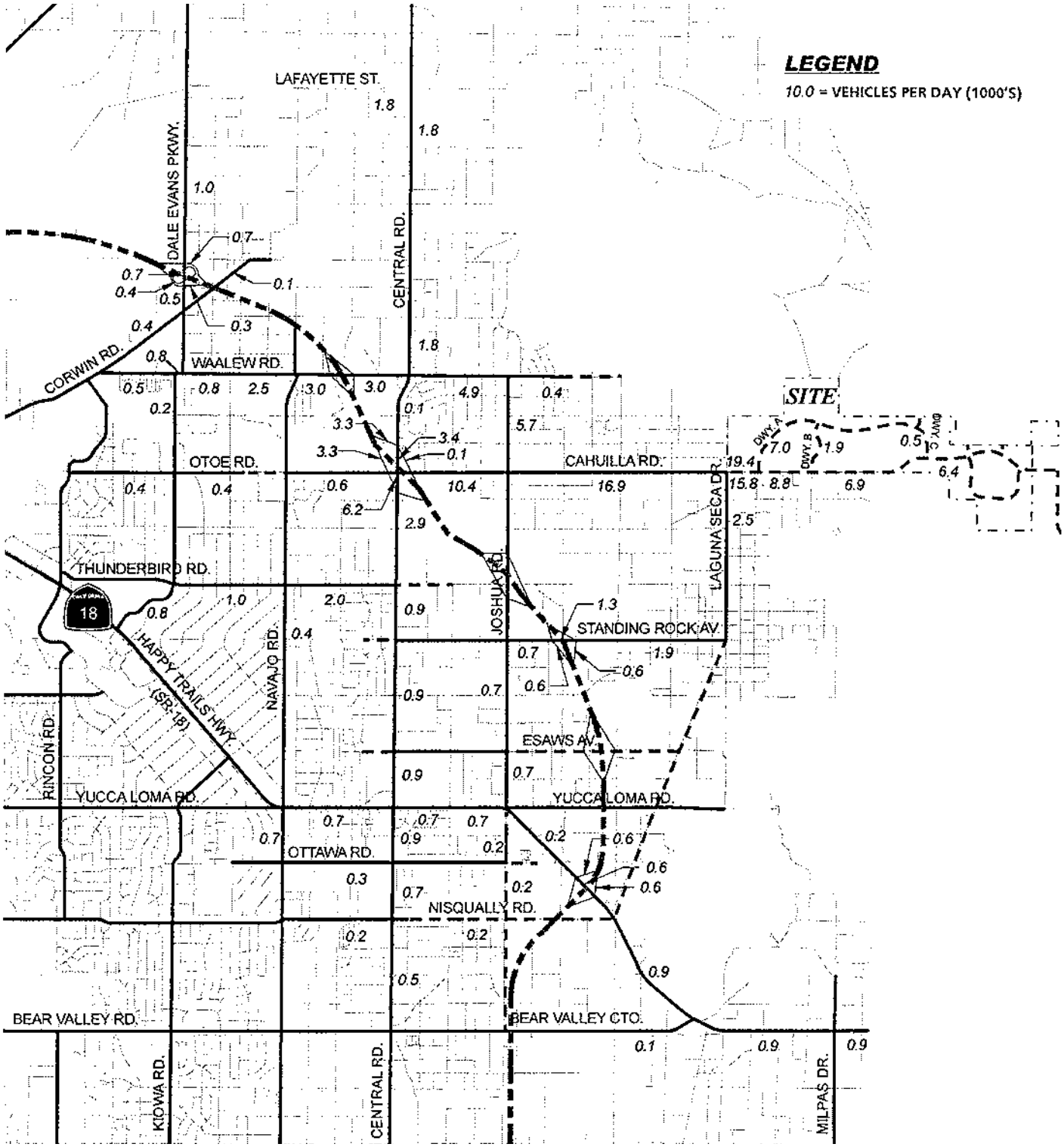
INTERIM YEAR (2020) PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT)

RBF CONSULTING

2009 JN 65-100492

Exhibit 3.12-6

This page was intentionally left blank



Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

RBF CONSULTING

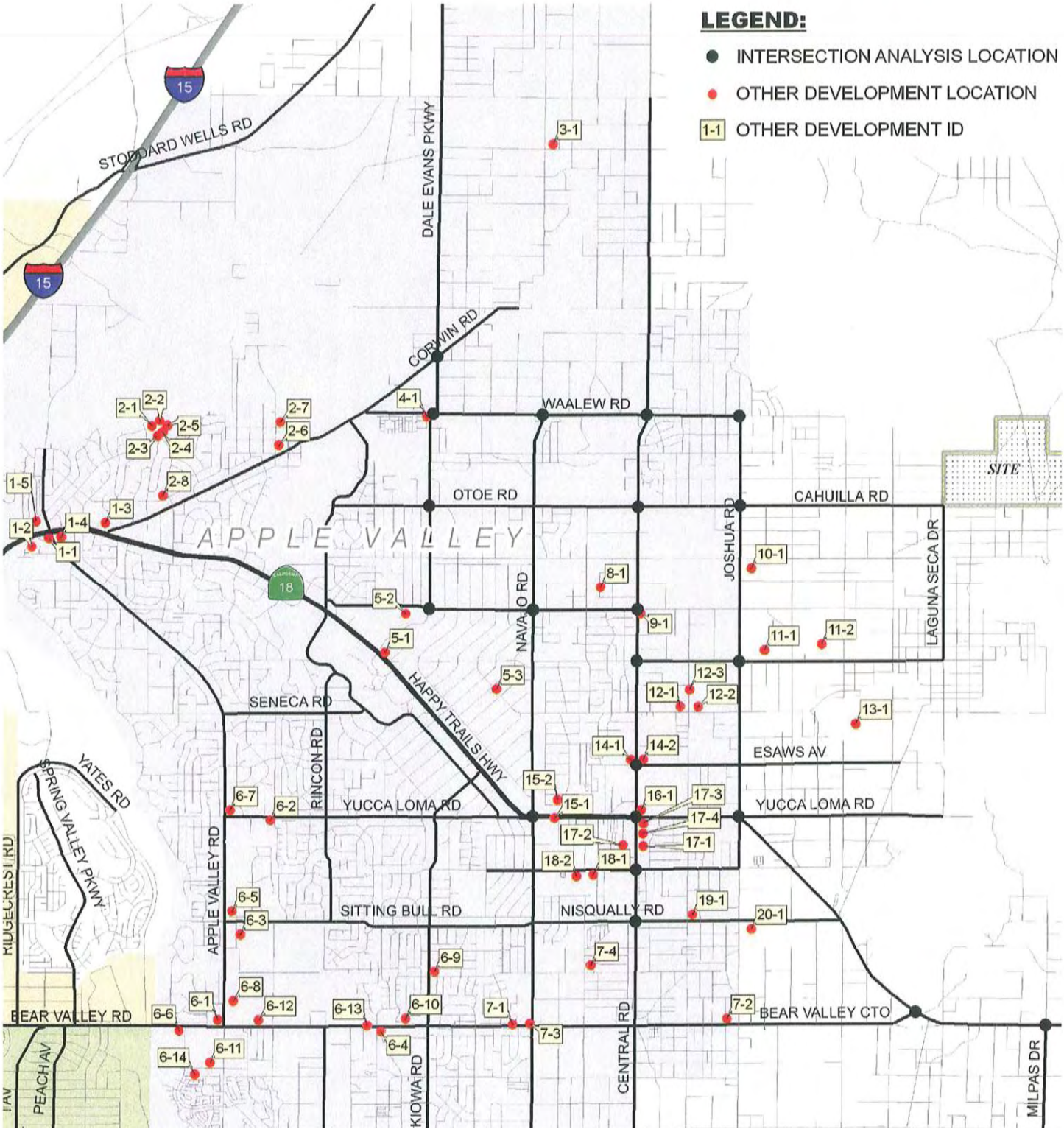
NOT TO SCALE

2009 JN 65-100492

2030 PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT)

Exhibit 3.12-7

This page was intentionally left blank



Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

NOT TO SCALE

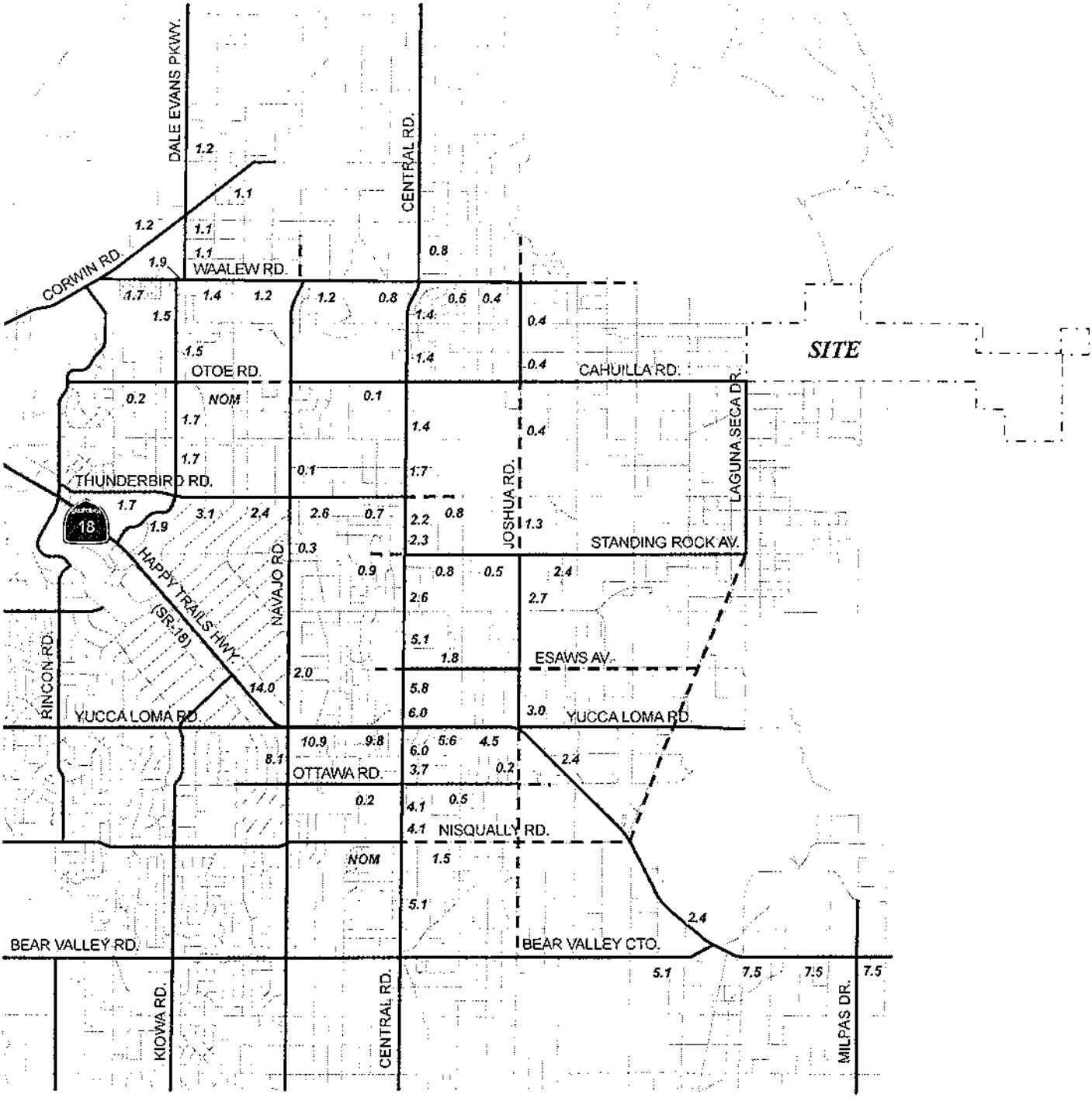
RBF CONSULTING

2009 JN 65-100492

OTHER DEVELOPMENT LOCATION MAP

Exhibit 3.12-8

This page was intentionally left blank



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

NOT TO SCALE

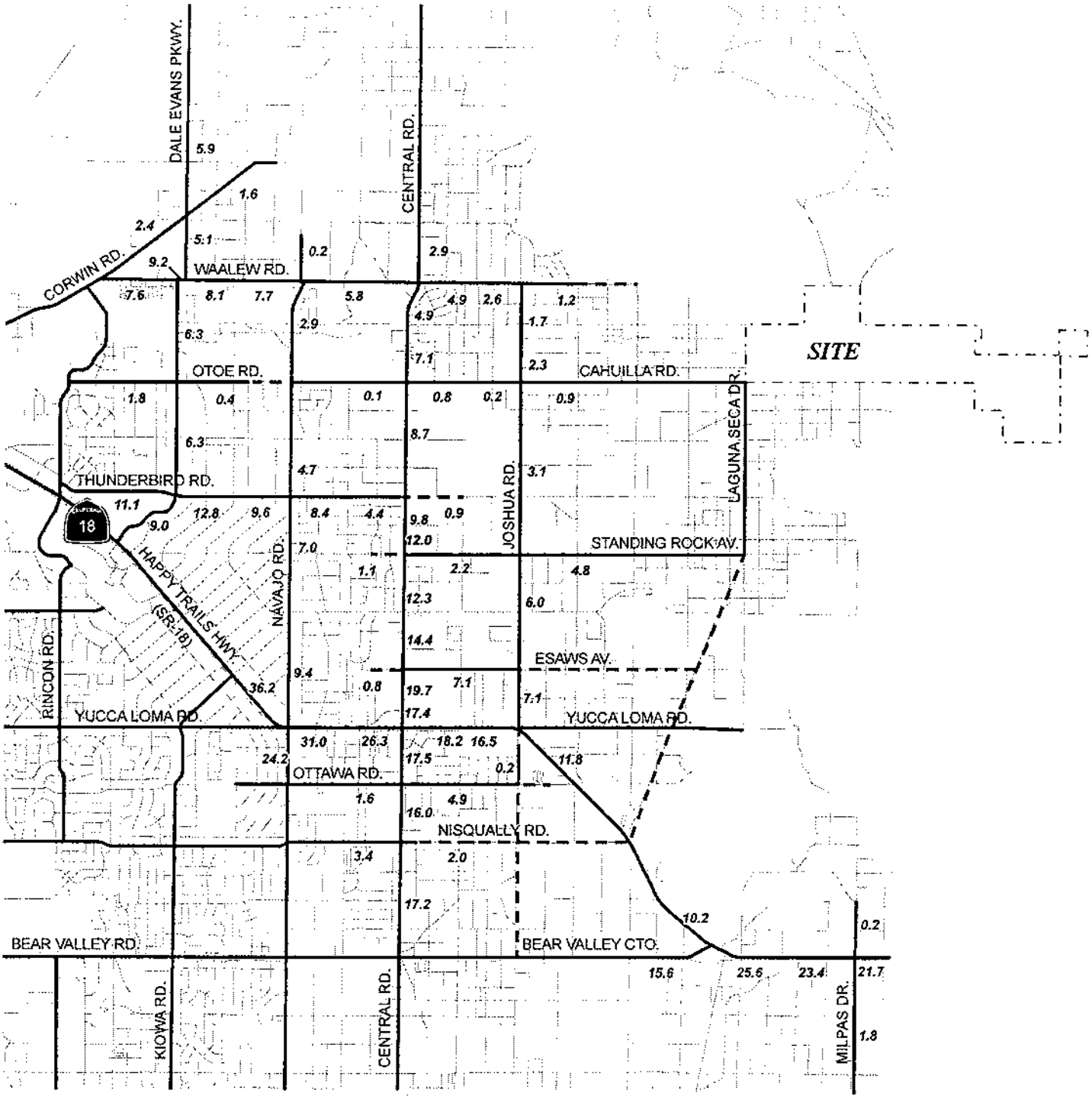
2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

OTHER DEVELOPMENT ONLY AVERAGE DAILY TRAFFIC (ADT)

Exhibit 3.12-9

This page was intentionally left blank



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

INTERIM YEAR (2020) WITHOUT PROJECT
AVERAGE DAILY TRAFFIC (ADT)

RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Exhibit 3.12-10

This page was intentionally left blank

The following intersections are projected to warrant traffic signals under the Interim Year (2020) Without Project traffic conditions:

North Dale Evans Parkway (NS) at:

- Waalew Road (EW)

South Dale Evans Parkway (NS) at:

- Waalew Road (EW)

Navajo Road (NS) at:

- Waalew Road (NS)
- Thunderbird Road (EW)

Central Road (NS) at:

- Thunderbird Road (EW)
- Standing Rock Avenue (EW)
- Nisqually Road (EW)

Joshua Road (NS) at:

- Highway 18 (WE)

Milpas Drive (NS) at:

- Highway 18 (EW)

Interim Year (2020) With Project Average Daily Traffic Volumes

The ADT volumes for the Interim Year (2020) With Project are the sum of project only traffic volumes plus Interim Year (2020) Without Project traffic volumes. Exhibit 3.12-11, *Interim Year (2020) With Project Average Daily Traffic (ADT),* below shows the highest ADT volumes in the project area occurring on Happy Trails Highway (SR-18) west of Navajo Road, anticipated to carry approximately 37,800 daily vehicles.

The following intersections are projected to warrant traffic signals under the Interim Year (2020) With Project traffic conditions:

Central Road (NS) at:

- Waalew Road (EW)
- Cahuilla Road (EW)

Joshua Road (NS) at:

- Cahuilla Road (EW)
- Standing Rock Road (EW)

Laguna Seca Drive (NS) at:

- Cahuilla Road (EW)

Driveway A (NS) at:

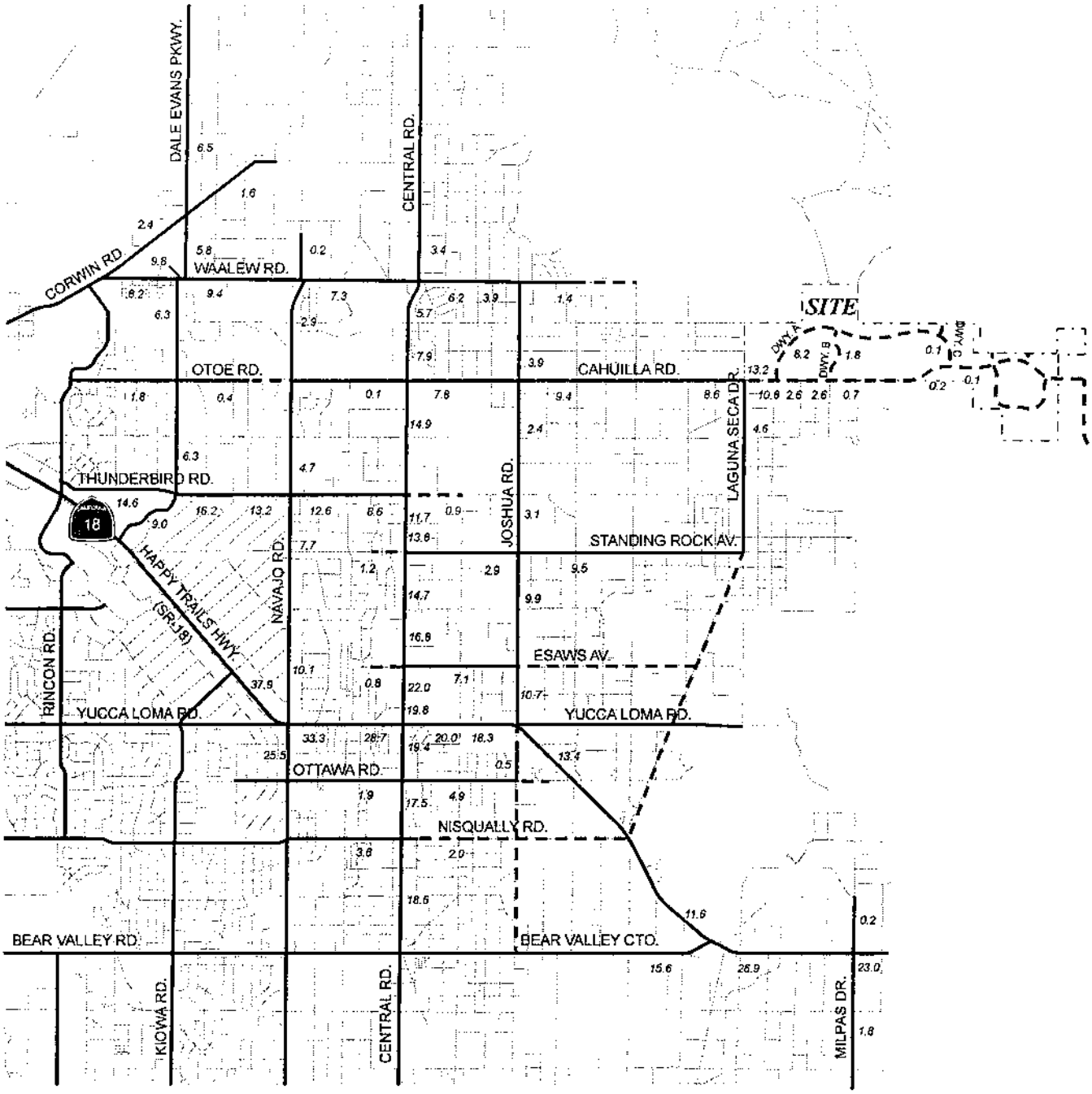
- Cahuilla Road (EW)

2030 Without Project Average Daily Traffic Volumes

Horizon Year 2030 Without Project ADT volume forecast has been developed using a growth increment process based on volumes predicted by the CTP traffic model 2000 and 2030 scenarios. Exhibit 3.12-12, *2030 Without Project Average Daily Traffic (ADT)* below shows the highest ADT volumes in the project area occurring on Happy Trails Highway (SR-18) west of Navajo Road, which is projected to carry approximately 39,700 vehicles per day. In the vicinity of the project site, Cahuilla Road (east of Laguna Seca Road) is projected to carry approximately 4,000 vehicles per day (VPD). The daily traffic volumes on Laguna Seca Road south of Cahuilla Road are projected to be nominal (less than 500 VPD). The daily traffic volumes on the High Desert Corridor (HDC) are projected to reach a maximum of approximately 28,000 VPD west of Dale Evans Parkway. The projected volumes reflect horizon year (2030) conditions, rather than project area buildout. For 2030 Without Project traffic conditions, the following intersections are projected to warrant a traffic signal:

Dale Evans Parkway (NS) at:

- High Desert Corridor NB Ramps (EW)
- High Desert Corridor SB Ramps (EW)
- Corwin Road (EW)



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

INTERIM YEAR (2020) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)

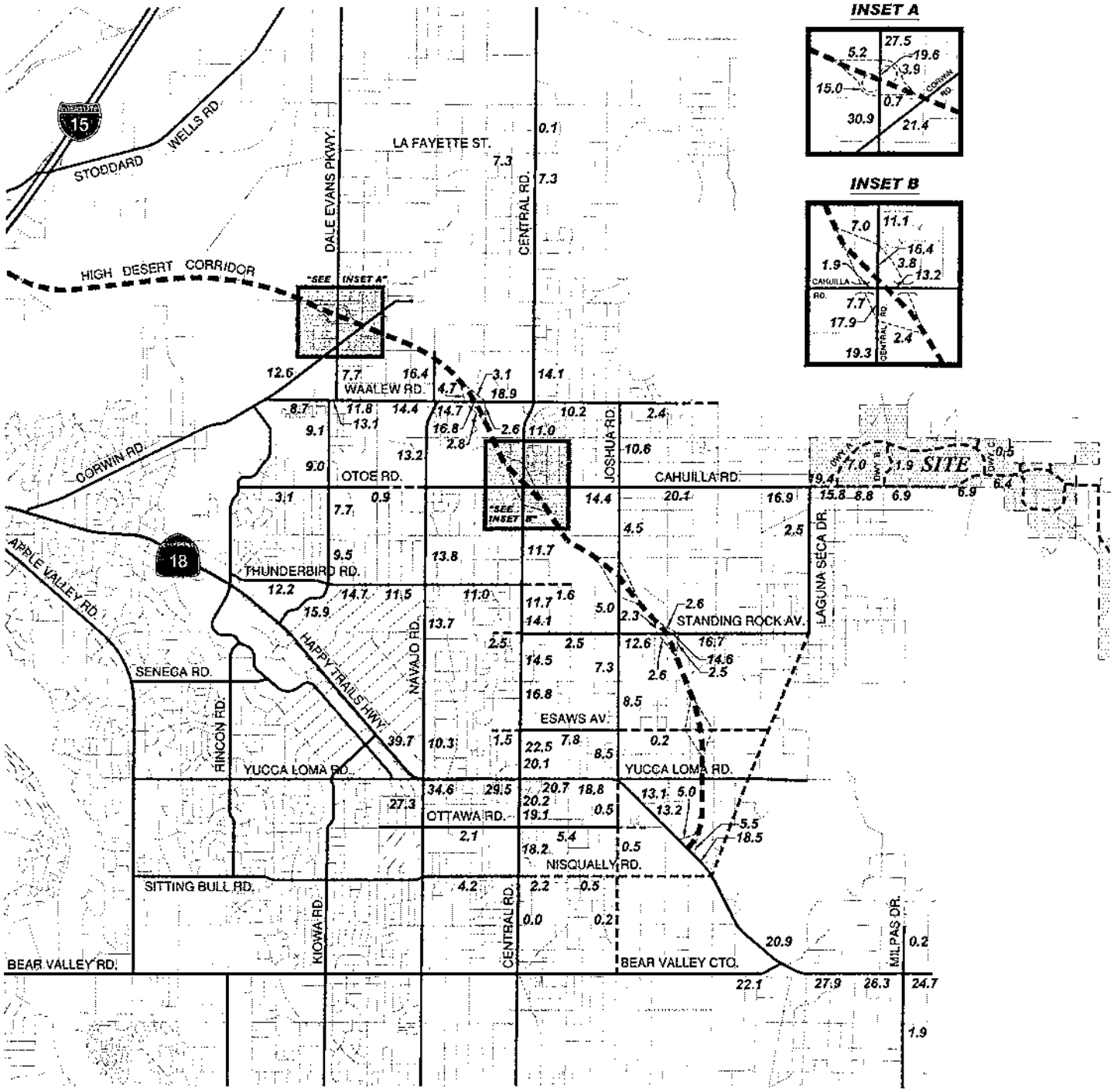
RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Exhibit 3.12-11

This page was intentionally left blank



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

2030 WITH PROJECT AVERAGE DAILY TRAFFIC (ADT)

Exhibit 3.12-12

This page was intentionally left blank

High Desert Corridor SB Ramps (NS) at:

- Waalew Road (EW)
- Standing Rock Avenue (EW)
- Highway 18 (EW)

High Desert Corridor NB Ramps (NS) at:

- Waalew Road (EW)
- Standing Rock Avenue (EW)
- Highway 18 (EW)

Central Road (NS) at:

- High Desert Corridor NB Ramps (EW)
- High Desert Corridor SB Ramps (EW)

2030 With Project Average Daily Traffic Volumes

Horizon Year 2030 With Project ADT volume forecast has been developed by adding the project only traffic volumes to the 2030 Without Project traffic volumes. Exhibit 3.12-12, *2030 With Project Average Daily Traffic (ADT),* below shows that the highest ADT volumes in the project area occur on Happy Trails Highway (SR-18) west of Navajo Road, anticipated to carry approximately 39,700 VPD. The project traffic contribution will increase the projected daily traffic volume on Cahuilla Road west of Laguna Seca Road to approximately 16,900 VPD, while the 2030 daily traffic volume on Laguna Seca Road south of Cahuilla Road will be approximately 2,500 VPD.

Within the project site, the daily traffic volume on Cahuilla Road is 15,800 VPD west of Driveway "A". East of Driveway "A", the daily traffic volume decreases to 8,800 VPD. The daily traffic volume east of Driveway "A" suggests that constructing Cahuilla Road as a limited access Collector Street will provide adequate capacity for projected long range conditions.

For 2030 With Project traffic conditions, the following additional intersections are projected to warrant a traffic signal:

Dale Evans Parkway (NS) at:

- Otoe Road (EW)

Joshua Road (NS) at:

- Waalew Road (EW)

Interim Year (2020) Without Project Conditions

Under Interim Year (2020) Without Project Conditions, several intersections within the project area are projected to experience unacceptable levels of service during the peak hours and are deficient per Town of Apple Valley or County criteria including:

Dale Evans Parkway (NS) at:

- Corwin Road (EW)

South Dale Evans Parkway (NS) at:

- Waalew Road (EW)

North Dale Evans Parkway (NS) at:

- Waalew Road (EW)

Dale Evans Parkway (NS) at:

- Thunderbird Road (EW)

Navajo Road (NS) at:

- Waalew Road (EW)
- Thunderbird Road (EW)
- Highway 18 (EW)

Central Road (NS) at:

- Thunderbird Road (EW)
- Standing Rock Avenue (EW)
- Esaws Avenue (EW)

- Ottawa Road (EW)
- Nisqually Road (EW)

Joshua Road (NS) at:

- Highway 18 (EW)

Highway 18 (NS) at:

- Bear Valley Road (EW)

Milpas Drive (NS) at:

- Highway 18 (EW)

Interim Year (2020) With Project Conditions

Compared to 2020 Without Project Conditions, the following additional intersections are projected to experience unacceptable levels of service during the peak hours under Interim Year (2020) With Project Conditions, and are, therefore, deficient per Town of Apple Valley or County criteria:

Central Road (NS) at:

- Waalew Road (EW)
- Cahuilla Road (EW)

Joshua Road (NS) at:

- Cahuilla Road (EW)
- Standing Rock Avenue (EW)

2030 Without Project Conditions

Under 2030 Without Project Conditions, all improvements can be accommodated within the planned ultimate (future) roadway cross-sections. The following project area intersections are projected to experience unacceptable traffic operations during the peak hours, and are, therefore, deficient per Town of Apple Valley or County criteria:

Dale Evans Parkway (NS) at:

- Corwin Road (EW)
- Otoe Road (EW)
- Thunderbird Road (EW)

South Dale Evans Parkway (NS) at:

- Waalew Road (EW)

North Dale Evans Parkway (NS) at:

- Waalew Road (EW)

Navajo Road (NS) at:

- Waalew Road (EW)
- Thunderbird Road (EW)
- Highway 18 (EW)

Central Road (NS) at:

- Waalew Road (EW)
- Cahuilla Road / Otoe Road (EW)
- Thunderbird Road (EW)
- Standing Rock Avenue (EW)
- Esaws Avenue (EW)
- Ottawa Road (EW)
- Nisqually Road (EW)

Joshua Road (NS) at:

- Cahuilla Road / Otoe Road (EW)
- Standing Rock Avenue (EW)

- Highway 18 (EW)

Highway 18 (NS) at:

- Bear Valley Road (EW)

Milpas Drive (NS) at:

- Highway 18 (EW)

2030 With Project Conditions

Compared to 2030 Without Project Conditions, the following additional intersection is projected to experience unacceptable levels of service during the peak hours under 2030 With Project Conditions, and is, therefore, deficient per Town of Apple Valley or County criteria:

Joshua Road (NS) at:

- Waalew Road (EW)

Thresholds of Significance

To determine whether the addition of project-generated trips results in a significant impact, and thus requires mitigation, the Town of Apple Valley and the County have established the following thresholds of significance:

Town of Apple Valley and County of San Bernardino

A significant project-related impact would occur if the addition of project-generated trips causes an intersection operating at LOS C or better to operate at a deficient LOS (LOS D, E, or F); or if a project adds significant traffic (where significant is defined by the 50 project peak hour trip threshold contained in the *San Bernardino Congestion Management Program Traffic Study Guidelines*) to any intersection operating at a deficient LOS (LOS D, E, or F).

Significant impacts at project intersections must be mitigated to an acceptable LOS (LOS D or better in the City of Hesperia or LOS C or better in the Town of Apple Valley and the County) with the project. The City of Hesperia target for peak hour intersection operation is LOS D or better and the Town of Apple Valley and County target for peak hour intersection operation is LOS C or better.

Significance Criteria

Appendix G, Initial Study Checklist, of the *CEQA Guidelines* was used to develop significance thresholds in this analysis. As such, the project would create a significant impact if it would:

1) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to capacity ratio on roads, or congestion at intersections);

2) Exceed, either individually or cumulatively, an LOS standard established by the city, county or State agency for designated roads or highways;

3) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

4) Result in inadequate emergency access;

5) Result in inadequate parking capacity; and/or,

6) Conflict with adopted policies, plans, or programs supporting alternative transportation.

3.12.2 Environmental Impacts and Mitigation Measures

Local Intersections

3.12-1 *Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).* **Level of Significance: Significant and Unavoidable Impact.**

The proposed project would increase traffic and decrease the existing level of service of sixteen local intersections on and offsite.

Onsite Improvements

The proposed project would include the development of 3,114 residential units and 15 acres of neighborhood commercial development on approximately 1,557 acres in Fairview Valley in the unincorporated area of the County within the Sphere of Influence of the Town of Apple Valley. The project proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. As previously discussed, it is anticipated that Phase 1 (2020) of the proposed project would generate 13,197 trip-ends per day with 589 vehicles per hour during the AM peak hours and 1,097 vehicles per hour in the PM

peak hours. These proposed onsite improvements would cause sixteen local intersections throughout the Town of Apple Valley and the unincorporated area of the County to be negatively impacted by project traffic. As identified below, many of these improvements have been previously identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Therefore, payment of fair share fees associated with improvements identified in the plan are considered adequate mitigation and therefore, impacts to intersections identified in the plan would be considered less than significant with mitigation. However, many intersections identified below for payment of fair share fees are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, impacts to intersections not identified within any plan are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

Offsite Improvements

Implementation of the proposed offsite improvements would not cause an increase in traffic. Offsite improvements would include the development of infrastructure to accommodate the uses proposed as part of the project, and would not create an increase in traffic. As a result, development of the proposed offsite improvements would result in less than significant impacts.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the amount of residential units proposed as part of the project, thus decreasing the amount of daily trips. Should the Golf Course be implemented, an increase in traffic would occur when compared to existing conditions. However, traffic associated with the Golf Course Overlay is not anticipated to be greater than traffic generated by the proposed project. Although population and daily trips would be reduced, impacts would remain significant and unavoidable with the implementation of Mitigation Measure TRA-1.

Equestrian Overlay

Impacts associated with the Equestrian Overlay would be similar to those identified for onsite improvements. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the

implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

TRA-1: **Applicants of development within the project area shall be subject to their proportionate fair share of roadway improvements to Dale Evans Parkway/Corwin Road intersection, South Dale Evans Parkway/Waalew Road intersection, North Dale Evans Parkway/Waalew Road intersection, Dale Evans Parkway/Thunderbird Road intersection, Navajo Road/Waalew Road intersection, Navajo Road/Thunderbird Road intersection, Central Road/Waalew Road intersection, Central Road/Otoe Road – Cahuilla Road intersection, Central Road/Thunderbird Road intersection, Central Road/Standing Rock Road intersection, Central Road/Esaws Avenue intersection, Central Road/Ottowa Road intersection, Central Road/Nisqually Road intersection, Joshua Road/Cahuilla Road intersection, Joshua Road/Standing Rock Road intersection, Laguna Seca Drive/Cahuilla Road intersection as identified in Table 3.12-6: Local Intersection Mitigation Summary for Interim Year (2020) With Project Scenarios. The finance plan shall be approved by City Council prior to issuance of any building permit for the Hacienda at Fairview Valley development. The Town of Apple Valley shall be responsible for the construction of these intersection and roadway improvements.**

Table 3.12-6:
Local Intersection Mitigation Summary for Interim Year (2020) With Project Scenarios

Local Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
Dale Evans Parkway (NS) at:	
Corwin Road (EW)	Relocate STOP sign from Dale Evans to Corwin
	Reconstruct NB right-turn lane as shared through / right-turn lane
	Construct 1st EB exclusive left-turn lane
	Reconstruct WB shared left through lane as 1st exclusive left
	Reconstruct WB right-turn lane as shared through / right-turn lane

Local Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
South Dale Evans Parkway (NS) at:	
Waalew Road (EW)	Install a traffic signal
	Reconstruct NB shared left/right-turn lane as 1st exclusive left-turn lane
	Construct 1st NB exclusive right-turn lane
	Reconstruct WB shared left through lane as 1st exclusive left-turn lane
	Construct WB through lane
North Dale Evans Parkway (NS) at:	
Waalew Road (EW)	Install a traffic signal
	Reconstruct SB shared left / right-turn lane as 1st exclusive left-turn lane
	Construct 1st exclusive SB right-turn lane
	Reconstruct EB shared left through lane as 1st exclusive left-turn lane
	Construct EB through lane
Dale Evans Parkway (NS) at:	
Thunderbird Road (EW)	Install a traffic signal
Navajo Road (NS) at:	
Waalew Road (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Navajo Road (NS) at:	
Thunderbird Road (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	
Waalew Road (EW)	**Install a traffic signal**
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	

Local Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
Otoe Road / Cahuilla Road (EW)	**Install a traffic signal**
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB through lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	
Thunderbird Road (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Reconstruct EB shared left through lane as 1st exclusive left-turn lane
	Reconstruct EB exclusive right-turn lane as 1st through lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	
Standing Rock Avenue (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	
Esaws Avenue (EW)	**Reconstruct NB right-turn lane as 2nd through lane**
	Construct exclusive WB left-turn lane (in addition to existing shared left-through lane)
Central Road (NS) at:	
Ottawa Road (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st NB exclusive right-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Central Road (NS) at:	
Nisqually Road (EW)	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Reconstruct WB shared left through lane as 1st exclusive left-turn lane
	Reconstruct WB right-turn lane as through lane
Joshua Road (NS) at:	
Cahuilla Road – Otoe Road (EW)[1]	**Install a traffic signal**

Local Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 1st WB exclusive left-turn lane
Joshua Road (NS) at:	
Standing Rock Avenue (EW)[1]	**Install a traffic signal**
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Reconstruct EB shared left through lane as 1st exclusive left-turn lane
	Reconstruct EB right-turn lane as through lane
	Construct 1st WB exclusive left-turn lane
Laguna Seca Drive (NS) at:	
Cahuilla Road (EW)	**Install a traffic signal**
	Construct 1st SB shared left through right-turn lane
	Construct 1st EB left-turn lane
	Construct 1st EB through lane
	Construct 1st WB through lane

**Improvements in Bold required either Interim or Long Range with the proposed project, not under cumulative Interim or Long Range without the proposed project.*
Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, 2008.
[1]Intersection improvements identified in the South/East Apple Valley Local Area Transportation Facilities Plan

3.12-1a: Dale Evans Parkway/Corwin Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Dale Evans Parkway/Corwin Road intersection operates at LOS B with an average delay of 12 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the PM peak hour traffic delay to over 50 seconds, shifting the level of service from B to F. This is considered a significant impact. Relocating the stop sign from Dale Evans Parkway to Corwin Road, reconstructing the northbound right-turn lane as a shared through/right-turn lane, constructing a first eastbound exclusive left-turn lane, reconstructing the westbound shared left through lane as first exclusive left-turn lane, and reconstructing the westbound right-turn lane as a shared through/right-turn lane would raise the level of service to C. Improvements

associated with the intersection of Dale Evans Parkway/Corwin Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1b: South Dale Evans Parkway/Waalew Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled South Dale Evans Parkway/Waalew Road intersection operates at LOS B with an average delay of 13.1 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the PM peak hour traffic delay to over 50 seconds, shifting the level of service from B to F. This is considered a significant impact. Installing a traffic signal, reconstructing the northbound shared left/right-turn lane as first exclusive left-turn lane, constructing a first northbound exclusive right-turn lane, reconstructing the westbound shared left through lane as a first exclusive left-turn lane, and constructing a westbound through lane would raise the level of service to B. Improvements associated with the intersection of South Dale Evans Parkway/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1c: North Dale Evans Parkway/Waalew Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled North Dale Evans Parkway/Waalew Road intersection operates at LOS B with an average delay of 12.4 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the PM peak hour traffic delay to over 50 seconds, shifting the level of service from B to F. This is

considered a significant impact. Installing a traffic signal, reconstructing the southbound shared left/right-turn lane as a first exclusive left-turn lane, constructing a first exclusive southbound right-turn lane, reconstructing the eastbound shared left though lane as first exclusive left-turn lane, and constructing an eastbound through lane would raise the level of service to B. Improvements associated with the intersection of North Dale Evans Parkway/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1d: Dale Evans Parkway/Thunderbird Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the all-way-stop-controlled Dale Evans Parkway/Thunderbird Road intersection operates at LOS C with an average delay of 20.1 seconds in the AM peak hour and operates at LOS B with an average delay of 11.4 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to over 50 seconds, shifting the level of service to F for both AM and PM peak hours. This is considered a significant impact. Installing a traffic signal would raise the level of service to C in both the AM and PM peak hours. Improvements associated with the intersection of Dale Evans Parkway/Thunderbird Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1e: Navajo Road/Waalew Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the all-way-stop-controlled Navajo Road/Waalew Road intersection operates at LOS A with an average delay of 8.3 seconds in the AM peak hour and 8.4 seconds in

the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM peak hour traffic delay to 12.8 seconds and 13.2 seconds in the PM peak hour, shifting the level of service from A to B. This intersection is projected to potentially warrant a traffic signal. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound exclusive left-turn lane would reduce impacts to less than significant levels. Improvements associated with the intersection of Navajo Road/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1f: Navajo Road/Thunderbird Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the all-way-stop-controlled Navajo Road/Thunderbird Road intersection operates at LOS B with an average delay of 10.8 seconds in the AM peak hour and operates at LOS B with an average delay of 10.1 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to over 50 seconds, shifting the level of service to F for both AM and PM peak hours. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C in both the AM and PM peak hours. Improvements associated with the intersection of Navajo Road/Thunderbird Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1g: Central Road/Waalew Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the all-way-stop-controlled Central Road/Waalew Road intersection operates at LOS A with an average delay of 8.3 seconds in the AM peak hour and 8.4 in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to exceed 50 seconds, lowering the level of service to F. This is considered a significant impact. With the proposed project and improvements, the average daily traffic delay will decrease to 29.1 seconds in the AM peak hour and 34.9 seconds in the PM peak hour, shifting the level of service from F to C. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound left-turn lane would decrease the level of service to C in the PM peak hour in comparison to the existing conditions. Improvements associated with the intersection of Central Road/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1h: Central Road/Otoe Road – Cahuilla Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Central Road/Otoe Road – Cahuilla Road intersection operates at LOS B with an average delay of 10.5 seconds in the AM peak hour and 11.3 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM peak hour traffic delay to 28.6 seconds and over 50 seconds in the PM peak hour, shifting the level of service from B to D in the AM peak hour and B to F in the PM peak hour. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound through lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to B. Improvements associated with the intersection of Central Road/Otoe Road-Cahuilla Road are not located in

any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1i: Central Road/Thunderbird Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Central Road/Thunderbird Road intersection operates at LOS B with an average delay of 13.5 seconds in the AM peak hour and 13.6 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to over 50 seconds, shifting the level of service from B to F in both the AM and PM peak hour. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, reconstructing the eastbound shared left through lane as first exclusive left-turn lane, reconstructing the eastbound exclusive right-turn lane as a first through lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C. Improvements associated with the intersection of Central Road/Thunderbird Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1j: Central Road/Standing Rock Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Central Road/Standing Rock Road intersection operates at LOS B with an average delay of 12.1 seconds in the AM peak hour and 12.8 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM peak hour traffic delay to 41.4 seconds and over 50

seconds in the PM peak hour, shifting the level of service from B to E and F, respectively, in the AM and PM peak hour. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C. Improvements associated with the intersection of Central Road/Standing Rock Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1k: Central Road/Esaws Avenue

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the traffic-signal-controlled Central Road/Esaws Avenue intersection operates at LOS C with an average delay of 33.7 seconds in the AM peak hour and 31.5 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM peak hour traffic delay to 36.5 seconds and over 52.9 seconds in the PM peak hour, shifting the level of service from C to D in the AM and PM peak hour. This is considered a significant impact. Reconstructing the northbound right-turn lane as the second through lane and constructing an exclusive westbound left-turn lane (in addition to existing shared left-through lane) would raise the level of service back to C. Improvements associated with the intersection of Central Road/Esaws Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1l: Central Road/Ottawa Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Central Road/Ottawa Road intersection operates at LOS F with an average delay over 50 seconds in the AM peak hour and operates at LOS C with an average delay of 15.9 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to over 50 seconds, shifting the level of service to F. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first northbound exclusive right-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C. Improvements associated with the intersection of Central Road/Ottawa Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1m: Central Road/Nisqually Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the cross-street-stop-controlled Central Road/Nisqually Road intersection operates at LOS D with an average delay of 34.9 seconds in the AM peak hour and operates at LOS C with an average delay of 17.1 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM and PM peak hour traffic delay to over 50 seconds, shifting the level of service to F. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and reconstructing a westbound shared left through lane as a first exclusive left-turn lane, and reconstructing the westbound right-turn lane as a through lane would raise the level of service to C. Improvements associated with the intersection of Central Road/Nisqually Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

3.12-1n: Joshua Road/Cahuilla Road – Otoe Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Less than Significant with Mitigation.**

Improvements to Joshua Road/Cahuilla Road are currently identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Under existing conditions, the cross-street-stop-controlled Joshua Road/Cahuilla Road – Otoe Road intersection operates at LOS A with an average delay of 9.5 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the PM peak hour traffic delay to 37.2 seconds, shifting the level of service to E. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C. Impacts would be reduced to less than significant levels by adding these improvements to the intersection through implementation of Mitigation Measure TRA-1.

3.12-1o: Joshua Road/Standing Rock Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Less than Significant with Mitigation.**

Improvements to Joshua Road/Standing Rock Road are currently identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Under existing conditions, the all-way-stop-controlled Joshua Road/Standing Rock Road operates at LOS A with an average delay of 7.8 seconds in the AM peak hour and 7.7 seconds in the PM peak hour. The addition of the proposed project and other cumulative project traffic would increase the AM peak hour traffic delay to 16.5 seconds, shifting the level of service to C, and 25.8 seconds in the PM peak hour, shifting the level of service to D. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, reconstructing the eastbound shared left through lane as first exclusive left-turn lane, reconstructing the eastbound right-turn lane as a through lane, and constructing a first westbound exclusive left-turn lane would raise the level of service to C. Impacts would be reduced to less than significant levels by adding these improvements to the intersection through implementation of Mitigation Measure TRA-1.

3.12-1p: Laguna Seca Drive/Cahuilla Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

The cross-street-stop-controlled Laguna Seca Drive/Cahuilla Road was not analyzed by the traffic study under existing conditions. The addition of the proposed project and other cumulative project traffic would result in the AM peak hour traffic delay of 9.7 seconds and 13.3 seconds in the PM peak hour. This would be the main intersection leading into the proposed project site. This is considered a significant impact. Installing a traffic signal, constructing a first southbound shared left through/right-turn lane, constructing a first eastbound left-turn lane, constructing a first eastbound through lane, and constructing a first westbound through lane would raise the level of service to B. Improvements associated with the intersection of Laguna Seca Drive/Cahuilla Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-1, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-1, impacts would remain significant and unavoidable.

Regional Intersections

3.12-2 *Implementation of the proposed project would exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.* **Level of Significance: Significant and Unavoidable Impact.**

Onsite Improvements

The proposed project would increase traffic and decrease the existing level of service of fourteen regional intersections offsite along Highway 18 and the proposed High Desert Corridor. The proposed project would include the development of 3,114 residential units and 15 acres of neighborhood commercial development on approximately 1,557 acres in Fairview Valley in the unincorporated area of the County within the Sphere of Influence of the Town of Apple Valley. The project proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. As previously discussed, it is anticipated that Phase 1 (2020) of the proposed project would generate 13,197 trip-ends per day with 589 vehicles per hour during the AM peak hours and 1,097 vehicles per hour in the PM peak hours. These proposed onsite improvements would cause fourteen regional intersections throughout the Town of Apple Valley and the unincorporated area of the County to be

negatively impacted by project traffic. As identified below, many of these improvements have been previously identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Therefore, payment of fair share fees associated with improvements identified in the plan are considered adequate mitigation and therefore, impacts to intersections identified in the plan would be considered less than significant with mitigation. However, many intersections identified below for payment of fair share fees are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, impacts to intersections not identified within any plan are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

Offsite Improvements

Implementation of the proposed offsite improvements would not cause an increase in traffic. Offsite improvements would include the development of infrastructure to accommodate the uses proposed as part of the project, and would not create an increase in traffic. As a result, development of the proposed offsite improvements would result in less than significant impacts.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would decrease the amount of residential units proposed as part of the project, thus decreasing the amount of daily trips. Should the Golf Course be implemented, an increase in traffic would occur when compared to existing conditions. However, traffic associated with the Golf Course Overlay is not anticipated to be greater than traffic generated by the proposed project. Although population and daily trips would be reduced, impacts would remain less than significant with the implementation of Mitigation Measure TRA-2.

Equestrian Overlay

Impacts associated with the Equestrian Overlay would be similar to those identified for onsite improvements. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

TRA-2: **Applicants of development within the project area shall be subject to their proportionate fair share of roadway improvements to Navajo Road/Highway 18 intersection, Joshua Road/Highway 18 intersection, Highway 18/Bear Valley Road intersection, and Milpas Drive/Highway 18 intersection, Dale Evans Parkway/High Desert Corridor EB Ramps (future intersection), Dale Evans Parkway/High Desert Corridor WB Ramps (future intersection), High Desert Corridor NB Ramps/Waalew Road (future intersection), High Desert Corridor SB Ramps/Waalew Road (future intersection), High Desert Corridor NB Ramps/Standing Rock Avenue (future intersection), High Desert Corridor SB Ramps/Standing Rock Avenue (future intersection), Highway 18/High Desert Corridor WB Ramps (future intersection), Highway 18/High Desert Corridor EB Ramps (future intersection), Central Road/High Desert Corridor WB Ramps (future intersection), and Central Road/High Desert Corridor EB Ramps (future intersection) as identified in Table 3.12-7: Regional Intersection Mitigation Summary for Interim Year (2020) and Horizon Year 2030 With Project Scenarios. The finance plan shall be approved by City Council prior to issuance of any building permit for the Hacienda at Fairview Valley development. The Town of Apple Valley shall be responsible for the construction of these intersection and roadway improvements.**

Table 3.12-7
Regional Intersection Mitigation Summary for Interim Year (2020) and Horizon Year 2030 With Project Scenarios

Regional Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
Interim Year 2020	
Navajo Road (NS) at:	
Hwy 18 (EW)	Construct 2nd NB exclusive left-turn lane
	Construct 3rd EB through lane
	Construct 1st EB exclusive right-turn lane with overlap phase
	Construct 2nd WB exclusive left-turn lane
	Construct 3rd WB through lane
Joshua Road (NS) at:	

Regional Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
Hwy 18 (EW)[1]	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Reconstruct SB shared left through lane as 1st exclusive left-turn lane
	Reconstruct SB right-turn lane as through lane
	Construct 2nd EB exclusive left-turn lane
Hwy 18 (NS) at:	
Bear Valley Road (EW)[1]	Install a traffic signal with EB right-turn overlap phase
Milpas Drive (NS) at:	
Hwy 18 (EW)[1]	Install a traffic signal
	Construct 1st NB exclusive left-turn lane
	Construct 1st SB exclusive left-turn lane
	Construct 1st EB exclusive left-turn lane
	Construct 2nd EB through lane
	Reconstruct WB shared left through lane as 1st exclusive left-turn lane
	Reconstruct WB right-turn lane as through lane
	Construct 2nd WB through lane
Horizon Year 2030	
Dale Evans Parkway (NS) at:	
High Desert Corridor EB Ramp (EW)	New Interchange
Dale Evans Parkway (NS) at:	
High Desert Corridor WB Ramp (EW)	New Interchange
High Desert Corridor NB Ramps (NS) at:	
Waalew Road (EW)	New Interchange
High Desert Corridor NB Ramps (NS) at:	
Standing Rock Avenue (EW)	New Interchange
High Desert Corridor SB Ramps (NS) at:	
Waalew Road (EW)	New Interchange
High Desert Corridor SB Ramps	

Regional Intersections	Mitigation (development applicants shall be subject to the proportionate fair share)
(NS) at:	
Standing Rock Avenue (EW)	New Interchange
Central Avenue (NS) at:	
High Desert Corridor WB Ramps (EW)	New Interchange
Central Avenue (NS) at:	
High Desert Corridor EB Ramps (EW)	New Interchange
Highway 18 (NS) at:	
High Desert Corridor WB Ramps	New Interchange
Highway 18 (NS) at:	
High Desert Corridor EB Ramps	New Interchange
Central Road (NS) at:	
High Desert Corridor WB Ramps	New Interchange
Central Road (NS) at:	
High Desert Corridor EB Ramps	New Interchange

**Improvements in bold required either Interim or Long Range with the proposed project, not under cumulative Interim or Long Range without the proposed project.*
Source: Urban Crossroads, 2008.
[1]Intersection improvements identified in the South/East Apple Valley Local Area Transportation Facilities Plan

3.12-2a: Navajo Road/Highway 18

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Significant and Unavoidable Impact.**

Under existing conditions, the traffic-signal-controlled Navajo Road/Highway 18 operates at LOS A with an average delay of 16.9 seconds in the PM peak hour. The addition of the proposed project traffic would increase the average daily traffic delay over 50 seconds, shifting the level of service to F. This is considered a significant impact. Constructing a second northbound exclusive left-turn lane, constructing a third eastbound through lane, constructing a first eastbound exclusive right-turn lane with overlap phase, constructing a second westbound exclusive left-turn lane, and constructing a third westbound through lane would raise the level of service to C. Improvements associated with the intersection of Navajo Road/Highway 18 are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the

implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2b: Joshua Road/Highway 18

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Less than Significant with Mitigation.**

Improvements to Joshua Road/Highway 18 are currently identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Under existing conditions, the cross-street-stop-controlled Joshua Road/Highway 18 operates at LOS C with an average delay of 15.0 seconds in the AM peak hour and 23.2 seconds in the PM peak hour. The addition of the proposed project traffic would increase the average daily traffic delay over 50 seconds, shifting the level of service to F for both the AM and PM peak hour. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, reconstructing the southbound shared left through lane as a first exclusive left-turn lane, reconstructing the southbound right-turn lane as a through lane, and constructing a second eastbound exclusive left-turn lane would raise the level of service to C. Impacts would be reduced to less than significant levels by adding these improvements to the intersection through implementation of Mitigation Measure TRA-2.

3.12-2c: Highway 18/Bear Valley Road

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Less than Significant with Mitigation.**

Improvements to Highway 18/Bear Valley Road are currently identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Under existing conditions, the cross-street-stop-controlled Highway 18/Bear Valley Road operates at LOS B with an average delay of 11.2 seconds in the AM peak hour and LOS D with an average delay of 28.6 seconds in the PM peak hour. The addition of the proposed project traffic would increase the average daily traffic delay over 50 seconds, shifting the level of service to F for both the AM and PM peak hour. This is considered a significant impact. Installing a traffic signal with an eastbound right-turn overlap phase would raise the level of service to A in the AM peak hour and C in the PM peak hour. Impacts would be reduced to less than significant levels by adding these improvements to the intersection through implementation of Mitigation Measure TRA-2.

3.12-2d: Milpas Drive/Highway 18

Implementation of the proposed project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system. **Level of Significance: Less than Significant with Mitigation.**

Improvements to Milpas Road/Highway 18 are currently identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Under existing conditions, the cross-street-stop-controlled Milpas Drive/Highway 18 operates at LOS C with an average delay of 18.2 seconds in the AM peak hour and LOS D with an average delay of 30.6 seconds in the PM peak hour. The addition of the proposed project traffic would increase the average daily traffic delay over 50 seconds, shifting the level of service to F for both the AM and PM peak hour. This is considered a significant impact. Installing a traffic signal, constructing a first northbound exclusive left-turn lane, constructing a first southbound exclusive left-turn lane, constructing a first eastbound exclusive left-turn lane, constructing a second eastbound exclusive left-turn lane, reconstructing the westbound shared left through lane as a first exclusive left-turn lane, reconstructing the westbound right-turn lane as a through lane, and constructing a second westbound through lane would raise the level of service to B in both the AM and PM peak hour. Impacts would be reduced to less than significant levels by adding these improvements to the intersection through implementation of Mitigation Measure TRA-2.

3.12-2e: Dale Evans Parkway/High Desert Corridor EB Ramps (future intersection)

Development of the proposed project would generate unacceptable levels of service at the future intersection of Dale Evans Parkway (NS) at High Desert Corridor EB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Evans Parkway/High Desert Corridor EB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project Conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Dale Evans Parkway/High Desert Corridor EB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2f: Dale Evans Parkway/High Desert Corridor WB Ramps (future intersection)

Development of the proposed project would generate unacceptable levels of service at the future intersection of Dale Evans Parkway (NS) at High Desert Corridor WB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Dale Evans Parkway/High Desert Corridor WB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Dale Evans Parkway/High Desert Corridor WB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2g: High Desert Corridor NB Ramps/Waalew Road (future intersection)

Development of the proposed project would generate unacceptable levels of service at the future intersection of High Desert Corridor NB Ramps (NS) at Waalew Road (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of High Desert Corridor NB Ramps/Waalew Road is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of High Desert Corridor NB ramp/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2h: High Desert Corridor SB Ramps/Waalew Road (future intersection)

Development of the proposed project would generate unacceptable levels of service at the intersection of High Desert Corridor SB Ramps (NS) at Waalew Road (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of High Desert Corridor SB Ramps/Waalew Road is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of High Desert Corridor SB ramps/Waalew Road are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2i: High Desert Corridor NB Ramps/Standing Rock Avenue (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of High Desert Corridor NB Ramps (NS) at Standing Rock Avenue (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of High Desert Corridor NB Ramps/Standing Rock Avenue is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of High Desert Corridor NB ramps/Standing Rock Avenue are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2j: High Desert Corridor SB Ramps/Standing Rock Avenue (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of High Desert Corridor SB Ramps (NS) at Standing Rock Avenue (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of High Desert Corridor SB Ramps/Standing Rock Avenue is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of High Desert Corridor SB ramps/Standing Rock Avenue are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2k: Highway 18/High Desert Corridor WB Ramps (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of Highway 18 (NS) at High Desert Corridor WB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Highway 18/High Desert Corridor WB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Highway 18/High Desert Corridor WB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2l: Highway 18/High Desert Corridor EB Ramps (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of Highway 18 (NS) at High Desert Corridor EB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Highway 18/High Desert Corridor EB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Highway 18/High Desert Corridor EB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2m: Central Road/High Desert Corridor WB Ramps (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of Central Road (NS) at High Desert Corridor WB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Central Road/High Desert Corridor WB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Central Road/High Desert Corridor WB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

3.12-2n: Central Road/High Desert Corridor EB Ramps (future intersection)

Development of the SP would generate unacceptable levels of service at the intersection of Central Road (NS) at High Desert Corridor EB Ramps (EW). **Level of Significance: Significant and Unavoidable Impact.**

The future intersection of Central Road/High Desert Corridor EB Ramps is planned as part of the future High Desert Corridor. Under 2030 Without Project conditions, a new interchange is required at this intersection. The addition of the proposed project traffic would further increase the average daily traffic at this intersection. Under future conditions, Post 2030 With Project impacts would be reduced with the completion of new interchanges and implementation of Mitigation Measure TRA-2. Improvements associated with the intersection of Central Road/High Desert Corridor EB ramps are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, project impacts to this intersection are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

Hazards

3.12-3: *Implementation of the proposed project would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

Implementation of the proposed project would not substantially increase hazards due to a design feature or incompatible use because the project circulation design includes curves and controlled intersections that would comply with Town of Apple Valley and County road design standards. The proposed project site is adjacent to an established unpaved road that provides good sight distance at local access points. Therefore, this project would not substantially increase hazards due to a design feature and would result in less than significant impacts.

Offsite Improvements

The proposed project offsite improvements would not create any design hazards as all improvements would be required to comply with Town of Apple Valley and County standards and regulations regarding land use compatibility and roadway design in order to gain approval. As a result, development following the implementation of the proposed project would result in less than significant impacts.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would be required to comply with Town of Apple Valley and County standards and regulations regarding land use compatibility and roadway design in order to gain approval. As a result, development of the proposed project Golf Course Overlay would result in less than significant impacts.

Equestrian Overlay

Implementation of the Equestrian Overlay would be required to comply with Town of Apple Valley and County standards and regulations regarding land use compatibility and roadway design in order to gain approval. As a result, development of the proposed project Equestrian Overlay would result in less than significant impacts.

Emergency Access

3.12-4: *Implementation of the proposed project would result in inadequate emergency access.*

Level of Significance: Less than Significant Impact.

Onsite Improvements

The project site plan will be reviewed for conformity with the County standard plans and industry standards for items such as minimum lane width, intersection sight lines, and maximum street grades. Nothing in the design of the current site plan would create an unsafe condition for automobiles or trucks. In addition, project access points (onsite driveways) were evaluated by phase to determine lane configurations and traffic controls. Therefore, the proposed project would not substantially increase hazards due to a design feature and would result in less than significant impacts. Refer to Exhibit 2.0-7, *Conceptual Circulation Plan* in Chapter 2.0 of this document for emergency vehicle access routes to the proposed project site.

For emergency situations where entry to the project site via the intersection of Laguna Seca Drive at Cahuilla Road is prohibited, adequate emergency vehicle access shall be provided pursuant to County requirements through adjacent and parallel roads (such as Sloan Road and Keator Road).

Offsite Improvements

The proposed project offsite improvements would not result in inadequate emergency access because any improvements would be required to comply with Town of Apple Valley and County standards and regulations regarding land use compatibility and roadway design in

order to gain approval. As a result, development following the implementation of the proposed project would result in less than significant impacts.

Overlay Districts

Golf Course Overlay

Should the Golf Course Overlay be implemented, roads associated with the development would be required to comply with Town of Apple Valley and County standards and regulations regarding roadway design for emergency access in order to gain approval. As a result, development of the proposed Golf Course Overlay would result in less than significant impacts.

Equestrian Overlay

Should the Equestrian Overlay be implemented, impacts would be similar to those discussed above in onsite improvements. As a result, development of the proposed Equestrian Overlay would result in less than significant impacts.

Parking Capacity

3.12-5 *Implementation of the proposed project would result in inadequate parking.* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

Parking would be provided at each residence in the project site. Residential uses would include private garages with guest parking located within driveways and within street right-of-ways. Designated parking areas would also be located within recreation and commercial areas in conformance with parking ratios required by the County for each land use type. In addition, the project site plan will be reviewed for conformity with the County standard plans and industry standards for items related to providing adequate parking. Therefore, the proposed project would not substantially result in inadequate parking and would result in less than significant impacts.

Offsite Improvements

The proposed project offsite improvements would not result in inadequate parking capacity because any improvements would be required to comply with Town of Apple Valley and County standards and regulations regarding parking capacity in order to gain approval. As a result, development following the implementation of the proposed project would result in less than significant impacts.

Golf Course Overlay

Implementation of the Golf Course Overlay would be required to comply with Town of Apple Valley and/or County standards and regulations regarding acceptable on-site parking capacity as a condition of approval. As a result, development of the proposed Golf Course Overlay would result in less than significant impacts.

Equestrian Overlay

Implementation of the Equestrian Overlay would be required to comply with Town of Apple Valley and County standards and regulations regarding acceptable parking capacity in order to gain approval. As a result, development of the proposed Equestrian Overlay would result in less than significant impacts.

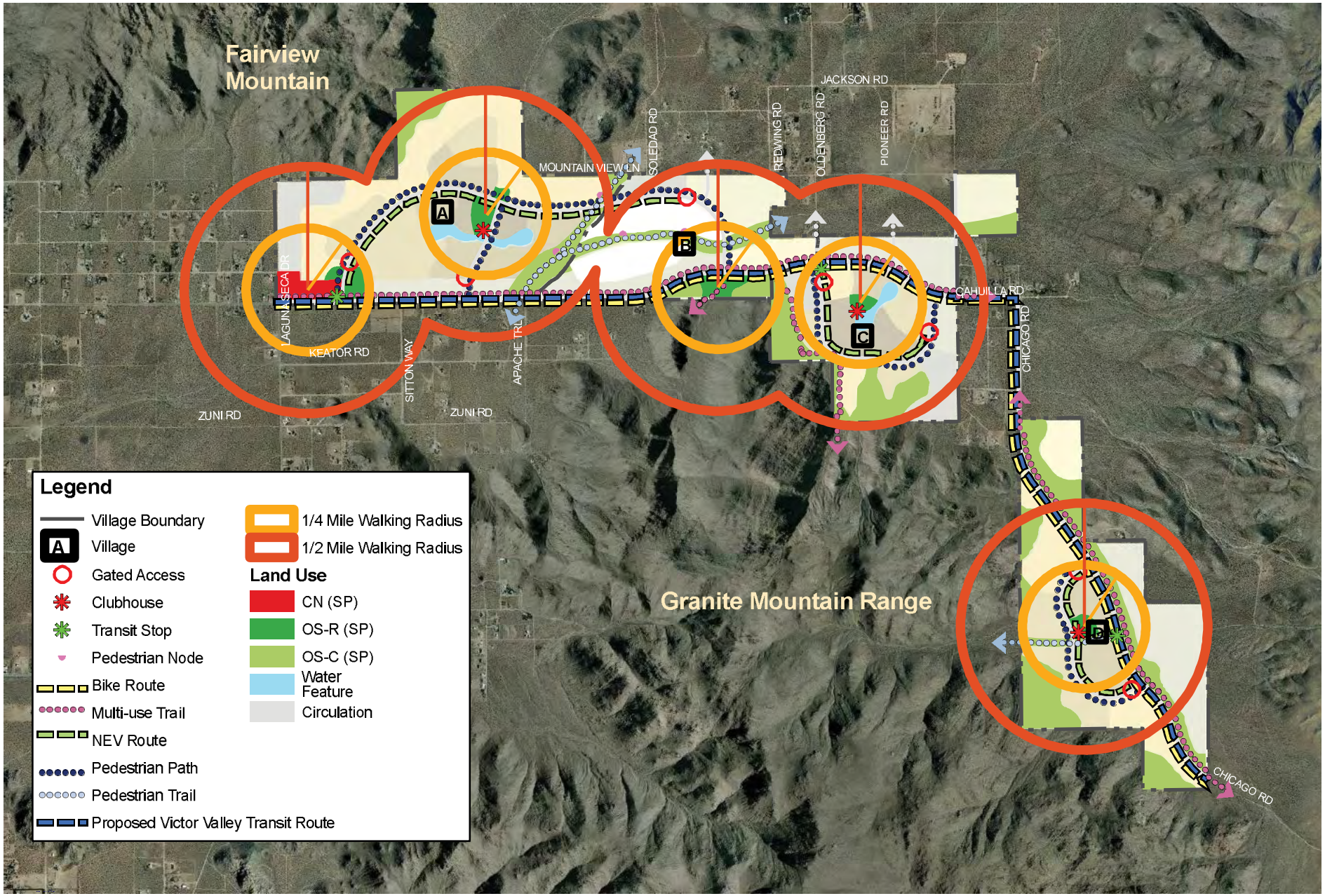
Alternative Transportation

3.12-6 *Implementation of the proposed project would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).* **Level of Significance: Less than Significant Impact.**

Onsite Improvements

The proposed project site is currently not developed and not served by public transportation. The proposed project identifies a proposed VVTA (Victor Valley Transit Authority) transit route and the Specific Plan identifies three (3) possible transit stops within the site as depicted in Exhibit 3.12-13, *Conceptual Mobility Plan* to serve existing and future residents. The onsite design should accommodate private and/or public bus access design and parking, as well as bus turnouts and bicycle racks in compliance with Town of Apple Valley and County standards and regulations regarding roadway design for alternative transportation in order to gain approval.

Additionally, the proposed bike route and multi-use trail network would provide alternative transportation routes. Currently, dirt roads exist within the project site with no developed or constructed pedestrian or bicycle lanes. The proposed project would provide adequate bicycle and pedestrian circulation to accommodate the increased population. The proposed project includes an internal trail system to connect the four (4) Villages, Village Commons, and the Granite Mountains. The proposed project also identifies access and connections to BLM pedestrian and multi-use trails from the site. The project would include decomposed granite multi-use trails, traversable dikes and sidewalks along all roads to allow use by pedestrians, equestrians, and bicyclists. Exhibit 3.12-13, *Conceptual Mobility Plan* identifies bike routes, multi-use trails, Neighborhood Electric Vehicle (NEV) routes, pedestrian paths, and pedestrian trails. As a result, development of the proposed onsite improvements would result in less than significant impacts.



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

CONCEPTUAL MOBILITY PLAN

Exhibit 3.12-13

This page was intentionally left blank

Offsite Improvements

The proposed offsite improvements design would accommodate private and/or public bus access design and parking, as well as bus turnouts and bicycle racks in compliance with Town of Apple Valley and/or County standards and regulations regarding roadway design for alternative transportation in order to gain approval. Additionally, the proposed bike route and multi-use trail network would provide connections to offsite alternative transportation routes. As a result, development of the proposed offsite improvements would result in less than significant impacts.

Overlay Districts

Golf Course Overlay

Implementation of the Golf Course Overlay would result in impacts similar to those discussed under onsite improvements. Less than significant impacts would occur in this regard.

Equestrian Overlay

Implementation of the Equestrian Overlay would result in impacts similar to those discussed under onsite improvements. Less than significant impacts would occur in this regard.

3.12.3 Analysis of Cumulative Impacts

Cumulative Scenario

The proposed Hacienda at Fairview Valley Specific Plan encompasses approximately 1,557 acres in Fairview Valley in the unincorporated area of the County within the Sphere of Influence of the Town of Apple Valley. The project proposes a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units, 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The cumulative scenario impacts of this development upon traffic and circulation on and off site were analyzed by Urban Crossroads in conjunction with the County including all development envisioned through 2020 and 2030.

Cumulative Levels of Service

Cumulative Without Project Intersection Operations

Table 3.12-8, *2030 Without Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions,* below illustrates the levels of service of selected impacted

intersections at their existing state and year 2030 without the project and the improvements. The LOS at these intersections will decrease even without the project, however, that the improvements listed in Table 3.12-6 above, would mitigate these deficiencies, increasing the levels of service.

Table 3.12-8:
2030 Without Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions

Intersection	Traffic Control	Existing Level of Service		2030 LOS Without Project	
		AM	PM	AM	PM
Dale Evans Parkway (NS) at:					
• High Desert Corridor NB Ramps (EW)	TS				
• High Desert Corridor SB Ramps (EW)	TS				
• Corwin Road (EW)	CSS	-	-	A	A
-with improvements	TS	-	-	B	B
		B	B	F	F
		-	-	C	C
South Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	C	C
North Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	B	C
Dale Evans Parkway (NS) at:					
• Otoe Road (EW)	CSS	A	B	E	D
-with LOS "D" improvements	CSS	-	-	C	D
-with LOS "C" improvements	TS	-	-	B	B
• Thunderbird Road (EW)	AWS	C	B	F	F
-with improvements	TS	-	-	C	C
Navajo Road (NS) at:					
• Waalew Road (EW)	AWS	A	A	F	F
-with improvements	TS	-	-	C	C
• Thunderbird Road (EW)	AWS	B	B	F	F
-with improvements	TS	-	-	C	C
• Highway 18 (EW)	TS	B	B	C	F
-with improvements	TS	-	-	C	C

Intersection	Traffic Control	Existing Level of Service		2030 LOS Without Project	
		AM	PM	AM	PM
High Desert Corridor SB Ramps (NS) at:					
• Waalew Road (EW)	TS			B	B
High Desert Corridor SB Ramps (NS) at:					
• Waalew Road (EW)	TS			B	A
Central Road (NS) at:					
• Lafayette Street (EW)	CSS				
• Waalew Road (EW)	AWS				
-with improvements	TS	-	-	A	B
• High Desert Corridor NB Ramps	TS	A	A	F	F
(EW)	CSS	-	-	C	C
• Cahuilla Road/Otoe Road (EW)	TS	-	-	B	B
-with improvements	TS	B	B	D	E
• High Desert Corridor SB Ramps	CSS	-	-	C	B
(EW)	TS	-	-	B	B
• Thunderbird Road (EW)	CSS	B	B	E	F
-with improvements	TS	-	-	C	C
• Standing Rock Avenue (EW)	TS	B	B	E	F
-with improvements	TS	-	-	C	B
• Esaws Avenue (EW)	TS	C	C	D	D
-with improvements	CSS	-	-	C	C
• Highway 18 (EW)	TS	B	B	B	C
• Ottawa Road (EW)	CSS	F	C	F	F
-with improvements	TS	-	-	C	B
• Nisqually Road (EW)		D	C	F	F
-with improvements		-	-	C	C
Joshua Road (NS) at:					
• Waalew Road (EW)	CSS	A	A	B	B
• Cahuilla Road/Otoe Road (EW)	CSS	A	A	D	C
-with improvements	TS	-	-	C	C
• Standing Rock Avenue (EW)	AWS	A	A	C	C
-with improvements	TS	-	-	C	C
• Esaws Avenue (EW)	CSS	-	-	B	B
• Highway 18 (EW)	CSS	C	C	F	F
-with improvements	TS	-	-	C	C
• Nisqually Road (EW)	CSS	-	-	A	A
High Desert Corridor SB Ramps (NS) at:		-	-	A	B

Intersection	Traffic Control	Existing Level of Service		2030 LOS Without Project	
		AM	PM	AM	PM
• Standing Rock Avenue (EW)	TS				
High Desert Corridor NB Ramps (NS) at: • Standing Rock Avenue (EW)	TS	-	-	A	A
High Desert Corridor SB Ramps (NS) at: • Highway 18 (EW)	TS	-	-	B	C
High Desert Corridor NB Ramps (NS) at: • Highway 18 (EW)	TS	-	-	A	A
Highway 18 (NS) at: • Bear Valley Road (EW) -with improvements	CSS TS	B -	D -	F A	F C
Milpas Drive (NS) at: • Highway 18 (EW) -with improvements	CSS TS	C -	D -	F B	F A
Laguna Seca Drive (NS) at: • Cahuilla Road (EW)	INTERSECTION DATA DOES NOT EXIST				
Driveway A (NS) at: • Cahuilla Road (EW)	INTERSECTION DOES NOT EXIST				
Driveway B (NS) at: • Cahuilla Road (EW)	INTERSECTION DOES NOT EXIST				
Driveway C (NS) at: • Cahuilla Road (EW)	INTERSECTION DOES NOT EXIST				

Source: Urban Crossroads, 2008.

TS = Traffic Signal CSS = Cross Street Stop AWS = All Way Stop

Cumulative With Project Conditions and Intersection Operations

Table 3.12-9, *2030 With Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions*, below depicts the declined and improved levels of service to the specified intersections with the implementation of the proposed project and the improvements to these intersections. The table shows that in some cases the LOS improved with the implementation of the project, with additional LOS Improvement after the implementation of the intersection improvements. The proposed project also includes new intersections that will alleviate some of the traffic from existing roads.

Table 3.12-9: 2030 With Project Conditions Intersection Analysis Level of Service Cumulative Impacts With Existing Conditions

Intersection	Traffic Control	Existing Level of Service		2030 LOS With Project	
		AM	PM	AM	PM
Dale Evans Parkway (NS) at:					
• High Desert Corridor NB Ramps (EW)	TS	-	-	A	B
• High Desert Corridor SB Ramps (EW)	TS	-	-	B	B
• Corwin Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	C	C
South Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	C	C
North Dale Evans Parkway (NS) at:					
• Waalew Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	B	C
Dale Evans Parkway (NS) at:					
• Otoe Road (EW)	CSS				
-with improvements	TS	A	B	E	D
• Thunderbird Road (EW)		-	-	**B**	**B**
-with improvements	AWS	C	B	F	F
	TS	-	-	C	C
Navajo Road (NS) at:					
• Waalew Road (EW)	AWS	A	A	F	F
-with improvements	TS	-	-	C	C
• Thunderbird Road (EW)	AWS	B	B	F	F
-with improvements	TS	-	-	C	C
• Highway 18 (EW)	TS	B	B	C	F
-with improvements	TS	-	-	C	C
High Desert Corridor SB Ramps (NS) at:					
• Waalew Road (EW)	TS			B	B
High Desert Corridor SB Ramps (NS) at:					
• Waalew Road (EW)	TS			B	A
Central Road (NS) at:					
• Lafayette Street (EW)	CSS	-	-	A	B
• Waalew Road (EW)	AWS	A	A	F	F

Intersection	Traffic Control	Existing Level of Service		2030 LOS With Project	
		AM	PM	AM	PM
-with improvements	TS	-	-	C	C
• High Desert Corridor NB Ramps (EW)	TS	-	-	B	C
• Cahuilla Road/Otoe Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	C	C
• High Desert Corridor SB Ramps (EW)	TS	-	-	B	C
• Thunderbird Road (EW)	CSS	B	B	F	F
-with improvements	TS	-	-	C	C
• Standing Rock Avenue (EW)	CSS	B	B	E	F
-with improvements	TS	-	-	C	B
• Esaws Avenue (EW)	TS	C	C	D	D
-with improvements	TS	-	-	C	C
• Highway 18 (EW)	TS	B	B	B	C
• Ottawa Road (EW)	CSS	F	C	F	F
-with improvements	TS	-	-	C	B
• Nisqually Road (EW)	CSS	D	C	F	F
-with improvements	TS	-	-	C	C
Joshua Road (NS) at:					
• Waalew Road (EW)	CSS	A	A	D	D
-with improvements	CSS	-	-	C	C
• Cahuilla Road/Otoe Road (EW)	CSS	A	A	F	F
-with improvements	TS	-	-	C	C
• Standing Rock Avenue (EW)	AWS	A	A	C	C
-with improvements	TS	-	-	C	C
• Esaws Avenue (EW)	CSS	-	-	B	B
• Highway 18 (EW)	CSS	C	C	F	F
-with improvements	TS	-	-	C	C
• Nisqually Road (EW)	CSS	-	-	A	A
High Desert Corridor SB Ramps (NS) at:					
• Standing Rock Avenue (EW)	TS	-	-	A	B
High Desert Corridor NB Ramps (NS) at:					
• Standing Rock Avenue (EW)	TS	-	-	B	A
High Desert Corridor SB Ramps (NS) at:					
• Highway 18 (EW)	TS	-	-	B	C
High Desert Corridor NB Ramps (NS) at:					
• Highway 18 (EW)	TS	-	-	A	A
Highway 18 (NS) at:					

Intersection	Traffic Control	Existing Level of Service		2030 LOS With Project	
		AM	PM	AM	PM
• Bear Valley Road (EW)	CSS	B	D	F	F
-with improvements	TS	-	-	B	C
Milpas Drive (NS) at:					
• Highway 18 (EW)	CSS	C	D	F	F
-with improvements	TS	-	-	B	A
Laguna Seca Drive (NS) at:					
• Cahuilla Road (EW)	CSS	-	-	B	C
-with improvements	TS	-	-	A	A
Driveway A (NS) at:					
• Cahuilla Road (EW)	TS	-	-	B	B
Driveway B (NS) at:					
• Cahuilla Road (EW)	CSS	-	-	B	A
Driveway C (NS) at:					
• Cahuilla Road (EW)	CSS	-	-	A	A

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, 2008.
TS = Traffic Signal CSS = Cross Street Stop AWS = All Way Stop

Assumed Cumulative Roadway Network

Cumulative Roadway Segment Improvements

The future cumulative roadway network includes certain roadway improvements, consistent with the County Standards that support the level of development anticipated to be in place in 2030. Major improvements assumed under cumulative conditions are listed in Table 3.12-10, *Cumulative Improvements - General Plan Buildout (Post-2030) Roadway Offsite Improvement Summary*, below.

Table 3.12-10:
Cumulative Improvements - General Plan Buildout (Post-2030) Roadway Offsite Improvement Summary

Intersection	Improvement (development applicants shall be subject to the proportionate fair share)
Dale Evans Parkway (NS) at: • High Desert Corridor EB Ramp (EW)	New Interchange
• High Desert Corridor WB Ramps (EW)	New Interchange
• Corwin Road (EW)	Install a traffic signal Reconstruct NB shared left through lane as 1st exclusive left Reconstruct NB right-turn lane as 1st through lane Construct 1st NB exclusive right-turn lane Construct 1st and 2nd SB exclusive left-turn lanes Construct 1st SB exclusive right-turn lane Construct 1st EB exclusive left-turn lane Construct 2nd EB through lane Reconstruct WB shared left through lane as 1st exclusive left Reconstruct WB right-turn lane as 1st through lane Construct 1st WB free right-turn lane
South Dale Evans Parkway (NS) at: • Waalew Road (EW)	Install a traffic Signal Reconstruct NB shared left right-turn lane as 1st exclusive left-turn lane Construct 1st NB exclusive right-turn lane Reconstruct WB shared left through lane as 1st exclusive left-turn lane Construct 2nd WB exclusive left-turn lane Reconstruct WB through lane
North Dale Evans Parkway (NS) at: • Waalew Road	Install traffic signal Construct 1st exclusive SB left-turn lane (includes 2nd WB receiving lane) Reconstruct EB shared left through lane as 1st exclusive left-turn lane

Intersection	Improvement (development applicants shall be subject to the proportionate fair share)
	Reconstruct EB through lane
Dale Evans Parkway (NS) at: • Otoe Road (EW)	Install traffic signal Construct 1st NB exclusive left-turn lane Construct 2nd NB through lane Construct 1st SB exclusive left-turn lane Construct 2nd SB through lane Construct 1st EB exclusive left-turn lane Construct 1st WB exclusive turn lane
• Thunderbird Road (EW)	Install traffic signal Reconstruct NB right-turn lane as 2nd through lane Reconstruct SB right-turn lane as 2nd through lane
Navajo Road (NS) at: • Waalew Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 2nd NB through lane Construct 1st and 2nd exclusive left-turn lanes (includes 2nd WB receiving lane) Construct 1st SB exclusive left-turn lane Construct 1st and 2nd SB exclusive left-turn lanes Construct 1st EB exclusive right-turn lane Construct 1st WB exclusive left-turn lane Construct 1st WB exclusive right-turn lane
• Thunderbird Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st SB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 2nd EB through lane Construct 1st WB exclusive left-turn lane
• Highway 18 (EW)	Construct 2nd NB exclusive left-turn lane Construct 3rd EB through lane Construct 1st EB exclusive right-turn lane with overlap phase Construct 2nd WB exclusive left-turn lane
High Desert Corridor SB Ramps (NS) at: • Waalew Road (EW)	New Interchange

Intersection	Improvement (development applicants shall be subject to the proportionate fair share)
High Desert Corridor NB Ramps (NS) at: • Waalew Road (EW)	New Interchange
Central Road (NS) at: • Lafayette Street	Construct 1st EB shared left through right-turn lane Construct 1st WB shared left through right-turn lane
• Waalew Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 2nd NB through lane Construct 1st SB exclusive left-turn lane Construct 1st SB exclusive right-turn lane with overlap phase Construct 1st and 2nd EB exclusive left-turn lanes Construct 1st WB exclusive left-turn lane Constuct 2nd WB through lane
Central Road (NS) at: • High Desert Corridor WB Ramps (EW)	New Interchange
• Otoe Road/ Cahuilla Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 2nd NB through lane Construct 1st SB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 1st EB though lane Construct 1st WB exclusive left-turn lane
• High Desert Corridor EB Ramps (EW)	New Interchange
• Thunderbird Road (EW)	Install a Traffic Signal Construct 1st NB exclusive left-turn lane Construct 1st SB exclusive left-turn lane Construct 2nd SB through lane Reconstruct EB shared left through lane as 1st exclusive left-turn lane Reconstruct EB exclusive right-turn lane as 1st though lane Construct 1st WB exclusive left-turn lane

Intersection	Improvement (development applicants shall be subject to the proportionate fair share)
• Standing Rock Avenue (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 1st WB exclusive left-turn lane
• Esaws Avenue (EW)	Reconstruct NB right-turn lane as 2nd though lane Reconstruct SB right-turn lane as 2nd though lane
• Ottawa Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 1st WB exclusive left-turn lane
• Nisqually Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Reconstruct WB shared left through lane as 1st exclusive left-turn lane Reconstruct WB right-turn lane as though lane
Joshua Road (NS) at: • Waalew Road (EW)	Install a traffic signal Reconstruct EB shared left through right-turn lane as shared left through lane Construct 1st EB exclusive EB right-turn lane
• Cahuilla Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st SB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 1st WB exclusive left-turn lane
• Standing Rock Ave (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st SB exclusive left-turn lane Reconstruct EB shared left through lane as 1st exclusive left-turn lane Reconstruct EB right-turn lane as through lane Construct 1st WB exclusive left-turn lane
• Esaws Avenue (EW)	Construct 1st WB shared left right-turn lane
• Highway 18 (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Reconstruct SB shared left through lane as 1st exclusive left-turn lane

Intersection	Improvement (development applicants shall be subject to the proportionate fair share)
	Reconstruct SB right-turn lane as through lane Construct 2nd EB exclusive left-turn lane
High Desert Corridor SB Ramps (NS) at: • Standing Rock Ave (EW)	New Interchange
High Desert Corridor NB Ramps (NS) at: • Standing Rock Ave (EW)	New Interchange
Highway 18 (NS) at: • High Desert Corridor WB Ramps (EW)	New Interchange
• High Desert Corridor EB Ramps (EW)	New Interchange
• Bear Valley Road (EW)	Install a traffic signal Construct 2nd NB exclusive left-turn lane Add SB right-turn overlap phase Construct 2nd EB exclusive left-turn lane Add free right-turn to existing EB right-turn lane
Milpas Drive (NS) at: • Highway 18 (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st SB exclusive left-turn lane Construct 1st EB exclusive left-turn lane Construct 2nd EB through lane Reconstruct WB shared left through lane as 1st exclusive left-turn lane Reconstruct WB right-turn lane as though lane Construct 2nd WB through lane
Laguna Seca Drive (NS) at: • Cahuilla Road (EW)	Install a traffic signal Construct 1st NB exclusive left-turn lane Construct 1st EB left-turn lane Construct 1st EB though lane Construct 1st WB through lane

Source: Hacienda at Fairview Valley, Traffic Impact Analysis, Urban Crossroads, 2008.

Cumulative Intersection Improvements

Based on the roadway segment improvements and cumulative development identified above, specific intersection improvements need to be implemented in order for cumulative traffic to operate at acceptable conditions.

Onsite *Improvements*

To ensure adequate circulation within the project itself, recommendations for onsite improvements provided by the Traffic Study completed by Urban Crossroads, 2008, include the following improvements in Table 3.12-11, *Cumulative Onsite Improvements*, below.

TRA-3 **The proposed project would ensure adequate circulation with the implementation of the improvements in Table 3.12-11, Cumulative Onsite Improvements, below, as well as ensuring that sight distance at each project access roadway should be reviewed with respect to standard Caltrans/ County of San Bernardino sight distance standards.**

Table 3.12-11:
Cumulative Onsite Improvements

Street or Intersection	Improvements
Cahuilla Road (half-section improvements)	Construct Cahuilla Road (half-section improvements) from Laguna Seca Road to Street "A" as a Secondary Highway. Construct Cahuilla Road (half-section improvements) as a Controlled Limited Access Collector, east of Street "A" to west of Street "C" (in Village B), in conjunction with development.
Cahuilla Road (Full section improvements)	Construct Cahuilla Road (full section improvements) within the project, as a Controlled Limited Access Collector in conjunction with development from east of Street C to Village C boundary.
Chicago Road (Full section improvements)	Construct Chicago Road (full section improvements) within the project, as a Controlled Limited Access Collector within Village D in conjunction with development
Cahuilla Road	Downgrade Cahuilla Road from a Secondary Highway to a Controlled Limited Access Collector east of Street "A".
Laguna Seca Drive at Cahuilla Road	Install a traffic signal
Cahuilla Road at Street "A"	Install a traffic signal

Offsite Improvements

As previously described, the necessary offsite improvements include the project contribution towards the cost of necessary project area improvements on a fair share or "pro-rata" basis by paying development impact fees and/or additional fair share contributions towards improvements not included in the adopted fee program.

TRA-4 All necessary offsite roadway improvements will be funded in part by the developer's proportionate fair share.

Transportation System Management Actions

Onsite Improvements

The onsite design should accommodate private and/or public bus access design and parking.

Offsite Improvements

As development in the area occurs, transit agencies should consider expanding service within the area.

Cumulative Mitigation

As discussed above, the proposed project would generate traffic that contributes to significant impacts at intersections onsite and offsite. Future development projects have a responsibility to contribute a fair share toward mitigation through development fees. Application of the fees toward regional and interregional highway, roadway, transit and demand management transportation measures would be the responsibility of several different agencies including the Town of Apple Valley, County, the San Bernardino Association of Governments (SANBAG). Fee application decisions would reflect the most cost-effective ways to address conditions on the interregional system as they affect intersections onsite and offsite. Construction of necessary improvements would be the responsibility of the Town of Apple Valley and the County. Additionally, the congestion on these roads is an existing condition, the mitigation of which is not the sole responsibility of the Project Applicants. Finally, the necessary improvements to these roads must undergo extensive design and environmental review prior to construction. For these reasons, adequate mitigation is not available. Until the improvements are made, the impacts to intersections onsite and offsite would be significant and unavoidable.

CHAPTER 4.0

GROWTH INDUCING EFFECTS

4.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES

Section 15126(d) of the State *CEQA Guidelines* requires an EIR to address the "growth-inducing" effects of a proposed project. Pursuant to Section 15126 (d) of the State *CEQA Guidelines*, a project would have growth-inducing effects if it would:

- Foster economic or population growth, or the construction of additional housing;
- Remove obstacles to population growth;
- Tax existing community services or facilities, requiring the construction of new facilities that could cause significant environmental effects; or,
- Encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Section 15126.2(d) states: "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." As such, this chapter of the EIR analyzes the potential environmental consequences of the foreseeable growth and development that could be induced by implementation of the proposed project.

4.2 Growth Inducing Impacts

Growth-inducing impacts fall into two (2) general categories, direct and indirect. Direct growth inducing impacts are generally associated with the provision of urban services to an undeveloped area. The provision of these services to a site, and the subsequent development, can serve to induce other landowners in the vicinity to convert their property to urban uses. Indirect, or secondary growth-inducing impacts, consist of growth induced in the region by the additional demands for housing, goods and services associated with the population increase caused by, or attracted to, a new project.

Population and Housing Growth

The proposed project would result in the construction of up to 3,114 residential units. The project proposes both deed-restricted active adult units (2,815 units) and larger lot traditional single-family residential units (299 units). Assuming an average household size of 1.85 persons per deed restricted active adult unit and an average household size of 2.68 persons per single-family residential unit, the project would increase the population of the desert region by approximately 6,009 persons (1.85 x 2,815 units + 2.68 x 299 units). This is an approximately 8.5-percent increase over the 2008 population of Apple Valley (70,092) and its sphere of

influence as reported by the Department of Finance. Thus, the amount of new residential growth by the project is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town of Apple Valley.

While the proposed project would directly induce population growth, the amount of growth would be within the range of growth anticipated by the SCAG, and would therefore not be considered substantial.

Economic Growth

The proposed project would generate new employment opportunities within the desert region by constructing new commercial uses. Assuming two (2) employees per 1,000 square feet of commercial space, it is estimated that the proposed project site could create up to 400 full-time-equivalent employment positions.

Overall, the unincorporated portions of the County are projected to experience a greater increase (66 percent) in the number of jobs than the County as a whole (40 percent). According to the Southern California Association of Governments (SCAG) Regional Transportation Program (RTP) Integrated Growth Forecast (2008), the amount of jobs created by the project (400) would consist of approximately 6.6 percent of the job growth anticipated for the Town between 2005 (12,488) and 2025 (18,500). Therefore, the amount of job growth generated by the proposed project would not trigger substantial migration to the Town of Apple Valley or County. It is likely that many of the jobs would be filled by people already living in the Town of Apple Valley or County. Overall, the unincorporated portions of the County are projected to experience a greater increase (66 percent) in the number of jobs than the County as a whole (40 percent). Therefore, the potential increase of approximately 400 jobs with the implementation of the proposed project would fall within the County's projections. Therefore, population impacts that may occur as a result of the jobs generated by the project would not be considered significant.

4.3 OBSTACLES TO GROWTH

Several types of projects can induce population growth by removing obstacles that prevent growth. An example of this type of project would be the expansion of a wastewater treatment plant, which would accommodate additional sewer connections within the service area, and therefore would allow future construction and growth. The existing County infrastructure would be unable to accommodate the utility needs of the proposed project and capacity increases would be required. The proposed infrastructure enhancements and upgrades, including roadways, water system, sewer system and storm drain system, would be designed to accommodate the proposed project. These infrastructure capacity increases would remove barriers that currently inhibit growth associated specifically with the proposed project site, resulting in the potential environmental impacts as discussed throughout this document.

4.4 TAX EXISTING COMMUNITY SERVICES OR FACILITIES

Substantial increases in population growth may tax existing community services and facilities, thus requiring the construction of new facilities that could cause significant environmental effects. The construction of new facilities may also result in the need to expand service capacity, which would then allow future population growth. As described in Section 3.10, *Public Services and Utilities*, the proposed project would not result in significant environmental effects related to public services and utilities with the implementation of mitigation measures. Therefore, the Specific Plan would not substantially tax existing public services and utilities.

4.5 CONCLUSION

The proposed project would directly induce population growth through the construction of new housing units. The amount of population growth generated by the proposed project (approximately 6,009 persons) would be within the range of growth anticipated by the Town of Apple Valley, County, and SCAG. Therefore, no growth related impacts beyond the environmental impacts discussed in Chapter 3 of this EIR are anticipated.

This page was intentionally left blank

CHAPTER 5.0

ALTERNATIVES TO THE PROPOSED ACTION

5.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

The State *CEQA Guidelines* Section 15126.6 mandates that an EIR include a comparative evaluation of the proposed project with a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project while simultaneously avoiding or substantially lessening any of the significant effects of the proposed project. Pursuant to Section 15126.6 (f)(1) of the State *CEQA Guidelines*, "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent)." Although these factors do not present a strict limit on the scope of reasonable alternatives to be considered, they help establish the context in which "the rule of reason" is measured against when determining an appropriate range of alternatives sufficient to establish and foster meaningful public participation and informed decision-making.

As described in Chapter 2, *Project Description*, the proposed project is a master planned residential community with opportunities for equestrian, family-oriented, and active adult (55+) lifestyles. The Specific Plan provides a mix of approximately 3,114 residential units (2,815 active adult units and 299 single family units), 15 acres of Neighborhood Commercial uses, and approximately 336 acres of Parks/Recreation/Open Space. The land uses would be linked together through a network of multi-use trials and pedestrian paths, parks, greenbelts, water features, and natural open space. In addition, the project proposes two (2) overlay districts to allow opportunity for expanding uses, including a Golf Course Overlay and an Equestrian Overlay. The project is divided into four (4) Villages.

5.2 PROJECT OBJECTIVES

The objectives of the project include the following:

- Maintain semi-rural character and promote a resort lifestyle that is compatible with the surrounding area;
- Establish community and support high desert lifestyles;
- Support natural features and resources;
- Establish a long-term master planned community;

- Implement green and sustainable principles that are socially responsible;
- Establish a "green" community for the high desert;
- Provide accessibility and services to the community;
- Provide a variety of recreational opportunities incorporating a comprehensive trail system, park, and recreation center; and
- Diversify housing product types to serve a range of lifestyles and market demands.

5.3 SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROPOSED PROJECT

The project's potentially significant impacts are set forth in Sections 3.1 through 3.12 of the Draft EIR. As noted in Sections 3.1 through 3.12, most of the potentially significant impacts identified can be mitigated to a less than significant level through implementation of feasible mitigation measures. However, significant and unavoidable impacts related to traffic, air quality, and aesthetics would occur as a result of implementation of the proposed project.

5.4 ALTERNATIVES TO THE PROPOSED PROJECT

Based on the purpose of the alternatives analysis as described above, and as prescribed in Section 15126.6 of the State *CEQA Guidelines*, the following alternatives were selected by the County of San Bernardino for evaluation in the EIR:

- **Alternative 1: No Project Alternative** - this Alternative would not involve the development of the proposed project. A Specific Plan would not be adopted with the implementation of Alternative 1. This Alternative does not preclude future development on this site. The proposed project site is currently zoned Rural Living (RL)-5, RL-20, and RL-40, which would allow development of up to 210 single-family residential units accommodating up to 563 people. Refer to Section 5.5 of this chapter for a more detailed analysis.
- **Alternative 2: Joshua Tree Conservation Alternative** - this Alternative would include the development of up to 2,318 active adult residential units and 585 single-family large lot units for a total of 2,903 residential units (approximately 563 people). This represents a reduction of 211 total residential units (-7 percent) and a net increase of 16 acres (+five (5) percent) when compared to the proposed project. Refer to Section 5.5 of this chapter for a more detailed analysis.
- **Alternative 3: No Neighborhood Commercial Alternative** - this Alternative would include the development of up to 3,114 residential units and open space. The No Neighborhood Commercial Alternative would not include the development of the 15-

acre Neighborhood Commercial uses (with a maximum of 200,000 square feet of commercial buildings) at the corner of Laguna Seca Road and Cahuilla Road. Refer to Section 5.5 of this chapter for a more detailed analysis.

Table 5.0-1, *Project Objectives Consistency Analysis*, identifies objectives consistency for each of the proposed alternatives.

Table 5.0-1:
Project Objectives Consistency Analysis

Project Objective	Alternative 1	Alternative 2	Alternative 3
Maintain semi-rural character and promote a resort lifestyle that is compatible with the surrounding area.	**Consistent:** Alternative 1 could result in the development of up to 210 single-family units, which would maintain the semi –rural character of the area.	**Consistent:** Alternative 2 would result in the development of up to 2,903 residential units in a resort style setting, with larger, semi-rural lots along project perimeter consistent with existing development in the surrounding areas.	**Consistent:** Alternative 3 would result in the development of up to 3,114 residential units in a resort style setting, with larger, semi-rural lots along project perimeter consistent with existing development in the surrounding areas.
Establish community and support high desert lifestyles.	**Inconsistent:** Alternative 1 would not develop a community, as development would occur on an individual basis.	**Consistent:** Alternative 2 would include the development of a master planned community with recreation, amenities, and infrastructure to support the community.	**Consistent:** Alternative 3 would include the development of a master planned community with recreation, amenities, and infrastructure to support the community.
Support natural features and resources.	**Consistent:** Alternative 1 would include minimal development, which would reduce impacts to natural resources and features.	**Consistent:** Alternative 2 would include increased open space to avoid large concentrations of Joshua trees.	**Consistent:** Alternative 3 would include increased open space at corner of Laguna Seca Drive and Cahuilla Road.
Establish a long-term master planned community.	**Inconsistent:** Alternative 1 would not develop a community, as development of residences and associated infrastructure would occur on an individual basis.	**Consistent:** Alternative 2 would include the development of a master planned community with recreation, amenities, and infrastructure to support the community.	**Consistent:** Alternative 3 would include the development of a master planned community with recreation, amenities, and infrastructure to support the community.
Implement green and sustainable principles that are socially	**Inconsistent:** Residences and associated infrastructure would	**Consistent:** Alternative 2 would include green and sustainable principles as	**Consistent:** Alternative 3 would include green and sustainable principles as

responsible.	occur on an individual basis, and therefore would not be required to adhere to the green and sustainable principles as outlined in the Specific Plan.	outlined in the Specific Plan.	outlined in the Specific Plan.
Establish a "green" community for the high desert.	**Inconsistent:** Residences and associated infrastructure would occur on an individual basis, and therefore would not be required to adhere to the green and sustainable principals as outlined in the Specific Plan.	**Consistent:** Alternative 2 would include green and sustainable principals as outlined in the Specific Plan.	**Consistent:** Alternative 3 would include green and sustainable principals as outlined in the Specific Plan.
Provide accessibility and services to the community.	**Inconsistent:** Alternative 1 would not develop a community, as development of residences and associated infrastructure would occur on an individual basis. Comprehensive circulation, drainage, and associated infrastructure improvements would not occur as part of Alternative 1.	**Consistent:** Alternative 2 would include the development of circulation, drainage, water, wastewater systems; and recreation, and commercial uses to support the community.	**Consistent:** Alternative 3 would include the development of circulation, drainage, water, wastewater systems; and recreation uses to support the community. This Alternative would not include commercial services or public safety onsite.
Provide a variety of recreational opportunities incorporating a comprehensive trail system, park, and recreation center.	**Inconsistent:** Alternative 1 would not develop trails, parks, or recreation systems as development would occur on an individual basis, and not as part of a master planned community.	**Consistent:** Alternative 2 would provide parks, a trail system, and recreation center to support the community.	**Consistent:** Alternative 3 would provide parks, a trail system, and recreation center to support the community.
Diversify housing product types to serve a range of lifestyles and market demands.	**Inconsistent:** Alternative 1 would not provide a range of housing types, as housing would be developed on an individual basis, as applications are received.	**Consistent:** Alternative 2 would provide a variety of housing types, including senior, equestrian and single-family residential units.	**Consistent:** Alternative 3 would provide a variety of housing types, including senior, equestrian and single-family residential units.

The analysis of project alternatives takes into consideration the base assumption that all applicable mitigation measures associated with the project would be implemented with the appropriate alternatives. However, applicable mitigation measures may be scaled down to reduce or avoid the potential impacts of the alternative under consideration, and may not precisely match those identified for the proposed project. If a specific impact is not raised within the discussion of an alternative, it is because the effect is expected to be the same as that associated with the implementation of the proposed project. Table 5.0-2, *Comparison of Alternative Project Impacts to the Proposed Project*, presents a comparison of the alternative project impacts with those of the proposed project.

Table 5.0-2:
Comparison of Alternative Project Impacts to the Proposed Project

Topic	Alternative 1: No Project Alternative	Alternative 2: Joshua Tree Conservation Alternative	Alternative 3: No Neighborhood Commercial Alternative
Aesthetics	<	NC	NC
Air Quality	<	>	>
Biological Resources	<	<	NC
Cultural Resources	<	<	<
Geology, Soils, and Seismicity	<	<	<
Hazards and Hazardous Materials	<	<	<
Hydrology, Drainage, and Water Quality	>	NC	NC
Land Use and Relevant Planning	<	NC	NC
Noise	<	>	<
Public Services and Utilities	<	>	>
Population and Housing	<	NC	NC
Transportation and Circulation	<	+/-	+/-

Notes:
> = Greater impact than that of the proposed project
< = Decreased impact from that of the proposed project
+/– = Greater impact with regard to some aspects of impact and decreased impact in other aspects
NC = No Substantial Change in impact from that of the proposed project

5.5 PROJECT ALTERNATIVES

A description of each alternative and a comparative environmental evaluation to the identified impacts of the proposed project is provided below and has been considered as part of the alternatives analysis in accordance with § 15126.6 (c) of the State *CEQA Guidelines*.

5.5.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

The No Project Alternative (Alternative 1) would not involve the development of the proposed project. A Specific Plan would not be adopted with the implementation of Alternative 1. The Amendment to the *General Plan* would not occur under Alternative 1. However, this alternative does not preclude future development on this site. The proposed project site is currently zoned Rural Living (RL)-5, RL-20, and RL-40. Based on the current County zoning, approximately 210 single family units could be permitted within the project site without a General Plan Amendment or Zone Change, accommodating approximately 563 people (assuming an average household size of 2.68 per the County *General Plan* (2007)) . Of this total, approximately 190 single family units are within the area corresponding to Villages A and B of the proposed project, which is the portion of the project site nearest to the existing single family homes to the west, south and north. Therefore, with the implementation of Alternative 1, the project site has the potential to be developed under the aforementioned land use/zoning designations in the future. Alternative 1 would not include the development of the associated infrastructure improvements proposed in the Specific Plan. The conclusion that 210 homes could be developed is based on the County's land use/zoning designations. Currently, within the project site, there are 957 acres of land designated as RL-5. Therefore, approximately 191 residential units could be developed within the RL-5 designation. There are currently 160 acres of land designated as RL-20 within the project area. Therefore, approximately eight (8) residential units could be developed within this designation. Lastly, there are 440 acres within the project site that are designated as RL-40. Therefore, approximately 11 residential units could be developed within this designation. Based on existing land use designations, 210 single family residences could be developed (191 + 8 + 11=210).

Impact Evaluation

Aesthetics

Future development may occur under the current zoning for the project site. Should future development occur under the RL-5, RL-20, and RL-40 zoning, approximately 210 single family units and corresponding infrastructure would be constructed. Impacts to aesthetics are not expected to be significant, as large amounts of open space would be retained.

Implementation of the proposed project would change the visual character of the site from a rural, vacant desert landscape to a developed community. The implementation of the uses associated with the Specific Plan would increase the amount of light and glare within the area. Implementation of the proposed Specific Plan would also significantly and permanently alter the scenic vista of the valley floor. Therefore, implementation of the proposed project would create significant and unavoidable aesthetic impacts.

Implementation of Alternative 1 would result in less than significant impacts associated with aesthetics, light, and glare.

Air Quality

Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed under the existing RL-5, RL-20, and RL-40 zoning. However, it is assumed that these homes would be built on an individual basis, over a period of time. Similarly, these homes would have large individual lots, thus inhibiting large numbers of residents to move into the area. This would decrease traffic, and thus decrease air quality impacts. Should the proposed project not be implemented, paving would not occur along Cahuilla Road or other roads within the project site, which has the potential to increase dust emissions. However, due to the fact that potential future residences would be constructed over a period of time and population increase is not anticipated to be significant, impacts would be considered less than significant.

During the construction phase of each residence, greenhouse gas emissions would be released through the burning of fossil-fuel in construction equipment. However, the extent to which these measures would reduce greenhouse gas emissions cannot be accurately estimated at this time since residences would be developed on an individual basis, thus no reduction in emissions is taken for purposes of this evaluation. Increased greenhouse gas emissions resulting from the added electrical demands of the project would be created, since electricity is often generated through the burning of coal, oil, or natural gas. Also, greenhouse gases would be released through commercial natural gas use, water consumption, and solid waste. The majority of greenhouse gas emissions associated with the daily project operations are the result of increased project-related motor vehicle activity. It is estimated that Alternative 1 (at buildout) would result in approximately 0.00075442 Tg CO_2e which represents approximately 0.000153 percent of California's 2004 total CO_2 emissions. Although GHG emissions associated with the development of approximately 210 single-family units is less than what is proposed as part of the project, the number of units that would be powered through renewable energy sources or those that would comply with applicable CAT Report Greenhouse Gas Emissions Reductions strategies is unknown. As such, impacts associated with greenhouse gases are considered to be significant and unavoidable.

Implementation of the proposed project would result in significant and unavoidable regional construction related emissions and long-term operational project emissions. In addition, because the proposed project would exceed the maximum population density for the site, the project is not considered to be consistent with applicable air quality management plans. The proposed project would also significantly contribute to cumulative emissions.

Implementation of Alternative 1 would result in less than significant impacts associated with air quality.

Biological Resources

Implementation of Alternative 1 could potentially result in the development of up to 210 residential units under the existing zoning, the development of which could potentially impact biological resources. However, these residences would be required to have a minimum of 5, 20, or 40 acre lots, which would disturb much less open space than the proposed project. It is anticipated that implementation of Alternative 1 would result in less than significant impacts to biological resources.

After mitigation, implementation of the proposed project would result in less than significant impacts on biological resources. However, implementation of the proposed project would result in unavoidable significant cumulative impacts related to biological resources.

Implementation of Alternative 1 would result in less than significant impacts associated with biological resources. No significant unavoidable impacts relative to biological resources would occur with the implementation of Alternative 1.

Cultural Resources

Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed. However, these residences would be required to have a minimum of 5, 20, or 40 acre lots, which would disturb much less open space than the proposed project, and thus, the potential for disturbance of cultural resources would be reduced. Conditions of approval for each individual application would require a cultural resources assessment for each parcel prior to ground disturbance. Therefore, it is anticipated that impacts would be less than significant.

The proposed project would not create any cultural resources impacts with the implementation of mitigation measures.

Cultural resources impacts associated with the implementation of Alternative 1 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to cultural resources would occur with the implementation of mitigation measures.

Geology, Soils, and Seismicity

Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed. However, fewer people and structures would be exposed to potential geology, soils, and seismicity impacts, thus reducing impacts. Implementation of similar mitigation measures as identified in the Draft EIR would reduce potential impacts to a level of less than significant.

The proposed project would not create any geology soils, and/or seismicity impacts with the implementation of mitigation measures.

Geology, soils, and seismicity impacts associated with the implementation of Alternative 1 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to geology, soils, and seismicity would occur with the implementation of mitigation measures.

Hazards and Hazardous Materials

Should future development occur under the existing zoning, a possibility exists that people could be exposed to hazards or hazardous materials on the project site. It is anticipated that because the number of homes that could potentially be built would be reduced, that fewer people would be exposed and/or generate hazards and hazardous materials when compared to the proposed project. Implementation of conditions of approval would reduce potential impacts to a level of less than significant.

The proposed project would not create any hazards and/or hazardous materials impacts with the implementation of mitigation measures.

Hazards and hazardous materials impacts associated with the implementation of Alternative 1 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to hazards and hazardous materials would occur with the implementation of mitigation measures.

Hydrology, Drainage, and Water Quality

Under Alternative 1, no detention basins or storm drainage systems would be constructed, and the project site would remain in its undeveloped state. Should future development occur under existing zoning, there is potential for 210 individual wells to supply groundwater to the allowed single-family residences. Assuming domestic water uses only, this scenario would result in a

marginal increase in demand for water resources and have limited potential to impact groundwater supplies. However, the potential exists that unless otherwise restricted by the Watermaster (MWA), impacts to water supplies from 210 rural single family homes as set forth under Alternative 1 could result in water demands generated by the keeping of animals, irrigation of pastureland, crops, and other permitted uses that would substantially increase water demand compared to the proposed Alternative. Although it is difficult to predict the level of impact to water resources that will result from Alternative 1 given the range of possible water uses that may emerge under development of 210 single family homes, water demand may be greater than the proposed Alternative and impacts to water resources could be potentially significant under Alternative 1. Should future development occur under the existing zoning for the project site, drainage systems would need to be developed.

Land Use and Planning

The proposed project site is currently designated as Rural Living by the County *General Plan*. The County *General Plan* envisions the future development of rural residential uses, with a minimum of five (5), 20, and 40 acres per dwelling unit. Implementation of Alternative 1 would be consistent with the County *General Plan*, and therefore, no significant impacts would occur. Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed.

Implementation of the proposed project would require a County General Plan Amendment (GPA). The GPA would allow the development of the proposed project in accordance with the goals of the County *General Plan* and increase allowable densities on the project site. The land use designation proposed for the project site is Specific Plan (SP). The County *General Plan* (adopted in 2007) currently designates the project site as Rural Living (RL). Upon approval of the proposed project which requests a GPA and Zone Change, the project site would be rezoned as Specific Plan. When a specific plan is adopted, it would supersede any conflicting provisions of the County *Development Code*, unless otherwise specifically stated in the Specific Plan. Therefore, impacts related to conflicts with the County *Development Code* would be less than significant.

Implementation of Alternative 1 would result in no significant impacts. Similarly, implementation of the proposed project would result in less than significant impacts with regard to land use and planning.

Noise

Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed. However, it is assumed that these homes would be built on an individual basis, over a period of time.

Similarly, these homes would have large individual lots, thus inhibiting large numbers of residents to move into the area. This would decrease traffic, and thus decrease noise impacts.

The proposed project would not create any noise impacts with the implementation of mitigation measures.

Implementation of Alternative 1 would result in less than significant impacts associated with noise.

Public Services and Utilities

Should future rural development occur on the project site under the existing zoning, approximately 210 single family units and corresponding infrastructure would be implemented and thus, an increase in public services and utilities would occur. It is not anticipated that large numbers of residences would be constructed at the same time. Rather, development of the project site would occur over a period of time. The increase in demand for public services and utilities is expected to be minimal, and is accounted for in the County *General Plan*. However, with the potential construction of approximately 210 single family units, there is a potential for 210 new wells to be drilled within the Fairview Valley over time, which could result in significant impacts. Implementation of Alternative 1 would not provide additional parks and recreational activities to the area, as is proposed as part of the project. Alternative 1 would also not include the development of a public safety facility, which would include a fire station and sheriff substation that would serve all residents in and near Fairview Valley. However, it is assumed that because the number of potential residences that could be built under the existing *General Plan* zoning would be much less than the proposed project, impacts are not anticipated to be significant with regard to public services and utilities. It is assumed that each of the 210 residential units that have the potential to be built under the existing zoning would not be connected to a sewer system, but rather would contain a septic tank on each lot. The County Development Code allows the use of septic tanks on lots greater than ½ acre. Therefore, the use of septic tanks would be in compliance with the County.

As mentioned above, assuming domestic water uses only, this scenario would result in a marginal increase in demand for water resources and water supplies are and will be available to meet demands. However, unless otherwise restricted by the Watermaster (MWA), there is potential that impacts to water supplies from 210 rural single family homes as set forth under Alternative 1 could result in water demand generated by the keeping of animals, irrigation of pastureland, crops, and other permitted uses that would increase water use relative to the proposed project. Although it is difficult to predict the level of impact to water resources that will result from Alternative 1 given the range of possible water uses that may emerge under development of 210 single family homes, water demand may be substantially greater than the proposed project and impacts to water resources could be potentially significant under Alternative 1.

The proposed project would result in less than significant impacts for all public services and utilities impacts would be less than significant with the implementation of mitigation measures. As described above, given the level of water demand that may result from Alternative 1 sufficient water supplies may not be available to meet demands. Therefore, Alternative 1 has the potential to result in significant impacts to water supplies.

Implementation of Alternative 1 would avoid all impacts associated with public services and utilities, except for water supplies, which may result in significant and unavoidable impacts.

Population and Housing

Should future development occur under the existing zoning, approximately 210 single family units and corresponding infrastructure have the potential to be constructed on the project site. Under Alternative 1, a population increase of approximately 563 residents could occur within the project site (refer to Section 3.11 for calculation.) It is not anticipated that large numbers of residences would be constructed at one time, and thus population increase would occur incrementally. Additionally, population growth associated with the current zoning for the project site was anticipated in the County *General Plan*, and was not found to be significant. Therefore, no significant impacts would occur in this regard.

Implementation of the proposed project would include the development of up to 3,114 dwelling units. Assuming an average household size of 2.68 persons for single-family residences, the Specific Plan would increase the population of the area by approximately 801 persons (2.68 persons per household x 299 single-family residences). Assuming an average household size of 1.85 persons per senior residential unit, the Specific Plan would increase the population of the area by approximately 5,208 persons (1.85 persons per household x 2,815 senior residences). Therefore, the total population increase generated by the proposed project would be approximately 6,009 persons. This is an approximately 8.5 percent increase in the 2008 population of Apple Valley as reported by the DOF, and approximately seven (7) percent of the growth anticipated within Apple Valley by 2025. Thus, the amount of new residential growth by the Specific Plan is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town. Therefore, because the population growth associated with the proposed project is within the estimates projected by SCAG, the proposed project would not exceed the amount of growth projected for the Town of Apple Valley and the County for the year 2025, and thus would result in less than significant impacts on population growth.

Implementation of Alternative 1 would result in less than significant impacts associated with population and housing.

Transportation and Circulation

Should future development occur on the project site with existing land use and zoning designations, residences would be required to be developed on five (5), 20, or 40 acre lots, resulting in the construction of approximately 210 single family units and corresponding infrastructure. Therefore, traffic impacts would be reduced when compared with the proposed project. However, no roadway or intersection improvements identified in the Draft EIR would occur, should Alternative 1 be implemented.

The proposed project would result in significant and unavoidable impacts to local and regional intersections, as well as cumulative traffic impacts.

Implementation of Alternative 1 would avoid result in less than significant impacts associated with traffic and circulation, as it would not generate new significant sources of traffic. Therefore, Alternative 1 would result in reduced traffic impacts when compared to the proposed project.

Conclusion

Implementation of the Alternative 1, No Project Alternative, would reduce potential impacts when compared to the proposed project, because fewer residences would be constructed. However, Alternative 1 would not meet the majority of the project's objectives, including establishing a long-term master planned community, implementing green and sustainable principles that are socially responsible, establishing a "green" community for the high desert, providing accessibility and services to the community, providing a variety of recreational opportunities incorporating a comprehensive trail system, park, and recreation center; and diversifying housing product types to serve a range of lifestyles and market demands.

5.5.2 ALTERNATIVE 2: JOSHUA TREE CONSERVATION ALTERNATIVE

Impact Evaluation

Alternative 2, Joshua Tree Conservation Alternative, would include the development of up to 2,318 active adult residential units and 585 single-family large lot units for a total of 2,903 residential units. This represents a reduction of 211 total residential units (-7 percent) when compared to the proposed project. Projects similar in nature (i.e. active adult communities in California) and within the proposed project vicinity were studied to identify an average range of dwelling units. It was determined that similar projects ranged in size from 600 dwelling units and up to 3,200 dwelling units. Thus, both the proposed project and Alternative 2 falls within the average range.

Alternative 2 would include 306 acres of Open Space Conservation (OS-C) (an increase of 26 acres) and 29 acres of Open Space Recreation (OS-R) (a decrease of 9 acres), for a total of 352 acres of open space. This represents a net increase of 16 acres in open space (+5 percent) when compared to the proposed project. Alternative 2 also includes the shifting of land uses in order to avoid the largest concentrations of existing Joshua trees. Alternative 2 would reduce the number of impacted Joshua trees by approximately 12 percent when compared to the proposed project.

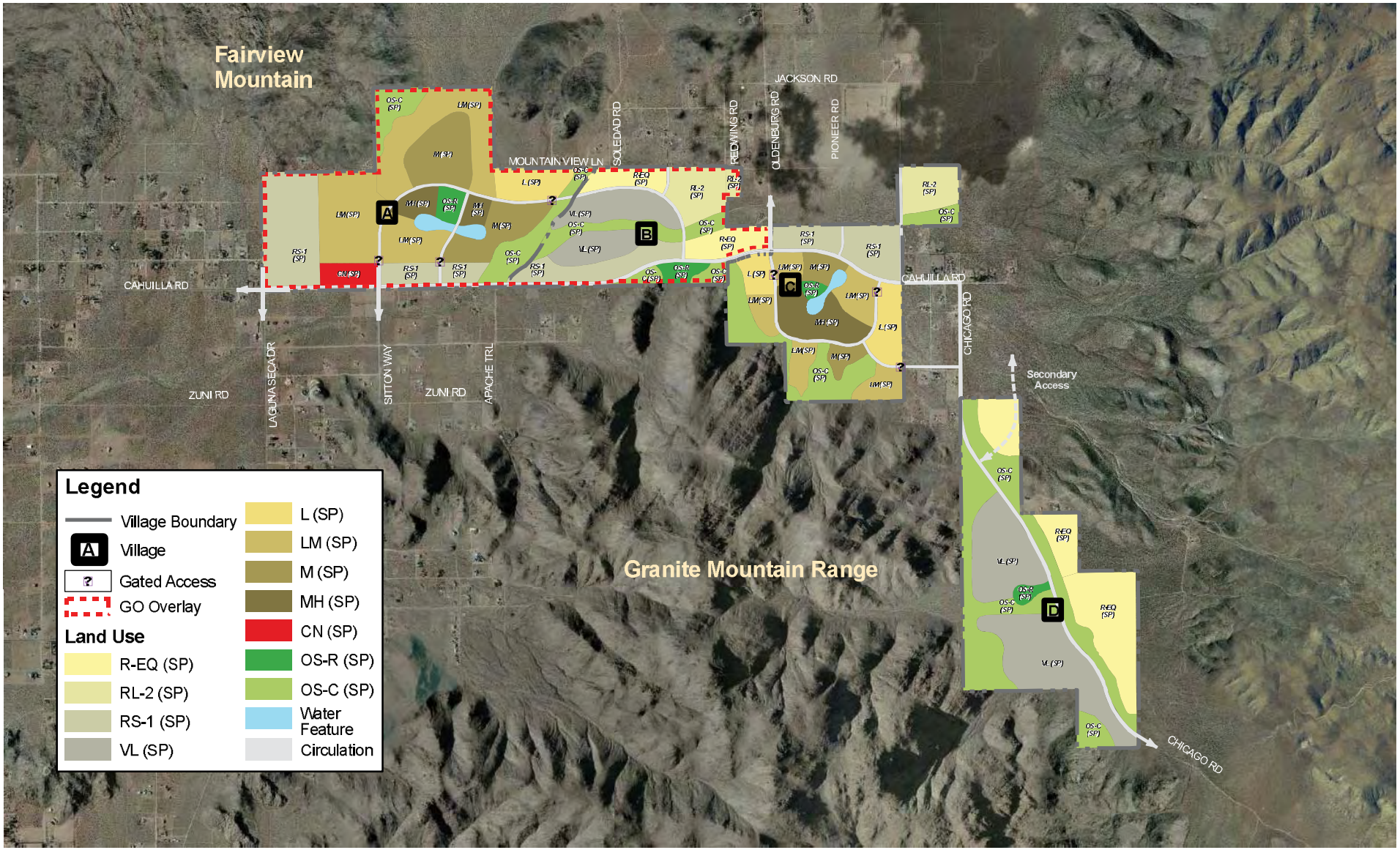
Under Alternative 2, the Neighborhood Commercial uses would remain at 15 acres, but the maximum allowable building area would be reduced to 150,000 square feet (compared with the project's proposed maximum of 200,000 square feet). The location of the Neighborhood Commercial land use designation would be relocated easterly to the corner of Cahuilla Road and Sutton Way.

The purpose of Alternative 2 is to reduce total residential density, maintain the neighborhood commercial component with a reduction in allowable building square footage to reduce the transportation impacts , increase the amount of conserved open space in an effort to reduce impacts to large concentrations of Joshua trees, all while achieving the majority of project objectives. Refer to Exhibit 5.0-1, *Alternative 2 Site Plan*.

Aesthetics

Alternative 2 would include the development of up to 2,903 residential units, which would adversely impact the scenic vista. Currently, the proposed project site consists of rural, vacant, desert landscape. Similar to the proposed project, implementation of Alternative 2 would permanently alter the proposed project site from a rural desert landscape to a master-planned community. In addition, the implementation of approximately 2,903 residential units would create a significant amount of light and glare within the project area. The relocation of the Neighborhood Commercial designation from the intersection of Cahuilla Road and Laguna Seca Road internally along Cahuilla Road may slightly reduce impacts from those existing residences along Cahuilla and Laguna Seca Road. However, this reduction in impacts would be minimal and would affect only a small portion of the project site. Therefore, implementation of Alternative 2 would create significant and unavoidable aesthetics impacts.

Implementation of the proposed project would change the visual character of the site from a rural, vacant desert landscape to a developed community. The implementation of the uses associated with the proposed project would increase the amount of light and glare within the



RBF CONSULTING

NOT TO SCALE

2009 JN 65-100492

Hacienda at Fairview Valley Specific Plan
Draft Environmental Impact Report

ALTERNATIVE 2 SITE PLAN

Exhibit 5.0-1

This page was intentionally left blank

area. Implementation of the proposed project would also significantly and permanently alter the scenic vista of the area. Therefore, implementation of the proposed project would create significant and unavoidable aesthetic impacts.

Implementation of Alternative 2 would result in similar significant and unavoidable impacts to aesthetics when compared to the proposed project.

Air Quality

Alternative 2 would include the development of up to 2,903 residential units, which would impact air quality similar to the proposed project. It is anticipated that Alternative 2 would increase trip generation rates by approximately 4 percent due to the increase in the number of single family residential units. Thus, it is anticipated that an increase in traffic generated by Alternative 2 would increase the amount of long term operational air quality impacts when compared to the proposed project. It is anticipated that Alternative 2 would result in significant and unavoidable impacts to regional construction related emissions, long term operational emissions, consistency with applicable air quality plans, and cumulative emissions.

During the construction phase of Alternative 2, greenhouse gas emissions would be released through the burning of fossil-fuel in construction equipment. However, the extent to which these measures would reduce greenhouse gas emissions cannot be accurately estimated at this time since residences would be developed on an individual basis, thus no reduction in emissions is taken for purposes of this evaluation. Increased greenhouse gas emissions resulting from the added electrical demands of the project would be created, since electricity is often generated through the burning of coal, oil, or natural gas. Also, greenhouse gases would be released through commercial natural gas use, water consumption, and solid waste. The majority of greenhouse gas emissions associated with the daily project operations are the result of increased project-related motor vehicle activity. It is estimated that Alternative 2 (at buildout) would result in approximately 0.0104 Tg CO_2e which represents approximately 0.0021 percent of California's 2004 total CO_2 emissions. Alternative 2 would comply with all feasible and applicable measures as identified by the CAT Report, and thus Alternative 2 is assumed to be consistent with the goals and objectives of the emissions reduction targets set forth in AB32. As such, impacts to climate change and greenhouse gas emissions would be less than significant. The proposed project would result in significant and unavoidable impacts to regional construction related emissions, long term operational emissions, consistency with applicable air quality plans, and cumulative emissions. Alternative 2 would result in greater air quality impacts when compared to the proposed project.

Biological Resources

Implementation of Alternative 2 would increase the amount of open space on the project site. Additionally, Alternative 2 would include a land use plan designed to minimize impacts to areas identified as having large concentrations of Joshua trees. This would reduce the number of potentially impacted Joshua trees by approximately 12 percent (or 466 Joshua trees) when compared to the proposed project. Alternative 2 includes the expansion of Open Space Conservation areas by 26 acres, particularly as a buffer along the western boundary of Village D. The open space acreage for Alternative 2 would encompass approximately 22.5 percent of the total acreage, which is a five (5) percent increase when compared to the proposed project. Implementation of the proposed 2,903 residential uses, associated infrastructure, and Neighborhood Commercial uses could adversely impact biological resources on the project site.

After mitigation, implementation of the proposed project would result in less than significant impacts on biological resources. However, implementation of the proposed project would result in unavoidable significant cumulative impacts related to biological resources.

Biological resources impacts associated with the implementation of Alternative 2 would be reduced when compared to the proposed project. Cumulative biological impacts would remain significant and unavoidable with the implementation of Alternative 2.

Cultural Resources

Implementation of Alternative 2 would include the development of up to 2,903 residential units, the construction of which may damage potential cultural resources. Alternative 2 would include larger areas of open space which would reduce potential impacts to cultural resources. However, implementation of mitigation measures similar to what is required of the proposed project would reduce impacts to a level of less than significant. Implementation of the proposed project would not result in significant cultural resources impacts with the implementation of mitigation measures.

Cultural resources impacts associated with the implementation of Alternative 2 would be reduced when compared to the proposed project due to the increased open space areas. No significant unavoidable impacts relative to cultural resources would occur with the implementation of mitigation measures.

Geology, Soils, and Seismicity

Implementation of Alternative 2 would result in fewer structures and people exposed to geology, soils, and seismicity impacts, because approximately 211 fewer residential units are proposed when compared to the project. Implementation of similar mitigation measures as identified in the Draft EIR would reduce potential impacts to a level of less than significant.

The proposed project would not create any geology soils, and/or seismicity impacts with the implementation of mitigation measures.

Geology, soils, and seismicity impacts associated with the implementation of Alternative 2 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to geology, soils, and seismicity would occur with the implementation of mitigation measures.

Hazards and Hazardous Materials

Fewer residences and people would generate and be exposed to hazards and hazardous materials, thus reducing potential impacts. Development of the project site would require site remediation of potential hazards from wells, trash, and chemicals which are located onsite. Remediation would reduce potential impacts in this regard to less than significant. The implementation of Alternative 2 would result in similar hazardous material impacts as the proposed project. Similar mitigation measures would be required for Alternative 2.

Hazards and hazardous materials impacts associated with the implementation of Alternative 2 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to hazards and hazardous materials would occur with the implementation of mitigation measures.

Hydrology, Drainage, and Water Quality

Implementation of Alternative 2 would result in impacts similar to those associated with the proposed project. Both Alternative 2 and the proposed project would include the development of storm drainage systems and detention basins, which would result in a beneficial impact to onsite drainage. With the implementation of mitigation measures, no significant impacts would occur regarding water quality and surface runoff. Under Alternative 2, there would be a somewhat reduced demand for water resources compared to the proposed project and impacts to groundwater supplies or recharge capabilities would be less than significant.

Implementation of Alternative 2 would result in similar hydrology, drainage, and water quality impacts when compared to the proposed project. With the implementation of mitigation measures, all impacts with the exception of groundwater supply would be reduced to a level of less than significant.

Land Use and Planning

Similar to the proposed project, implementation of Alternative 2 would require a General Plan Amendment to increase allowable densities on the project site. Alternative 2 includes siting

larger single-family residential lots along Laguna Seca Road and Cahuilla Road, which are more consistent with existing adjacent properties when compared to the proposed project. Similarly, Alternative 2 proposes to move the Neighborhood Commercial land use designation from the corner of Laguna Seca Road and Cahuilla Road to internally along Cahuilla Road would move commercial uses further from existing homes. Upon approval of the project and the General Plan Amendment, the project site would be rezoned as Specific Plan. When a specific plan is adopted, it would supersede any conflicting provisions of the County *Development Code*, unless otherwise specifically stated in the Specific Plan. Therefore, impacts related to conflicts with the County *Development Code* would be less than significant.

Land use and planning impacts associated with the implementation of Alternative 2 would be similar to that of the proposed project. No significant unavoidable impacts relative to land use and planning would occur.

Noise

Alternative 2 would include the development of up to 2,903 residential units, which would increase noise impacts similar to the proposed project. It is anticipated that Alternative 2 would increase trip generation rates by approximately 4 percent due to the increase in the number of single family residential units. Thus, it is anticipated that an increase in traffic generated by Alternative 2 would increase the amount of long term operational noise impacts when compared to the proposed project. Similar to the proposed project, Alternative 2 would not result in significant and unavoidable impacts with the implementation of mitigation measures similar to those proposed for the project.

Noise impacts associated with the implementation of Alternative 2 would be greater than the proposed project. However, no significant unavoidable impacts relative to noise would occur with the implementation of mitigation measures.

Public Services and Utilities

Alternative 2 proposes 2,318 active adult residential units and 585 single-family large lot units for a total of 2,903 residential units. Implementation of Alternative 2 would decrease the population by approximately 152 persons compared to the proposed project. Alternative 2 would result in approximately 5,857 persons (2.68 persons per household x 585 single family residences = 1,568 persons, plus 1.85 persons per household x 2,318 active adult residences = 4,289), which would slightly decrease demand for public services and utilities. Although Alternative 2 would decrease the population when compared to the proposed project, many public services and utilities would be impacted by the significant increase in population for the area. Although the total number of units is decreased when compared to the proposed project, the number of single-family units is increased, which would impact school services. It is anticipated that implementation of Alternative 2 would generate approximately 49 percent

more students than the proposed project. The Project Applicant would be required to pay development impact fees as required by Apple Valley Unified School District in order to offset impacts of additional students generated by the project and reduce impacts to a level of less than significant. It is anticipated that the proposed project would decrease water supply consumption by four (4) - six (6) percent when compared to the proposed project. Therefore, with mitigation measures it is expected that sufficient water supplies are and will be available to meet water demands generated by Alternative 2 and potential impacts to water supplies would less than significant. A slight reduction in impacts would occur with regard to police and fire services, as the population would decrease with the implementation of Alternative 2. However, mitigation measures similar to what is proposed in the Draft EIR would be necessary to reduce impacts to a level of less than significant.

All public services and utilities impacts would be less than significant with the implementation of mitigation measures.

Public services and utilities impacts associated with the implementation of Alternative 2 would be greater than the proposed project with regard to school impacts. All other public services and utilities impacts would be less than significant with the implementation of mitigation measures.

Population and Housing

Implementation of Alternative 2 would increase the population of the area by approximately 5,857 persons. This is an approximately 8.3 percent increase in the 2008 population of Apple Valley as reported by the DOF, and approximately seven (7) percent of the growth anticipated within Apple Valley by 2025. Thus, the amount of new residential growth by the proposed project is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town of Apple Valley. Therefore, because the population growth associated with the proposed Specific Plan is within the estimates projected by SCAG, the proposed project would not exceed the amount of growth projected for the County for the year 2025, and thus would result in less than significant impacts on population growth.

Implementation of the proposed project would include the development of up to 3,114 dwelling units. Assuming an average household size of 2.68 persons for single-family residences, the Specific Plan would increase the population of the area by approximately 801 persons (2.68 persons per household x 299 single-family residences). Assuming an average household size of 1.85 persons per senior residential unit, the Specific Plan would increase the population of the area by approximately 5,208 persons (1.85 persons per household x 2,815 senior residences). Therefore, the total population increase generated by the proposed project would be approximately 6,009 persons. This is an approximately 8.5 percent increase in the 2008 population of the Town of Apple Valley as reported by the DOF, and approximately seven (7) percent of the growth anticipated within Apple Valley by 2025. Thus, the amount of new

residential growth by the Specific Plan is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town of Apple Valley. Therefore, because the population growth associated with the proposed Specific Plan is within the estimates projected by SCAG, the Specific Plan would not exceed the amount of growth projected for the County for the year 2025, and thus would result in less than significant impacts on population growth.

Population and housing impacts associated with the implementation of Alternative 2 would be less than the proposed project, as the population generated by Alternative 2 is less than the proposed project. No significant unavoidable impacts relative to population and housing would occur.

Transportation and Circulation

Implementation of Alternative 2 would include the development of up to 2,318 active adult residential units and 585 single-family large lot units for a total of 2,903 residential units. In addition, Alternative 2 would include 306 acres of Open Space Conservation (OS-C) and 29 acres of Open Space Recreation (OS-R), for a total of 352 acres of open space. In addition, Alternative 2 would include the development of up to 150,000 SF of Neighborhood Commercial uses on 15 acres. These uses would decrease the amount of traffic in the area compared to the primary project alternative. The balance of uses would also be improved to the point where the capture of internal and pass-by traffic by the commercial uses would more than offset the additional traffic generated by the neighborhood commercial center. It is anticipated that implementation of Alternative 2 would result in a five (5) percent decrease in total trips generated by the project. Although Alternative 2 includes fewer total residential units, Alternative 2 proposes more single-family and fewer active adult residential uses, thus increasing the amount of residential trips generated by the Alternative. At the same time, the reduction in commercial uses would both reduce the overall project traffic and would also result in the capture of internal and pass-by trips that would exceed the new trips generated by the commercial land uses. Implementation of mitigation measures similar to what is proposed as part of the project would be necessary to reduce impacts to a less than significant level. However, the project would still contribute to significant and unavoidable local and regional intersection impacts and cumulative impacts which cannot be mitigated. Therefore, similar to the proposed project, implementation of Alternative 2 would result in significant and unavoidable local and regional intersection impacts and cumulative traffic impacts.

Conclusion

Implementation of Alternative 2 would result in greater impacts to public services and utilities, noise, and air quality. However, Alternative 2 would result in reduced impacts to biological resources, cultural resources, geology, soils, and seismicity, hazards and traffic related to total vehicle trips. Alternative 2 would meet the majority of the project objectives.

5.5.3 ALTERNATIVE 3: NO NEIGHBORHOOD COMMERCIAL ALTERNATIVE

Alternative 3 No Neighborhood Commercial Alternative would include the development of up to 3,114 residential units and open space. The No Neighborhood Commercial Alternative would not include the development of the 15-acre Neighborhood Commercial uses (with a maximum of 200,000 square feet of commercial buildings) at the corner of Laguna Seca Road and Cahuilla Road. This area would remain as open space conservation to provide an additional buffer for the existing residences along Laguna Seca Road and Cahuilla Road. All other uses identified in the Specific Plan would be developed as part of this alternative, with the exception of the Neighborhood Commercial uses.

Impact Evaluation

Aesthetics

Implementation of Alternative 3 would reduce aesthetics impacts at the corner of Cahuilla Road and Laguna Seca Road because this portion of the project site would remain as open space as opposed to commercial uses. However, Alternative 3 proposes the development of up to 3,114 residential units, which would significantly alter the project site from a rural desert landscape to a master-planned community. In addition, the implementation of approximately 3,114 residential units would create a significant amount of light and glare within the project area. Therefore, implementation of Alternative 3 would create significant and unavoidable aesthetics impacts.

Implementation of the proposed project would change the visual character of the site from a rural, vacant desert landscape to a developed community. The implementation of the uses associated with the proposed project would increase the amount of light and glare within the area. Implementation of the proposed project would also significantly and permanently alter the scenic vista of the area. Therefore, implementation of the proposed project would create significant and unavoidable aesthetic impacts.

Aesthetics impacts associated with the implementation of Alternative 3 would be similar to that of the proposed project. Implementation of both Alternative 3 and the proposed project would result in significant and unavoidable impacts.

Air Quality

Alternative 3 would include the development of up to 3,114 residential units, which would impact air quality similar to the proposed project. It is anticipated that residents would have to travel further for goods and services increasing the total vehicle miles traveled (VMT), thus significantly impacting long term operational air quality. It is anticipated that Alternative 3 would result in significant and unavoidable impacts to regional construction related emissions,

long term operational emissions, consistency with applicable air quality plans, and cumulative emissions. Due to the increase in vehicle miles traveled, greenhouse gas emissions associated with Alternative 3 is anticipated to be greater than the proposed project.

The proposed project would result in significant and unavoidable impacts to regional construction related emissions, long term operational emissions, consistency with applicable air quality plans, and cumulative emissions.

Air quality impacts associated with the implementation of Alternative 3 would be similar to the proposed project. Alternative 3 and the proposed project would result in significant and unavoidable impacts to regional construction related emissions, long term operational emissions, consistency with applicable air quality plans, and cumulative emissions.

Biological Resources

Implementation of Alternative 3 would potentially slightly decrease impacts to biological resources, as the 15-acre Neighborhood Commercial site proposed as part of the project would be designated as open space conservation. However, Alternative 3 proposes to develop up to 3,114 residential units, which would potentially impact biological resources onsite.

After mitigation, implementation of the proposed project would result in less than significant impacts on biological resources. However, implementation of the proposed project would result in unavoidable significant cumulative impacts related to biological resources.

Biological resources impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. Cumulative biological impacts would remain significant and unavoidable with the implementation of Alternative 3.

Cultural Resources

Implementation of Alternative 3 would potentially slightly decrease impacts to cultural resources, as the 15-acre Neighborhood Commercial site proposed as part of the project would be designated as open space, and therefore, fewer cultural resources may be disturbed. However, Alternative 3 would include the development of up to 3,114 residential units and associated infrastructure, which has the potential to damage cultural resources. Implementation of mitigation measures similar to what is required of the proposed project would reduce impacts to a level of less than significant.

Implementation of the proposed project would not result in significant cultural resources impacts with the implementation of mitigation measures.

Cultural resources impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to cultural resources would occur with the implementation of mitigation measures.

Geology, Soils, and Seismicity

Alternative 3 would include the development of up to 3,114 residential units, which would increase the amount of buildings and people exposed to geology, soils, and seismicity impacts. Alternative 3 would not include the development of the Neighborhood Commercial land use designation, which would reduce the number of people and buildings exposed to geology, soils, and seismicity related impacts. Implementation of mitigation measures similar to those identified in the Draft EIR would be necessary to reduce impacts to a level of less than significant.

The proposed project would not create any geology soils, and/or seismicity impacts with the implementation of mitigation measures.

Geology, soils, and seismicity impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to geology, soils, and seismicity would occur with the implementation of mitigation measures.

Hazards and Hazardous Materials

Implementation of Alternative 3 may slightly reduce impacts associated with hazards and hazardous materials, as no commercial uses would be implemented. Commercial uses tend to store various chemicals onsite for household cleaning purposes. Development of the project site would require site remediation of potential hazards from wells, trash, and chemicals which are located onsite. Remediation would reduce potential impacts in this regard to less than significant. Similar mitigation measures proposed for the project would be required for Alternative 3.

The proposed project would not create any hazards or hazardous materials impacts with the implementation of mitigation measures.

Hazards and hazardous materials impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to hazards and hazardous materials would occur with the implementation of mitigation measures.

Hydrology, Drainage, and Water Quality

Alternative 3 would result in impacts to groundwater supplies and recharge capabilities comparable to or less than those projected for the proposed project. There would be a slightly reduced demand for water resources from the elimination of the commercial center. As with the proposed project, impacts to groundwater supplies or recharge capabilities under Alternative 3 would be less than significant.

Implementation of Alternative 3 would result in similar hydrology, drainage, and water quality impacts when compared to the proposed project. With the implementation of mitigation measures, all impacts with the exception of groundwater supply would be reduced to a level of less than significant.

Land Use Planning

Similar to the proposed project, implementation of Alternative 3 would require a General Plan Amendment to increase allowable densities on the project site. Alternative 3 does not include the development of the Neighborhood Commercial land use designation from the corner of Laguna Seca Road and Cahuilla. However, all other uses proposed as part of the Specific Plan would be implemented as part of Alternative 3. Upon approval of the project and the General Plan Amendment, the project site would be rezoned as Specific Plan. When a specific plan is adopted, it would supersede any conflicting provisions of the County *Development Code*, unless otherwise specifically stated in the Specific Plan. Therefore, impacts related to conflicts with the County *Development Code* would be less than significant.

Land use and planning impacts associated with the implementation of Alternative 3 would be similar to that of the proposed project. No significant unavoidable impacts relative to land use and planning would occur.

Noise

Alternative 3 would include the development of up to 3,114 residential units, which would create construction-related noise impacts similar to the proposed project. However, because average daily trips would decrease with the implementation of Alternative 3, it is anticipated that long-term operational noise impacts would decrease as well. This is due to the fact that people from surrounding areas would not be driving to the Neighborhood Commercial uses, thus reducing the total amount of trips generated by the project. However, because the Neighborhood Commercial use would be removed from the project site, those living within and near the project site would need to drive further to access goods and services increasing the project's vehicle miles traveled (VMT). Noise impacts associated with the daily operation of a commercial site including delivery trucks and trash collection would be avoided with this alternative, which would reduce impacts. Similar to the proposed project, Alternative 3 would

not result in significant and unavoidable impacts with the implementation of mitigation measures similar to those proposed for the project.

The proposed project would not result in significant and unavoidable impacts with the implementation of mitigation measures.

Noise impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. No significant unavoidable impacts relative to noise would occur with the implementation of mitigation measures.

Public Services and Utilities

Alternative 3 would not include the development of the Neighborhood Commercial land use designation, which would include a fire station and sheriff substation. There are no police and/or fire stations near the project site that would be able to adequately serve the project upon buildout. Therefore, should Alternative 3 be implemented, a significant and unavoidable impact would occur with regard to police and fire services. All other public services and utilities impacts would be less than significant with the implementation of mitigation measures similar to those identified in the proposed project.

All public services and utilities impacts would be less than significant with the implementation of mitigation measures.

Implementation of Alternative 3 would result in greater significant public services and utilities impacts than the proposed project.

Population and Housing

Implementation of both the proposed project and Alternative 3 would include the development of up to 3,114 dwelling units. Assuming an average household size of 2.68 persons for single-family residences, the Specific Plan would increase the population of the area by approximately 801 persons (2.68 persons per household x 299 single-family residences). Assuming an average household size of 1.85 persons per senior residential unit, the Specific Plan would increase the population of the area by approximately 5,208 persons (1.85 persons per household x 2,815 senior residences). Therefore, the total population increase generated by Alternative 3 would be approximately 6,009 persons, which is equal to the proposed project. This is an approximately 8.5 percent increase in the 2008 population of Apple Valley as reported by the DOF, and approximately 7 percent of the growth anticipated within Apple Valley by 2025. Thus, the amount of new residential growth by the Specific Plan is within the range of population growth projected by SCAG, which estimates a 2025 population of 86,749 people in the Town. Therefore, because the population growth associated with the proposed Specific Plan is within the estimates projected by SCAG, the Specific Plan would not exceed the amount of growth

projected for the City for the year 2025, and thus would result in less than significant impacts on population growth.

Population and housing impacts associated with the implementation of Alternative 3 would be similar to that of the proposed project. No significant unavoidable impacts relative to population and housing would occur.

Transportation and Circulation

Implementation of Alternative 3 would include the development of up to 3,114 residential units and open space and recreation areas. Alternative 3 would not include the development of the 15-acre Neighborhood Commercial uses. It is anticipated that implementation of Alternative 3 would result in a four percent decrease in total trips generated by the project. This is due to the fact that people from surrounding areas would not be driving to the Neighborhood Commercial uses, thus reducing the total amount of trips generated by the project. However, because the Neighborhood Commercial use would be removed from the project site, those living within and near the project site would need to drive further to access goods and services increasing the project's vehicle miles traveled (VMT). The nearest grocery store to the project site is approximately 5.8 miles away, on Highway 18. Therefore, although total daily trips would be reduced with the implementation of Alternative 3, each individual trip would be longer, because residents would have to travel further to access goods and services, as neighborhood commercial uses would not be implemented with Alternative 3. Implementation of mitigation measures similar to what is proposed as part of the project would be necessary to reduce impacts. However, the project would contribute to significant and unavoidable local and regional intersection impacts and cumulative traffic impacts which cannot be mitigated.

Long term operational traffic impacts associated with the implementation of Alternative 3 would be reduced when compared to the proposed project. Similar to the proposed project, implementation of Alternative 3 would result in significant and unavoidable local and regional intersection impacts and cumulative traffic impacts.

Conclusion

Implementation of Alternative 3 would result in greater impacts to air quality (GHG emissions), traffic (related to vehicle miles traveled), and public services and utilities. However, Alternative 3 would result in reduced impacts to traffic (related to total number of trips) noise, biological resources, cultural resources, geology, soils, and seismicity, and hazards. Alternative 3 would meet the majority of the project objectives, with the exception of providing services to the community.

5.6 ALTERNATIVES REJECTED FROM FURTHER CONSIDERATION

Alternative Site Alternative

The Alternative Site Alternative proposes that the proposed project be built on an alternative site within the Apple Valley Town Limits or Sphere of Influence. Following initial consideration of this alternative, it was determined there are no available sites within the Apple Valley Town Limits or Sphere of Influence that would accommodate the size, density and amenities of the project to meet its objectives; another site of this size would cause approximately the same potentially significant impacts; and the Project Applicant already owns the project site. For these reasons, this alternative was rejected from further consideration.

No Active Adult Uses Alternative

The No Active Adult Uses Alternative would include the development of single-family residences on the project site, and would not include the development of any active adult uses. However, this alternative does not meet the basic project objectives, including providing diverse housing product types and providing accessibility and services to the community. Therefore, for these reasons, the No Active Adult Uses Alternative was rejected from further consideration.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an Environmentally Superior Alternative be identified; that is, an alternative that would result in the fewest or least significant environmental impacts. If the No Project Alternative is the environmentally superior alternative, State *CEQA Guidelines* Section 15126.6(e) requires that another alternative that could feasibly attain most of the project's basic objectives be chosen as the environmentally superior alternative.

The No Project Alternative is the environmentally superior alternative. The No Project avoids or reduces the majority of impacts associated with the proposed project. However, the No Project Alternative does not meet the basic project objectives. Therefore, for this reason, this alternative is rejected.

In comparison to all of the alternatives analyzed, Alternative 2, the Joshua Tree Conservation Alternative, is considered the environmentally superior alternative. Alternative 2 avoids and reduces many impacts due to the revised land plan. This alternative increases the natural open space by 26 acres (total open space by a net 16 acres) at locations which benefit adjacent offsite habitats and highest concentrations of existing onsite Joshua Trees. This alternative retains the Neighborhood Commercial (CN) which makes the project consistent with County policies/programs, Attorney General Guidelines, 2006 CAT Report strategies, etc. This alternative relocates the CN easterly away from the proposed project corner to increase land use

compatibility with existing homes to the west of the project site. This alternative retains the CN, but reduces the maximum allowed building square footage while retaining the Public Safety Center.

Alternative 2 would satisfy the majority of the proposed project objectives and reduces more significant impacts than Alternative 3. Alternative 2 would result in reduced impacts to biological resources, traffic, noise, cultural resources, geology, soils, and seismicity, and hazards. This alternative would provide the County with a range of housing types and densities, as well as parks, open space, and infrastructure.

CHAPTER 6.0

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

6.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

Section 15126.2 (c) of the State *CEQA Guidelines* requires that an EIR discuss the significant irreversible environmental changes that would be involved in a proposed project should it be implemented. The State *CEQA Guidelines* mandate that the EIR must address any significant irreversible environmental changes that would be involved in the proposed action should it be implemented (State *CEQA Guidelines* Section 15126.2[c]). An impact would fall into this category if:

- The proposed project involves a large commitment of nonrenewable resources;
- The primary and secondary impacts of the project generally commit future generations to similar uses;
- The proposed project involves uses in which irreversible damage could result from any potential environmental incidents associated with the project; or
- The proposed consumption of resources is not justified (e.g., the project results in wasteful use of energy).

6.2 PROJECT IMPACTS

Implementation of the proposed project would require the long-term commitment of natural resources and land.

Implementation of the proposed project would result in significant irreversible environmental changes, both onsite and offsite. Numerous long-term physical environmental changes would occur, including changes in aesthetics; biological resources; hydrology, drainage, and water quality; public services and utilities; traffic and circulation; and air quality, including impacts to global climate change.

These significant irreversible environmental changes are summarized as follows:

- Development of vacant land that would be physically altered to create a residential development, which can be considered an irreversible environmental change and a permanent investment in new infrastructure, as well as a long-term increase in demand for energy, water and other natural resources;

- Vegetation would be removed from the site and existing topographic features would be modified, which would visually alter the site from an rural to an urban condition;
- Construction of the proposed project would require use of water, timber, steel, sand, gravel, and other minerals and natural resources. Although these uses are not considered an unusual demand for these resources during construction, they nonetheless represent an incremental increase in demand for nonrenewable resources;
- Nonrenewable resources such as oil and nonrenewable energy sources would be used during construction and subsequent operations of the project; and
- Vehicular traffic would increase, resulting in proportionate air emissions and noise levels.

Once the 50-to-100-year life span of the project is reached, it is probable that the site would continue to support urban uses because of the large investment of capital resources that would be expended on the project site and its surroundings, including the construction of site infrastructure. Consequently, development of the project would largely commit the project site to similar uses in the future.

Construction and implementation of the proposed project would commit energy, labor, and building materials. This commitment would be commensurate with that of other projects of similar nature and magnitude. Energy, labor, and building materials would also be committed to the construction of buildings and infrastructure necessary to support the new development. Ongoing maintenance of the project site would entail a long-term commitment of energy resources in the form of natural gas and electricity. This commitment of energy, labor, and building materials would be a long-term obligation because once the project site has been developed, it is highly unlikely that the land could be returned to its original condition.

CHAPTER 7.0

EFFECTS FOUND NOT TO BE SIGNIFICANT

In the course of this evaluation, certain impacts of the proposed project were found to be less than significant due to the inability of a project of this scope to create such impacts or the absence of project characteristics producing effects of this nature. The following section provides a brief description of effects found not to be significant or less than significant based on the analysis conducted through the Draft EIR preparation process. Several issues indicated as "No Impact" or "Less than Significant Impact" are nonetheless addressed in the Draft EIR as a matter of clarification or convenience for the reader.

7.1 AGRICULTURAL RESOURCES

a) *Implementation of the proposed project may convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.* **Level of Significance: No Impact.**

There are no agricultural uses currently on the proposed project site. The proposed project is not identified or designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, no impact would occur in this regard.

b) *Implementation of the proposed project may conflict with existing zoning for agricultural use or a Williamson Act contract.* **Level of Significance: No Impact.**

The proposed project site is currently designated as Rural Living (RL) in the County *General Plan*. There are currently no Williamson Act contracts for any parcels within the project site. Therefore, no impact would occur in this regard.

c) *Implementation of the proposed project may involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.* **Level of Significance: No Impact.**

The proposed project site is currently designated as Rural Living (RL) in the County *General Plan*. The proposed project does not involve any other changes in the existing environment that, due to their location or nature, could result in the conversion of Prime Farmland to non-agricultural use. Therefore, no impacts would occur in this regard.

7.2 BIOLOGICAL RESOURCES

a) *Implementation of the proposed project may conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.* **Level of Significance: No Impact.**

The project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Therefore, no impacts would occur in this regard.

7.3 GEOLOGY, SOILS, AND SEISMICITY

a) *Implementation of the proposed project may expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides.* **Level of Significance: No Impact.**

As stated in the Preliminary Geotechnical Investigation prepared by Geocon for the proposed project, landslide potential at the project site is considered very low due to the depth to groundwater and dense nature of the overlying alluvium and bedrock. Therefore, no significant impacts would occur in this regard.

7.4 HAZARDS AND HAZARDOUS MATERIALS

a) *Implementation of proposed project may 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 create a significant hazard to the public or environment.* **Level of Significance: No Impact.**

As stated in the Phase I Environmental Site Assessment prepared by Geocon for the proposed project, neither the project site nor adjacent properties are identified on regulatory lists of hazardous materials sites. Therefore, no impacts would occur in this regard.

7.5 LAND USE AND PLANNING

a) *Implementation of proposed project may conflict with applicable habitat conservation plans or natural community conservation plans.* **Level of Significance: No Impact.**

The project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. The project site is located within the boundaries of the Draft West Mojave Plan HCP, which has not been adopted and will not take effect until all jurisdictions pass ordinances adopting the plan. Therefore, no impacts would occur in this regard.

7.6 NOISE

a) *Implementation of the proposed project may expose people residing or working in the project area to excessive noise levels due to being located within an airport land use plan or within two (2) miles of a public airport or a public use airport.* **Level of Significance: No Impact.**

The project site is not located within an airport land use plan or within two (2) miles of a public airport. The nearest public airport to the project site is the Apple Valley Airport, located approximately 3.5 miles away. Therefore, no impacts would occur in this regard.

b) *Implementation of the proposed project may expose people residing or working in the project area to excessive noise levels due to being located within the vicinity of a private airstrip.* **Level of Significance: No Impact.**

The project site is located approximately 3/4 to one (1) mile from a small single private residential airstrip called Holiday Ranch. The airstrip is located north of the project site, north of Jackson Road and east of Oldenburg Road. The airstrip is not paved and is infrequently used. Permission must be granted by the owner of the airstrip prior to landing. Currently, this facility is not governed by an existing airport land use plan. Due to the infrequent use of the airstrip, no significant noise impacts are anticipated. Therefore, no significant impacts would occur in this regard.

7.7 POPULATION AND HOUSING

a) *Implementation of the proposed project may displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.* **Level of Significance: No Impact.**

The project site is currently vacant. Thus, no housing units would be demolished as a result of project implementation. Therefore, no impacts would occur in this regard.

b) *Implementation of the proposed project may displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.* **Level of Significance: No Impact.**

The proposed project site is currently vacant. Thus, the proposed project would not displace any existing housing or existing residents. Therefore, no impacts would occur in this regard.

7.8 TRAFFIC AND CIRCULATION

a) *Implementation of the proposed project may 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.* **Level of Significance: No Impact**.

The project site is not located within an airport land use plan or within two (2) miles of a public airport. The nearest public airport to the project site is the Apple Valley Airport, located approximately 3.5 miles away. Further, the project doesn't propose any development that would result in changes in air traffic patterns. Therefore, no impacts would occur in this regard.

CHAPTER 8.0

SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

Section 15126.2(b) of the State *CEQA Guidelines* requires an EIR to "describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Chapter 3, *Environmental Analysis*, of this Draft EIR describes the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts to a less-than-significant level, where feasible. After implementation of the recommended mitigation measures, most of the significant impacts associated with the proposed project would be reduced to a less-than-significant level. However, the following impacts would remain significant and unavoidable; that is, the identified mitigation measures would not, or might not be sufficient enough, to reduce the impacts to a less-than-significant level.

8.1 PROJECT IMPACTS

8.1.1 Aesthetics

Development of the proposed project site to urban uses would irreversibly change the scenic vista from rural living to urbanized uses. Implementation of the proposed project would alter views of the project site and the site's visual character by converting the site from undeveloped lands to residential, recreational, and commercial development. Development of the proposed project would eliminate the open desert character of the site, and would obscure some views of the surrounding areas from public viewing points, when compared to existing conditions. Because development of the proposed project site as a more intense urban use would permanently alter the existing desert open space aesthetic and scenic vista of the project site, impacts are considered to be significant and unavoidable.

Implementation of the proposed project would permanently alter the nature and appearance of the site from vacant land to residential development. On-site structures would be visible from surrounding areas. This alteration of appearance is permanent and would continue through the life of the project. Views of the valley floor that currently comprise the site are available to motorists and equestrian riders along Cahuilla Road and Laguna Seca Drive and the residents to the north, west, and south of the site. Views of these areas are currently unobstructed, so the change in visual character from open space to developed conditions with amenities would be a distinct visual alteration of the project site. Implementation of the proposed project would permanently change the existing visual landscape and character of the site. Therefore, even

with the implementation of mitigation measures, a significant and unavoidable impact would occur.

Future uses facilitated by implementation of the proposed project would introduce new sources of light and glare on the site and in the project vicinity and, in particular, to an area that currently produces little nighttime light. This would increase nighttime illumination and decrease night sky visibility. Sources of light may include interior and exterior lighting, street lights, security lighting, and light and glare from headlights of vehicles on the project site. Structures, equipment, and paved surfaces may cause glare impacts on adjacent land uses. Due to the size and density of the project when compared to surrounding land uses, it is anticipated that light and glare impacts would be significant and unavoidable.

8.1.2 Air Quality

Implementation of the proposed project would result in a significant and unavoidable impact for the following areas:

- Regional Construction-Related Emissions – As shown in Tables 3.2-10 through 3.2-13, activities related to construction of the project would exceed the MDAQMD daily emission threshold for after implementation of all feasible mitigation measures. Therefore, the construction of the project would have a significant and unavoidable impact on regional air quality.

- Long-term operational project emissions – For regional emissions, after the implementation of the recommended mitigation measures, emissions resulting from long-term operational activity would exceed the regional pollutant threshold for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$.

- Because the proposed project would exceed the maximum population density for the site and proposes a more intense land use, the project is considered not to be consistent with the applicable air quality management plans, and significant impacts may occur with regard to this threshold.

- Cumulative Emissions – Because the proposed project is not consistent with the applicable AQMP and project emissions are significant on an individual project basis, it is assumed that the project's incremental contribution to criteria pollutant emissions may be cumulatively considerable.

  The proposed project would not hinder the State from meeting its GHG reduction goal and GHG emissions are less than significant on an individual project basis,; however, it is assumed that the project's incremental contribution to GHG emissions may be cumulatively considerable.

8.1.3 Biological Resources

The cumulative impacts associated with the proposed project and surrounding areas where similar types of development are occurring or proposed would be considered significant due to a loss of biological habitat within the Victor Valley region (associated with development), and a potential threat to the threatened and endangered species that depend on these resources. In addition, the lack of an adopted comprehensive habitat mitigation plan (West Mojave Plan) further compounds the potential for habitat and species losses within the Victor Valley region. Once this Plan has been adopted by Federal, State, and local agencies, it is anticipated that cumulative impacts to biological resources within the Victor Valley would be better defined and mechanisms to reduce habitat loss would be in place, further reducing these impacts. In this regard, cumulative impacts associated with biological resources are considered significant and unavoidable with implementation of the proposed project.

8.1.4 Traffic and Circulation

The proposed project would increase traffic and decrease the existing level of service of both local and regional intersections. As identified in Chapter 3.12, many of these improvements have been previously identified in the South/East Apple Valley Local Area Transportation Facilities Plan. Therefore, payment of fair share fees associated with improvements identified in the plan are considered adequate mitigation and therefore, impacts to intersections identified in the plan would be considered less than significant with mitigation. However, many intersections identified below for payment of fair share fees are not located in any currently identified program, and therefore, payment of fair share fees are not considered fully enforceable as no nexus exists between payment of fees and the implementation of necessary improvements. As such, impacts to intersections not identified within any plan are considered significant and unavoidable. As identified in Mitigation Measure TRA-2, the Project Applicant would be required to pay fair share fees for improvements at this intersection. However, even with the implementation of Mitigation Measure TRA-2, impacts would remain significant and unavoidable.

Finally, the necessary improvements to these roads must undergo extensive design and environmental review prior to construction. For these reasons, adequate mitigation is not currently available. Until the improvements are made, the impacts to the Regional and Local roadways would be significant and unavoidable.

CHAPTER 9.0

ORGANIZATIONS AND PERSONS CONSULTED

9.1 LEAD AGENCY

9.1.1 County of San Bernardino Land Use Services Department

Ms. Carrie Hyke, AICP, Principal Planner

Mr. Doug Feremenga, Ph.D, AICP, LEED AP, Senior Planner

Ms. Tracy Creason, Principal Planner

9.2 PROJECT APPLICANT

9.2.1 Strata Equity Group, Inc.

Eric Flodine, Vice President of Community Planning

9.3 CONSULTANTS

9.3.1 RBF Consulting

Mr. Kevin Thomas, CEP, Project Manager

Mr. John Gifford, Project Manager

Ms. Kari Cano, Assistant Project Manager

Ms. Pamela Arifian, LEED AP, Environmental Planner

Mr. Ryan Fowler, Environmental Planner

Mr. Alex Pohlman, Environmental Planner

Ms. Carolyn LaPrade, Environmental Planner

Mr. Eddie Torres, INCE, Air Quality/ Noise Specialist

Mr. Richard Beck, REA, CEM, CEI, Hazardous Materials Specialist

Mr. Paul Martin, PE, TE, PTOE, Traffic Engineer

Ms. Rebecca Kinney, PE, Hydrology and Drainage

Mr. Mike Boeck, PE, Water Resources

9.3.2 Urban Crossroads (Traffic Impact Analysis, Air Quality Analysis, Noise Analysis)

Mr. Carleton Waters, PE, Traffic Engineer

Mr. Haseeb Qureshi, Air Quality Specialist

Bill Lawson, INCE, Noise Specialist

9.3.3 Geocon Consultants (Geotechnical Analysis and Phase I Environmental Site Assessment)

Mr. John Hoobs, CEG, Principal

9.3.4 Allard Engineering (Drainage Report)

Mr. Ray Allard, PE, Civil Engineer

9.3.5 Tom Dodson Associates (Biological Report)

Mr. Tom Dodson, Principal

9.3.6 LSA Associates (Cultural Resources Assessment)

Mr. Curt Duke, M.A., RPA, Archaeologist

9.3.7 Terra Nova Planning and Research, Inc. (Water Supply Assessment)

Mr. John Criste, AICP, Principal

9.3.8 FORMA (Specific Plan, Land Plan)

Mr. Gene Hsieh

CHAPTER 10.0

BIBLIOGRAPHY

Allard Engineering, *Hacienda at Fairview Valley Drainage Report*, (Revised) June 2009.

Apple Valley Ranchos Water Company, *Urban Water Management Plan*, November 2005.

Bonterra Consulting, *Peer Review of the Focused Biological Survey*, October 6, 2008.

California Air Resources Board, *Aerometric Data Analysis and Measurement (ADAM) System,* http://www.arb.ca.gov/adam/welcome.html, accessed October 2009.

California Air Resources Board, *California Emissions Facility Search Engine (CEFS),* http://www.arb.ca.gov/ei/maps/statemap/dismap.htm, accessed November 3, 2009.

California Air Resources Board, *Technical Support Document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles*, 2004.

California Department of Finance, *E-1 Population Estimates for Cities, Counties, and the State with Annual Percent Change – January 1, 2007 and 2008,* May 2008.

California Energy Commission, *Application for Certification for the Ivanpah Solar Generating System Project*, 2008. (http://www.energy.ca.gov/sitingcases/ivanpah/ documents/applicant/AFC/Volume1/ISEGS_005.5_Air.pdf. Accessed, April 15, 2009).

California Integrated Waste Management Board, *Assessments for Solid Waste Impacts*, September 1992.

California State Parks - Office of Historic Preservation, http://ohp.parks.ca.gov/default.asp?page_id=21238, accessed January 2007.

Central Valley Regional Water Quality Control Board, Water Quality Control Plan For the Sacramento River and San Joaquin River Basins, http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/SacSJR.pdf, accessed on September 24, 2007.

City of Blythe, *General Plan 2025*, January 2007.

Climate Registry, *General Reporting Protocol for the Voluntary Reporting Program,* October 29, 2007.

Country Studies, *Victorville Weather*, http://countrystudies.us/unitedstates/weather/California/victorville.htm, accessed June 2008.

County of San Bernardino, *County of San Bernardino Development Code*, amended January 2009.

County of San Bernardino, *County of San Bernardino General Plan EIR*, February 2007.

County of San Bernardino, *County of San Bernardino General Plan*, March 2007.

County of San Bernardino, *Development Code*, 2007.

County of San Bernardino, *The San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan*, April 2005.

Environmental Protection Agency, *Climate Action Team*, 2006.

Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, Volume 1, Chapter 1, External Combustion Sources—Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion*, 1998.

Environmental Protection Agency, *Solid Waste Management and Greenhouse Gases*, September 2006.

Federal Emergency Management Agency, *The Disaster Mitigation Act of 2000 (DMA 2000), (P.L. 106-390).*

Federal Transit Administration, *Transit Noise and Impact Assessment Manual*, May 2006.

Forma, *Hacienda at Fairview Valley Specific Plan*, (Revised) July 2009.

Geocon Inc., *Preliminary Geotechnical Investigation: Granite Valley Residential Development, Fairview Valley Area, California*, June 8, 2007.

Geocon Inc., *Report of Geotechnical Evaluation for Environmental Impact Report*, January 22, 2009.

Geocon, Inc., *Preliminary Geotechnical Investigation: Fairview Creek Cahuilla Road & Laguna Seca Road, Apple Valley Area, California*, November 6, 2003.

Geocon, *Phase I Initial Site Assessment, Fairview Creek, L.P.*, July 2007 and revised December 2008.

Geocon, *Phase I Initial Site Assessment, Granite Valley, L.P.*, July 2007 and revised December 2008.

Geocon, *Response to RBF Comments, Phase I Environmental Site Assessments, Granite Valley, L.P.,* and *Fairview Creek, L.P.,* December 2008.

Local Agency Formation Commission (LAFCO) County of San Bernardino, *Municipal Services Review/ Sphere of Influence Update for the Town of Apple Valley,* September 8, 2008.

LSA Associates, Inc., *Cultural Resource Assessment – Offsite Improvements*, December 2008.

LSA Associates, Inc., *Cultural Resource Assessment*, December 2008.

LSA Associates, Inc., *Paleontological Resource Assessment*, June 2009.

Magorien, D. Scott, *Technical Memorandum: Geotechnical Peer Review in support of an EIR for the proposed Hacienda at Fairview Valley project*, November 2008.

Mojave Desert Air Quality Management District, *2004 Ozone Attainment Plan*, 2004.

Mojave Desert Air Quality Management District, *California Environmental Quality Act and Federal Conformity Guidelines*, February 2009.

Mojave Desert Air Quality Management District, *Final Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan, July* 1995.

Mojave Desert Air Quality Management District, *MDAQMD California Environmental Quality Act and Federal Conformity Guidelines,* June 2007.

Mojave Water Agency, *Urban Water Management Plan*, December 2005.

National Park Service – National Register of Historic Places, http://www.nps.gov/nr/about.htm, accessed January 2007.

Pamela Creedon, Executive Officer of the Central Valley Regional Water Quality Control Board, http://www.waterboards.ca.gov/rwqcb5/state_of_cvrwqcb_aug_2007.pdf, accessed September 24, 2007.

PCR Services Corporation, *Hacienda at Fairview Valley Joshua Tree Management Program,* March 2009.

PCR Services Corporation, *Hacienda at Fairview Valley Joshua Tree Survey Report*, March 2009.

QEI, Inc., *Electricity Efficiency Through Water Efficiency, Report for the Southern California Edison Company*, 1992.

RBF Consulting, *Phase I Environmental Site Assessment Report Review, Fairview Creek, L.P.*, September 2008.

RBF Consulting, *Phase I Environmental Site Assessment Report Review, Granite Valley, L.P.*, September 2008.

RBF Consulting, *Regulatory Services Jurisdictional Delineation Report Peer Review*, October 8, 2008.

San Bernardino Associated Governments, *Measure I Central*, http://www.sanbag.ca.gov/funding/mi.html, accessed November 3, 2009.

South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

Southern California Association of Governments (SCAG), *RTP Growth Forecast by City*, adopted March 2008.

State of California, Employment Development Department Labor Market Information Division, *Labor Force Data For Sub-County Areas*, 2007.

State of California, *Environmental Protection Agency, Climate Action Team*, 2006.

State Water Resources Control Board website, www.waterboards.ca.gov/nps/docs/guidance/urbanmms.pdf, accessed September 24, 2007.

Terra Nova Planning and Research, *Water Supply Assessment*, September 2008.

Terra Nova Planning and Research, *Water Resources Study*, June 2009.

Tom Dodson & Associates, *Focused Biological Survey and Jurisdictional Delineation for Offsite Improvements Associated with the Hacienda at Fairview Valley Project (Revised)*, February 2009.

Tom Dodson & Associates, *Focused Biological Survey and Jurisdictional Delineation (Revised)*, January 2009.

Town of Apple Valley website, *Market Profile*, http://www.applevalley.org/pgs/market_profile.asp, accessed November 3, 2009.

Town of Apple Valley, *Town of Apple Valley General Plan Housing Element (General Plan),* June 2000.

United States Census Bureau, *1990 Census, 2000 Census, and American Community Survey 2007*, www.census.gov.

United States Environmental Protection Agency, *Air Data,* http://www.epa.gov/oar/data/geosel.html, accessed November 3, 2009.

United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2004,* April 2006.

United States Environmental Protection Agency, *High GWP Gases: Sources and Emissions*, October 19, 2006.

United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2004*, April 2006.

United States Environmental Protection Agency, *Methane: Sources and Emissions*, October 19, 2006.

United States Environmental Protection Agency, *Nitrous Oxide: Sources and Emissions*, October 19, 2006.

United States Geological Survey, *The Water Cycle: Evaporation*, August 28, 2006.

Urban Crossroads, *Hacienda at Fairview Valley Air Quality Impact Analysis*, December 10, 2008.

Urban Crossroads, *Hacienda at Fairview Valley Noise Analysis (Revised)*, December 2008.

Urban Crossroads, *Hacienda at Fairview Valley Traffic Impact Analysis (Revised)*, May 2009.

Urban Crossroads, *Transportation Impact Analysis for the Hacienda at Fairview Valley Specific Plan in the Sphere of Influence of the Town of Apple Valley*, August 2008.

This page was intentionally left blank