KUNZMAN ASSOCIATES, INC.

ISLAMIC COMMUNITY CENTER OF REDLANDS

TRAFFIC IMPACT ANALYSIS

June 30, 2016

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

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TRAFFIC IMPACT ANALYSIS

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I. INTRODUCTION

The purpose of this report is to provide an assessment of the traffic impacts resulting from the development of the proposed Islamic Community Center of Redlands project and to identify the traffic mitigation measures necessary to maintain the established level of service standard for the elements of the impacted roadway system. The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act.

The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with California Environmental Quality Act authorizing legislation. This report analyzes traffic impacts for the anticipated opening date with full occupancy of the development in Opening Year 2018, at which time it will be generating trips at its full potential, and for the current traffic forecast year, which is the Year 2040.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

A. Project Description

The proposed development is located north of Beaumont Avenue and west of Nevada Street in the Redlands area of the County of San Bernardino. A vicinity map showing the project location is provided on Figure 1.

The approximately 5.5 acre project site is proposed to be developed with an Islamic community center. The project site is currently vacant and not generating vehicle trips. Figure 2 illustrates the project site plan.

B. Study Area

Regional access to the project site is provided by the I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways which will be most affected by the project are Barton Road, San Timoteo Canyon Road, and Beaumont Avenue. The north-south roadways which will be most affected by the project are San Timoteo Canyon Road and Nevada Street.

A series of scoping discussions were conducted with the County of San Bernardino to define the desired analysis locations for each future analysis year. In addition, the San Bernardino Associated Governments staff has also been contacted to discuss the project.

C. Analysis Methodology

The analysis of the traffic impacts from the proposed development and the assessment of the required mitigation measures were based on an evaluation of the existing and forecast traffic conditions in the vicinity of the site with and without the project. The following analysis years are considered in this report:

- Existing Conditions (2016)
- Existing Plus Project Conditions[1]
- Project Opening Year Conditions (2018)
- Horizon Year Conditions (2040)

Existing intersection traffic conditions were established through Friday mid-day and Friday evening peak period traffic counts obtained by Kunzman Associates, Inc. in June 2016 (see Appendix B). In addition, truck classification counts were conducted at the study area intersections. The existing percent of trucks was used in the conversion of trucks to Passenger Car Equivalent's (see Appendix C).

Project traffic volumes for all future projections were estimated using the manual approach.

The distribution of the project trips were based on existing travel patterns calculated using existing traffic counts. This methodology was approved by the County of San Bernardino Transportation staff.

The average daily traffic volume forecasts have been determined using the growth increment approach on the San Bernardino Transportation Analysis Model (SBTAM) Year 2012 and Year 2040 average daily traffic volume forecasts (see Appendix C). This difference defines the growth in traffic over the 28 year period. The incremental growth in average daily traffic volume has been factored to reflect the forecast growth between Year 2016 and Year 2040. For this purpose, linear growth between the Year 2012 base condition and the forecast Year 2040 condition was assumed. Since the increment between Year 2016 and Year 2040 is 24 years of the 28 year time frame, a factor of 0.86 (i.e., 24/28) was used.

The Year 2040 without project daily and peak hour directional roadway segment volume forecasts have been determined using the growth increment approach on the San Bernardino Transportation Analysis Model Year 2012 and Year 2040 peak hour volumes. The growth increment calculation worksheets are shown in Appendix C. Current peak hour intersection approach/departure data is a necessary input to this approach. The existing traffic count data serves as both the starting point for the refinement process, and also provides important insight into current travel patterns and the relationship between peak hour and daily traffic conditions. The initial turning movement proportions are estimated based upon the relationship of each approach leg's forecast traffic volume to the other legs forecast volumes at the intersection. The initial estimate of turning movement proportions is then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program Report 255. A linear programming algorithm is used to calculate individual turning movements that match the known directional roadway segment volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

[1] The existing plus project conditions has been analyzed to comply with the Sunnyvale West Neighborhood Association v. City of Sunnyvale CEQA court case. This scenario assumes the full development of the proposed project and full absorption of the proposed project trips on the circulation system at the present time.

The Opening Year (2018) traffic volumes have been interpolated from the Year 2040 traffic volumes based upon a portion of the future growth increment.

Year 2040 San Bernardino Transportation Analysis Model volumes to create the new future base volumes. Project traffic is then added to the new future base volumes. Quality control checks and forecast adjustments were performed as necessary to ensure that all future traffic volume forecasts reflect a minimum of 10% growth over existing traffic volumes. The result of this traffic forecasting procedure is a series of traffic volumes suitable for traffic operations analysis.

The technique used to assess the capacity needs of an intersection is known as the Intersection Delay Method (see Appendix D) based on the Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection. The signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the Level of Service defined by the delay value is below the defined Level of Service standard. The volume to capacity ratio is defined as the critical volumes divided by the intersection capacity. A volume to capacity ratio greater than 1.0 implies an infinite queue.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis. The following formula has been used to calculate the pedestrian minimum times for all Highway Capacity Manual runs:

(Curb to curb distance) / (4 feet/second) + 7 seconds

For existing/existing plus project/Opening Year (2018) traffic conditions, saturation flow rates of 1,800 vehicles per hour of green for through and right turn lanes and 1,700 vehicles per lane for single left turn lanes, 1,600 vehicles per lane for dual left turn lanes and 1,500 vehicles per lane for triple left turn lanes have been assumed for the capacity analysis.

For Year 2040 traffic conditions, saturation flow rates of 1,900 vehicles per hour of green for through and right turn lanes and 1,800 vehicles per lane for single left turn lanes, 1,700 vehicles per lane for dual left turn lanes and 1,800 vehicles per lane for double right turn lanes have been assumed for the capacity analysis.

The peak hour traffic volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed. Where feasible improvements in accordance with the local jurisdiction's General Plan and which result in acceptable operations cannot be identified, the Year 2040 peak hour factor has been adjusted upwards to 0.95. This is to account for the effects of congestion on peak spreading. Peak spreading refers to the tendency of traffic to spread more evenly across time as congestion increases.

The traffic mitigation needs anticipated at the time of the project opening with full occupancy and for the Year 2040 were combined into a summary of mitigation requirements and costs. The mitigation cost responsibility for the proposed development was estimated based on the percent of the increase in traffic from the existing condition to the Year 2040 that was attributed to the project generated trips.

D. Definition of Deficiency and Significant Impact

The following definitions of deficiencies and significant impacts have been developed in accordance with the County of San Bernardino requirements.

1. Definition of Deficiency

The definition of an intersection deficiency has been obtained from the County of San Bernardino General Plan. The General Plan states that peak hour intersection operations of Level of Service D or better are generally acceptable. Therefore, any intersection operating at Level of Service E or F will be considered deficient.

For freeway facilities, the Congestion Management Program controls the definition of deficiency for purposes of this study. The Congestion Management Program definition of deficiency is based on maintaining a Level of Service standard of Level of Service E or better, except where an existing Level of Service F condition is identified in the Congestion Management Program document (San Bernardino County Congestion Management Program Table 2-1). A Congestion Management Program deficiency is, therefore, defined as any freeway segment operating or projected to operate at Level of Service F, unless the segment is identified explicitly in the Congestion Management Program document.

The identification of a Congestion Management Program deficiency requires further analysis in satisfaction of Congestion Management Program requirements, including:

- Evaluation of the mitigation measures required to restore traffic operations to an acceptable level with respect to Congestion Management Program Level of Service standards.

- Calculation of the project share of new traffic on the impacted Congestion Management Program facility during peak hours of traffic.

- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable Level of Service as described above.

This study incorporates each of these aspects for all locations where a Congestion Management Program deficiency is identified.

2. Definition of Significant Impact

The identification of significant impacts is a requirement of the California Environmental Quality Act. The County of San Bernardino General Plan and

Circulation Element have been adopted in accordance with California Environmental Quality Act requirements, and any roadway improvements within the County of San Bernardino that are consistent with these documents are not considered a significant impact, so long as the project contributes its “fair share” funding for improvements.

A traffic impact is considered significant if the project both: i) contributes measurable traffic to and ii) substantially and adversely changes the Level of Service at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the County of San Bernardino General Plan cannot be constructed.

Figure 1
Project Location Map

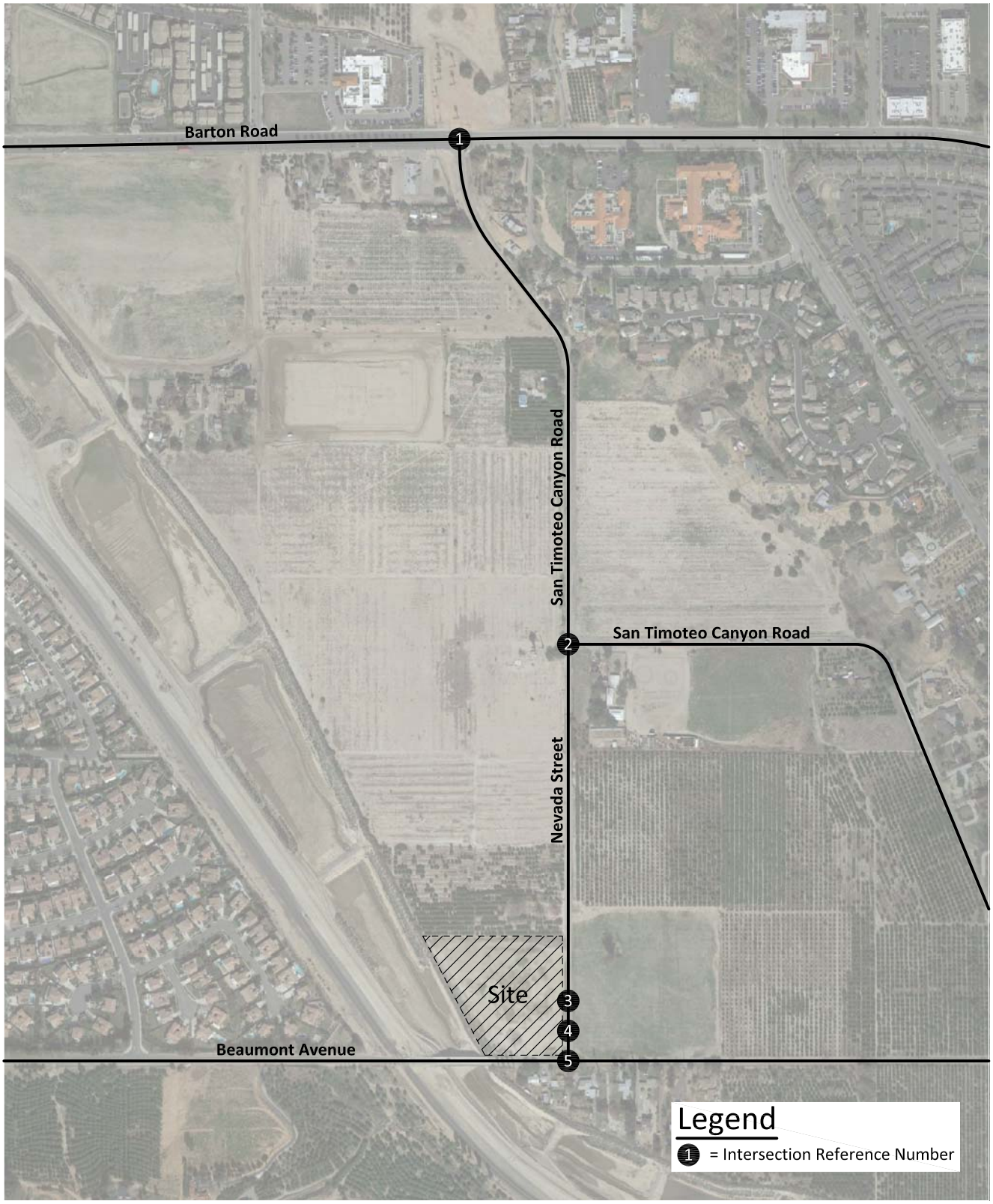

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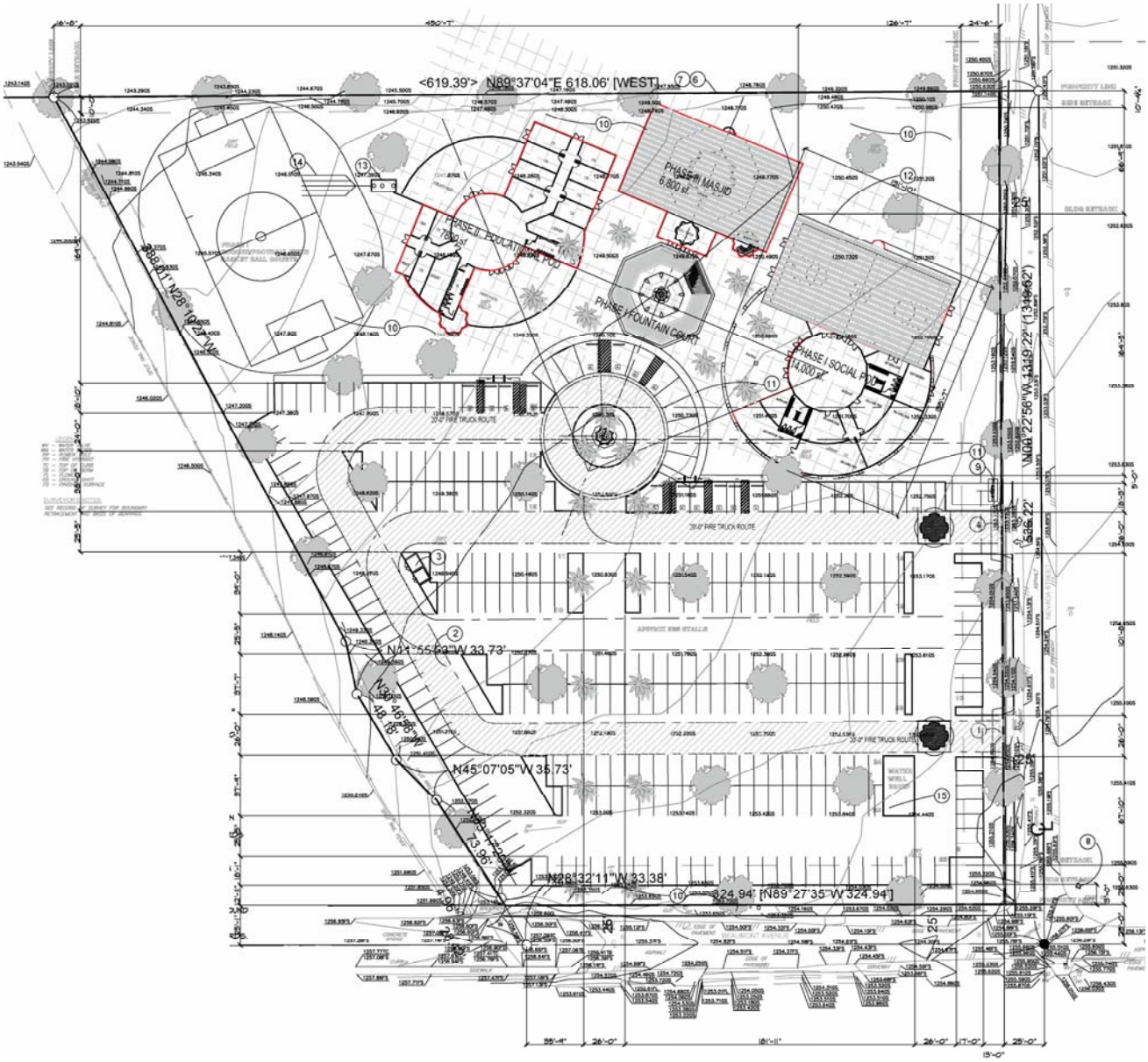
Figure 2
Site Plan



II. EXISTING CONDITIONS

A. Existing Roadway System

Figure 3 identifies the existing conditions for study area roadways. The number of through lanes for existing roadways and the existing intersection controls are identified.

Regional access to the project site is provided by I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways which will be most affected by the project are Barton Road, San Timoteo Canyon Road, and Beaumont Avenue. The north-south roadways which will be most affected by the project are San Timoteo Canyon Road and Nevada Street.

B. Existing Volumes

Existing intersection traffic conditions were established through Friday mid-day and Friday evening peak hour traffic counts obtained by Kunzman Associates, Inc. from June 2016 (see Appendix B) and shown on Figures 4 and 5, respectively. Explicit peak hour factors have been calculated using the data collected for this effort as well. The Friday mid-day and Friday evening peak hour traffic volumes were identified by counting the two-hour periods from 12:00 PM – 2:00 PM and 4:00 PM – 6:00 PM.

In addition, truck classification counts were conducted at the study area intersections. The existing percent of trucks were used in the conversion of trucks to Passenger Car Equivalent's (see Appendix B and C).

C. Existing Level of Service

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 1. For Existing traffic conditions, the study area intersections currently operate within acceptable Levels of Service during the peak hours. Existing delay worksheets are provided in Appendix D.

D. Planned Transportation Improvements and Relationship to General Plan

The County of San Bernardino General Plan Circulation Element is shown on Figure 6. Existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 6. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The County of San Bernardino General Plan roadway cross-sections are shown on Figure 7.

E. Existing Transit Routes

The study area is currently served by the Omnitrans Route 19 along Barton Road within the study area. The existing bus routes provided within the study area are shown on Figure 8.

F. Existing Pedestrian Facilities

Existing pedestrian facilities are shown on Figure 9.

Table 1

Existing Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at: Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	8.7-A	10.1-B
San Timoteo Canyon Road/Nevada Street (NS) at: San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	12.5-B	14.7-B
Nevada Street (NS) at: Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.2-B	10.7-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Figure 3
Existing Through Travel Lanes and Intersection Controls

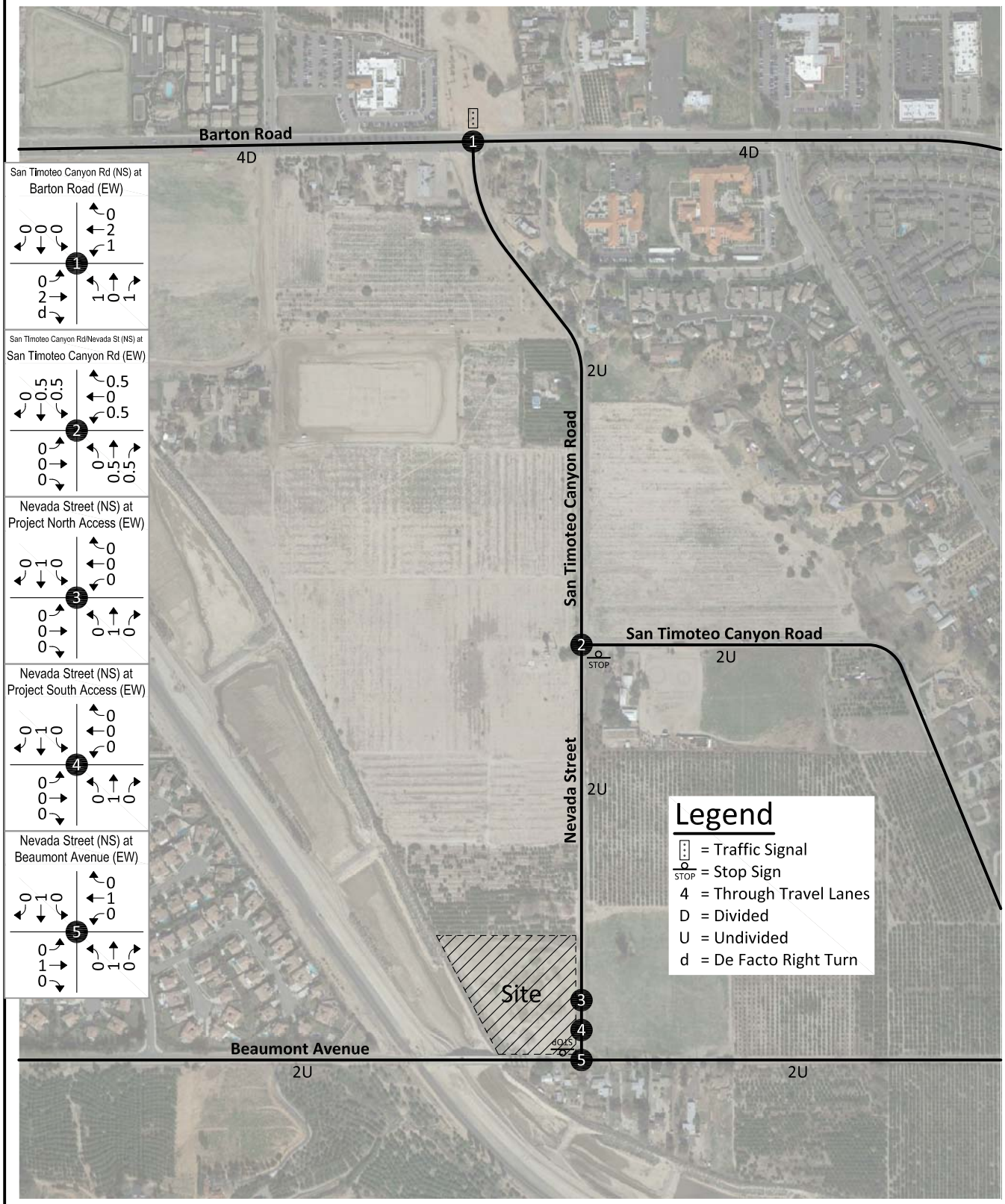


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Figure 4
Existing Friday Mid-Day Peak Hour Intersection Turning Movement Volumes

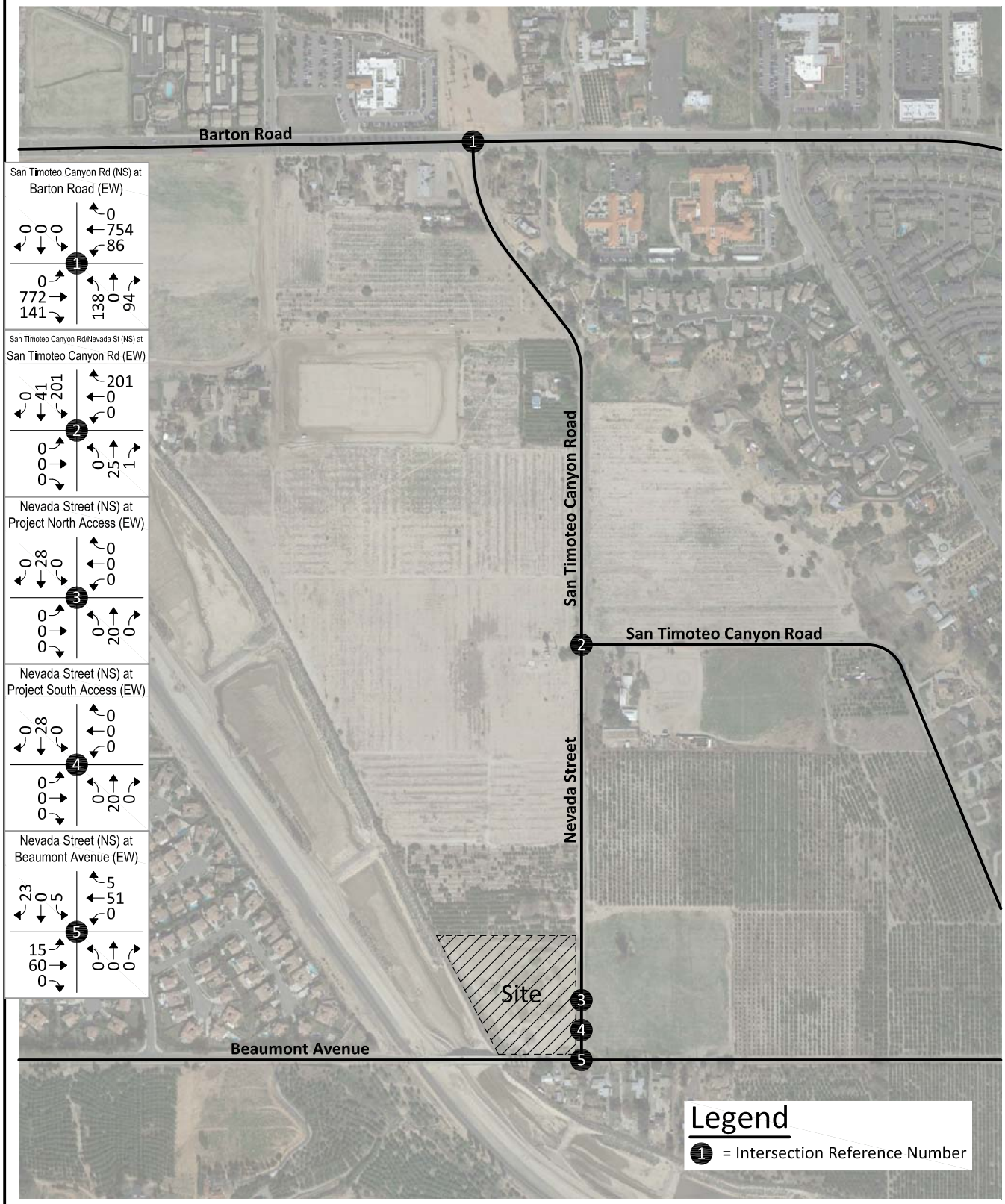

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Figure 5
Existing Friday Evening Peak Hour Intersection Turning Movement Volumes

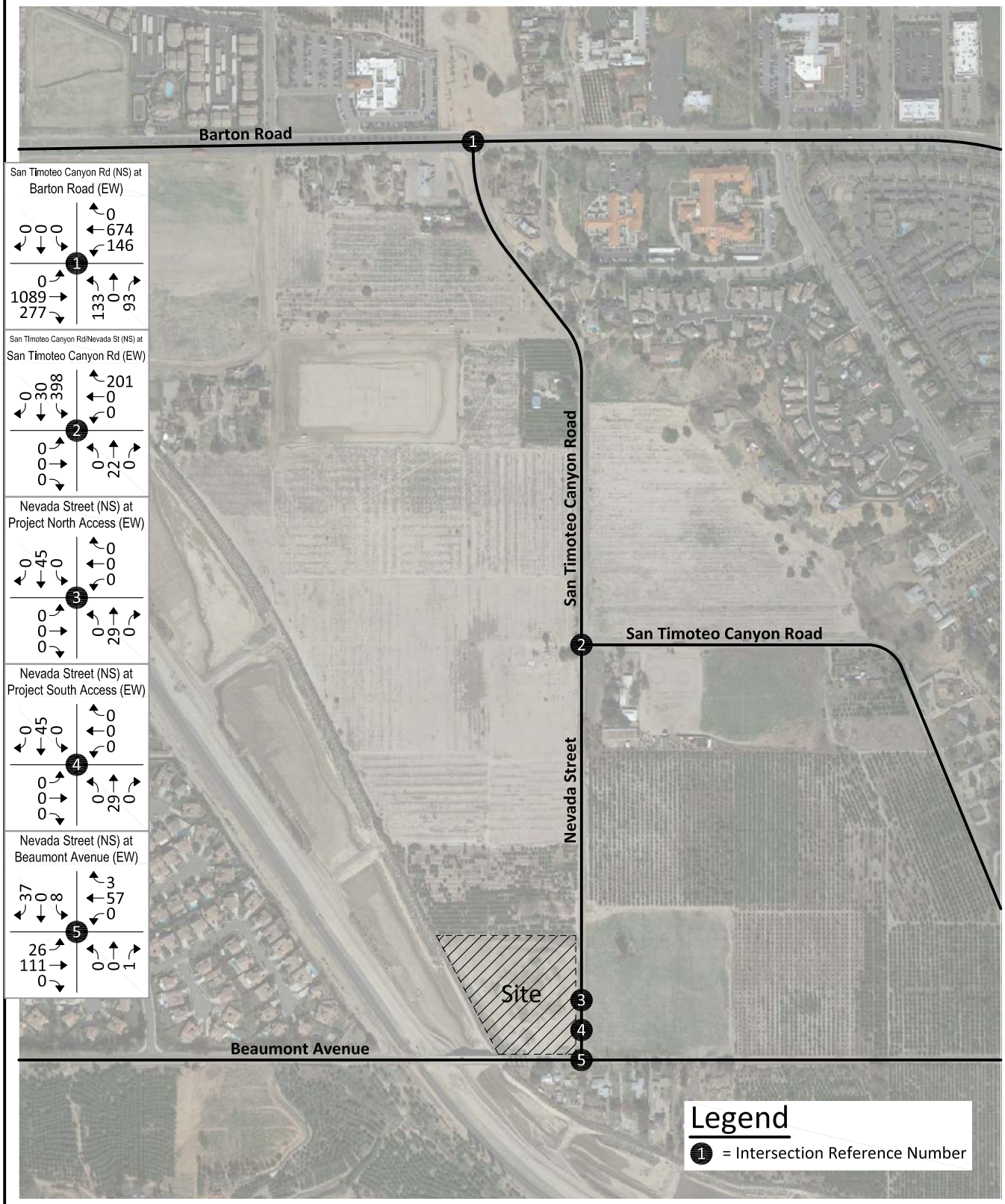

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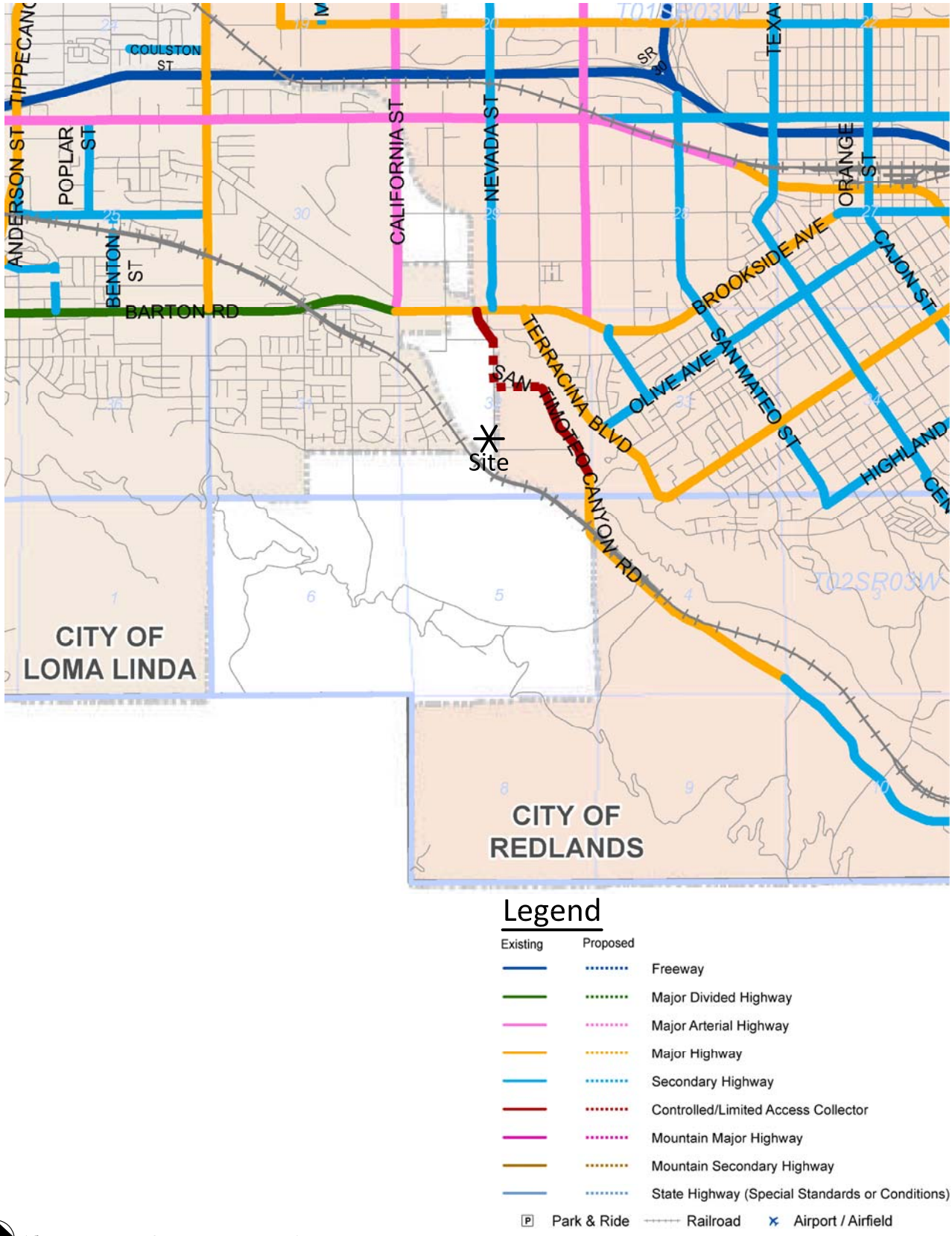
Figure 6
County of San Bernardino General Plan Circulation Element



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Source: County of San Bernardino

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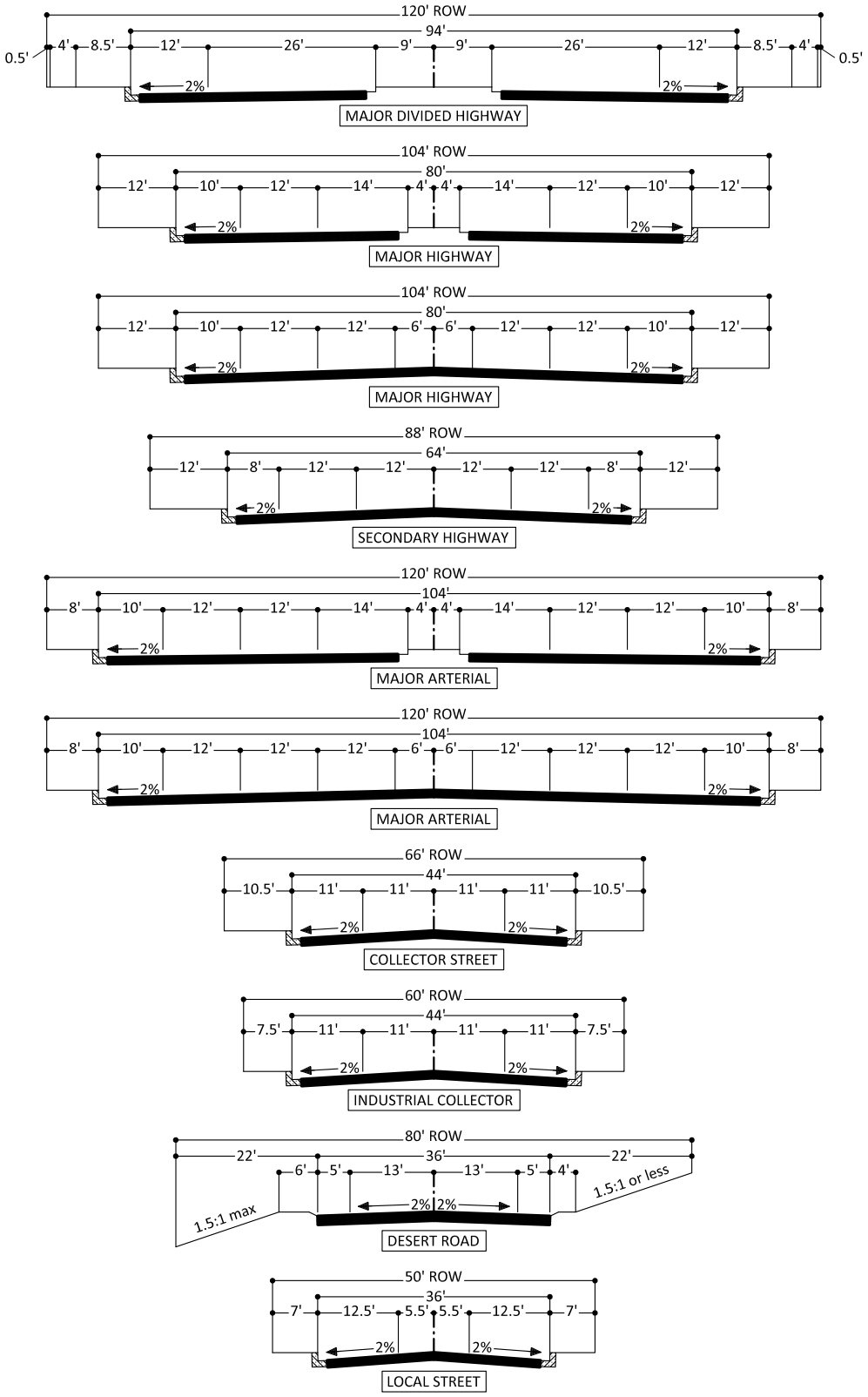
Figure 7
County of San Bernardino General Plan Roadway Cross-Sections



Source: County of San Bernardino

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Figure 8
Existing Transit Routes

Legend

- Palm/Kendall - CSUSB - VA Hospital
- 1 ARMC – San Bernardino Del Rosa
- 2 Cal St – E St – Loma Linda
- 3/4 Baseline – Highland – San Bdno
- 5 South Waterman – Del Rosa – Cal State
- 7 N San Bdno – Sierra Way – San Bdno
- 8 San Bdno – Mentone – Crafton Hills College
- 10 Fontana – Baseline – San Bernardino
- 11 San Bernardino – Muscoy – Cal State
- 14 Fontana – Foothill – San Bernardino
- 15 Fontana – San Bernardino/Highland – Redlands
- 19 Fontana – Colton – Redlands - Yucaipa
- 20 Fontana – Metrolink – Via Hemlock – Kaiser
- 22 North Rialto – Riverside Ave – ARMC
- 29 Bloomington – Valley Blvd – Kaiser
- 61 Fontana – Ontario Mills – Pomona
- 66 Fontana – Foothill Blvd – Montclair
- 67 Chaffey College – Baseline – Fontana
- 80 Ontario - Vineyard Ave. – Chaffey College
- 81 Chino - Haven – Chaffey College
- 82 Rancho Cucamonga – Fontana – Sierra Lakes
- 83 Chino – Euclid Ave. – Upland
- 84 Chino - Mountain Ave. - Upland
- 85 Chino - Montclair - Chaffey College
- 86 S. Ontario - Campus Ave. - San Antonio Hospital
- 88 Chino Hills - Ramona Ave. - Montclair
- 215 Riverside - San Bernardino
- 290 San Bernardino - ARMC - Ontario Mills - Montclair
- 308/309/310 OmniGo Yucaipa
- 325 OmniGo Grand Terrace
- 365 OmniGo Chino/Chino Hills

Source: Omnitrans

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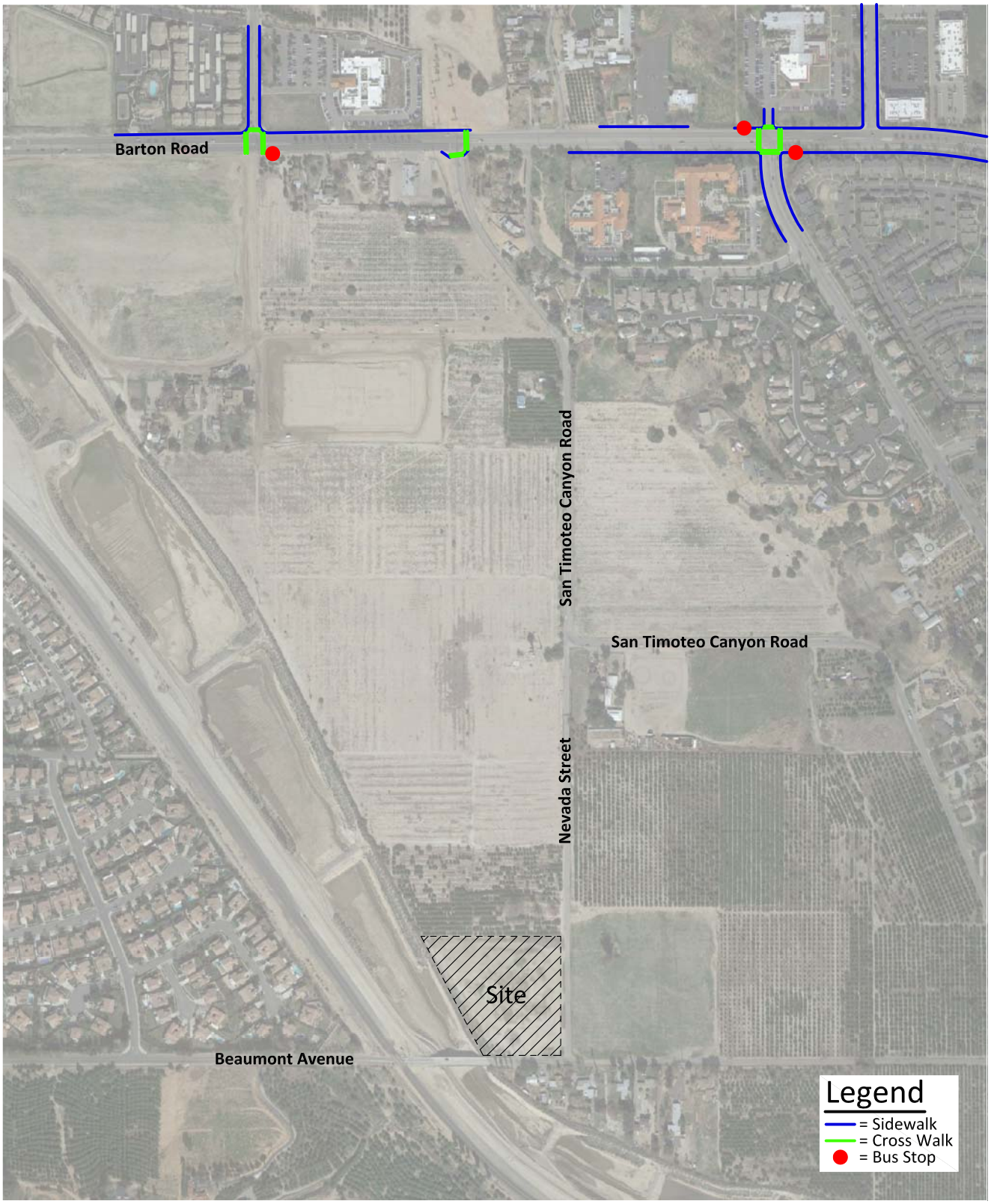
Figure 9
Existing Pedestrian Facilities



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III. PROJECT TRIPS

A. Project Description

The approximately 5.5 acre project site is proposed to be developed with an Islamic community center. The project is currently vacant and not generating vehicle trips. Access will be provided to Nevada Street.

B. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for Friday morning, Friday mid-day, and Friday evening peak hours inbound and outbound traffic for the proposed land use.

The Islamic Community Center of Redlands has provided a list of all special events and daily activities. This list provides the hours of operation, the number of employees, the number of attendees, the times of the events, and the duration of the events. A conservative vehicle occupancy of 1.00 persons per vehicle has been assumed to convert the number of employees to vehicles. A conservative vehicle occupancy of 1.50 persons per vehicle has been assumed to convert the number of attendees to vehicles. The daily trip generation for the site assumes 100 percent of the attendees utilize the site for each event. Based on discussions with the applicant, Friday mid-day peak hour contains the peak trip generation.

For daily operations, the maximum number of employees is 10. Daily operations assumed that all employees arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that all employees exit and enter the site. Daily worship occurs up to five times a day with a maximum number of attendees of 40. Daily worship occurs throughout the day. Daily worship attendees are assumed to arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that service attendees arrive and depart.

Ramadan prayer occurs in the evenings with a maximum number of attendees of 200. Ramadan prayer attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

Annual feast occurs in the evenings with a maximum number of attendees of 500. Annual feast attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

The trip generation for the project looks at the daily operations plus special event vehicle trips. Major special events only occur two days a year and are not included in the analysis.

As shown in Table 2, the proposed development is projected to generate approximately 88 vehicle trips during the Friday mid-day peak hour and 79 vehicle trips during the Friday evening peak hour.

C. Trip Distribution

Figure 10 contains the directional distribution of the project trips for the proposed land use.

D. Trip Assignment

Based on the identified trip generation and distribution, Friday mid-day and Friday evening peak hour intersection turning movement volumes expected from the project are shown on Figures 11 and 12, respectively.

E. Trip Contribution Test

No analysis is required further than 5 miles from the project site. The roadway elements that must be analyzed are dependent on the analysis year. The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments have been included in the analysis when the anticipated project volume equals or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways. Figure 13 graphically depicts the project trip contribution test volumes on all of the roadway segments adjacent to the potential intersection analysis locations until the project volume contribution has clearly dropped below the 50 trip threshold and 100 trip threshold.

The project does not contribute trips greater than the freeway threshold volume of 100 two-way peak hour trips.

Table 2

Project Trip Generation[1]

Description	Days Per Year	Friday Peak Hour									Daily
		Morning			Mid-Day			Evening			
		Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total	
Daily (Worship)[2]	365	27	1	28	27	27	54	1	27	28	134
Daily (Employees)[2]	365	10	1	11	10	10	20	1	10	11	40
Special Event (Ramadan)[3]	30	1	1	2	67	1	68	67	1	68	267
Major Special Event (Annual Feast)[4]	2	1	1	2	167	1	168	167	1	168	667
Daily Operations - Total	365	37	2	39	37	37	74	2	37	39	174
Special Events - Total[5]	30	11	2	13	77	11	88	68	11	79	307
Major Special Events - Total	2	11	2	13	177	11	188	168	11	179	707
Used in Traffic Analysis		11	2	13	77	11	88	68	11	79	307

1 The Islamic Community Center of Redlands has provided a list of all special events and daily activities. This list provides the hours of operation, the number of employees, the number of attendees, th times of the events, and the duration of the events. A conservative vehicle occupancy of 1.00 persons per vehicle has been assumed to convert the number of employees to vehicles. A conservative vehicle occupancy of 1.50 persons per vehicle has been assumed to convert the number of attendees to vehicles. The daily trip generation for the site assumes 100 percent of the attendees utilize the site for each event. Based on discussions with the applicant, Friday mid-day peak hour contains the peak trip generation.

2 For daily operations, the maximum number of employees is 10. Daily operations assumed that all employees arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that all employees exit and enter the site. Daily worship occurs up to five times a day with a maximum number of attendees of 40. Daily worship occurs throughout the day. Daily worship attendees are assumed to arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that service attendees arrive and

3 Ramadan prayer occurs in the evenings with a maximum number of attendees of 200. Ramadan prayer attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

4 Annual feast occurs in the evenings with a maximum number of attendees of 500. Annual feast attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

5 The trip generation for the project looks at the daily operations plus special event vehicle trips. Major special events only occur two days a year and are not included in the analysis.

Figure 10
Project Trip Distribution

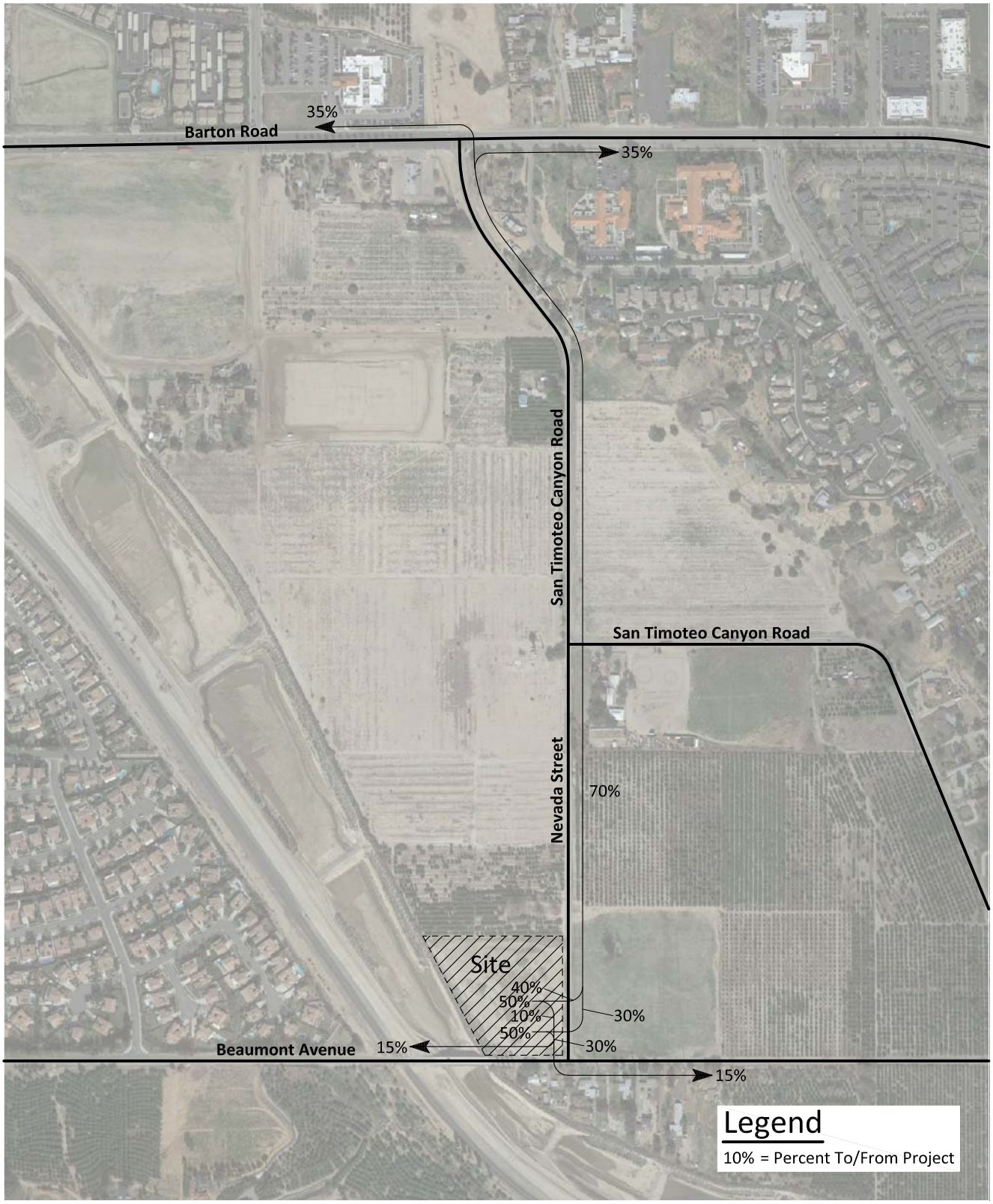

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Figure 11
Project Friday Mid-Day Peak Hour Intersection Turning Movement Volumes

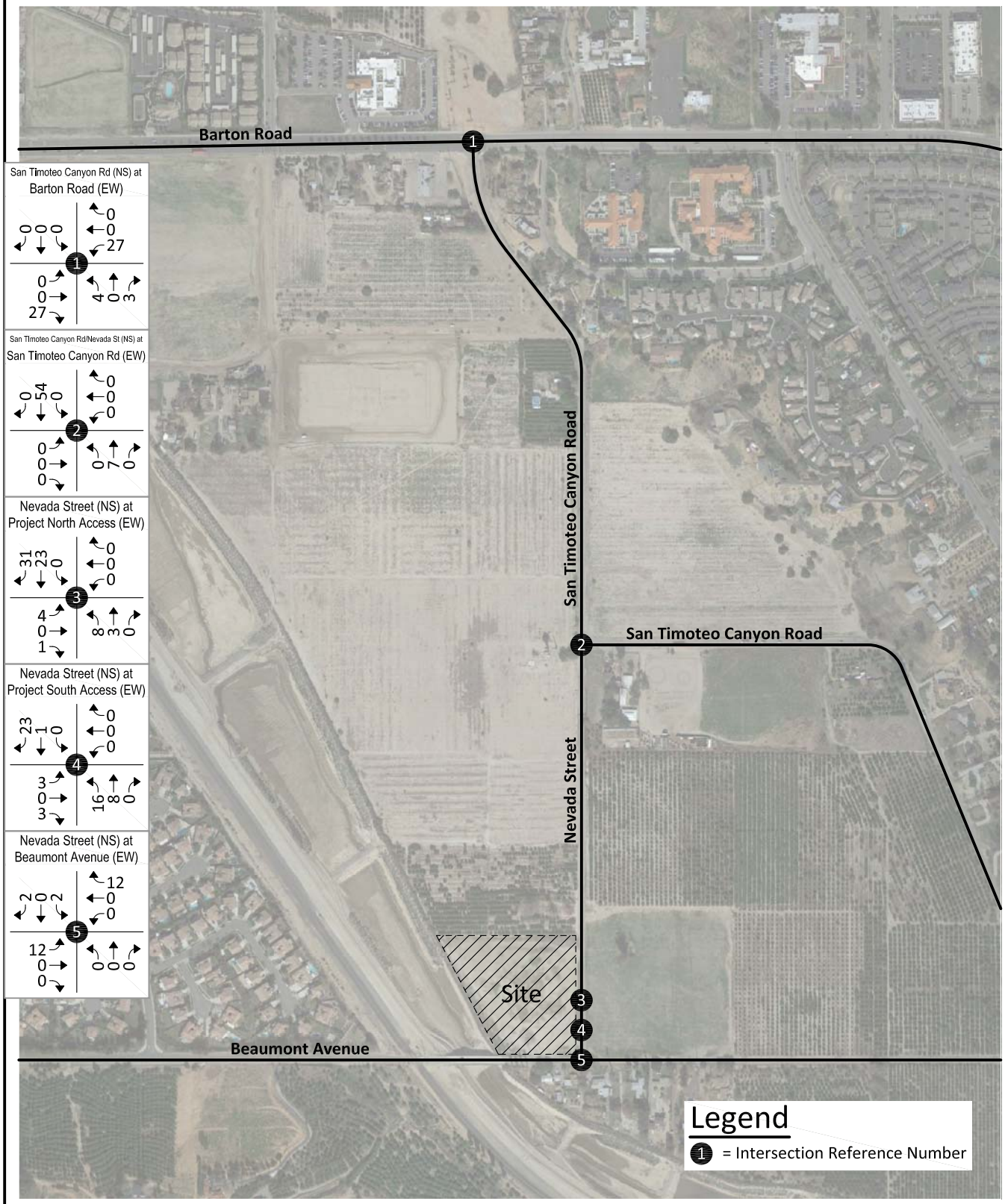

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Figure 12
Project Friday Evening Peak Hour Intersection Turning Movement Volumes

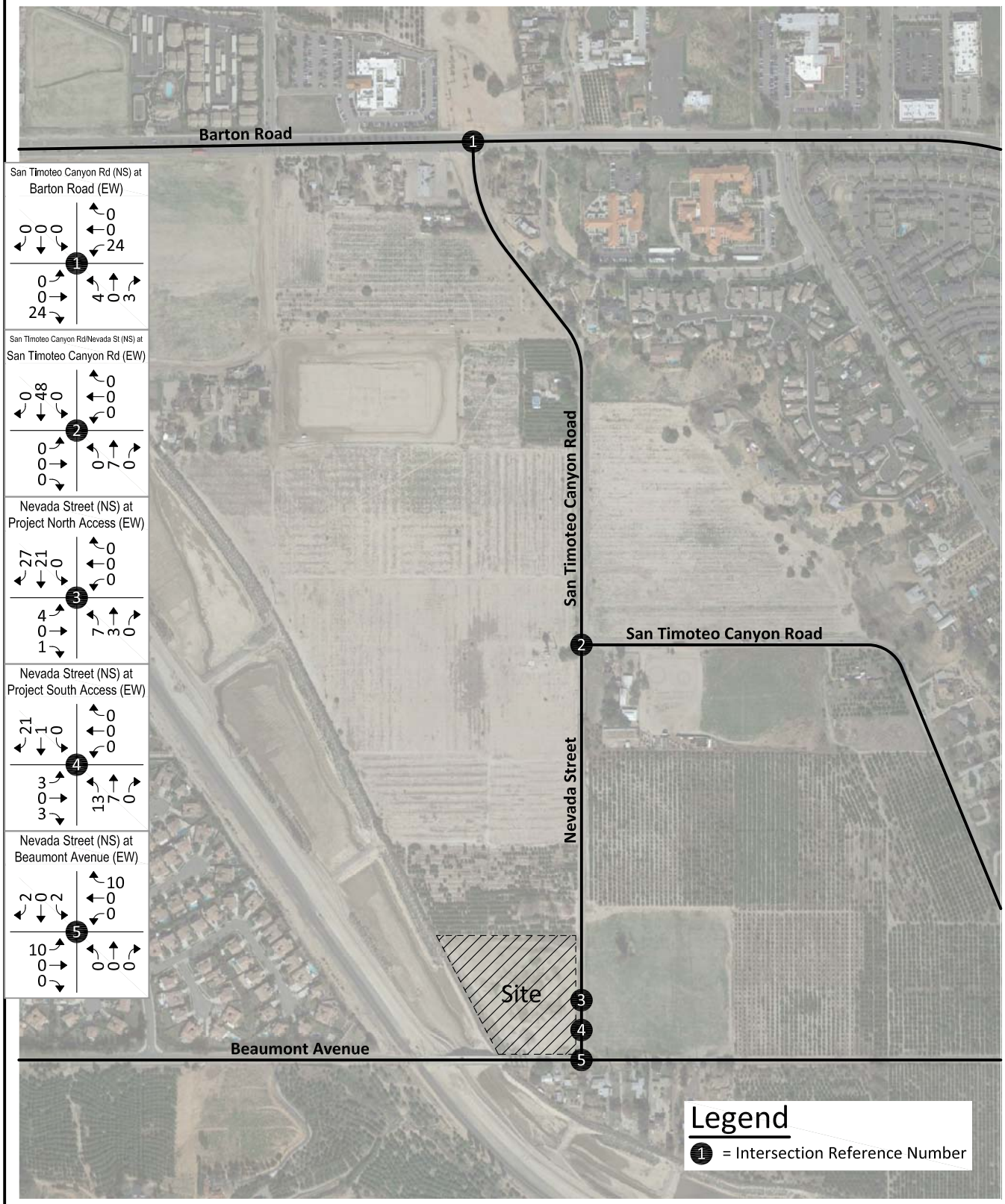

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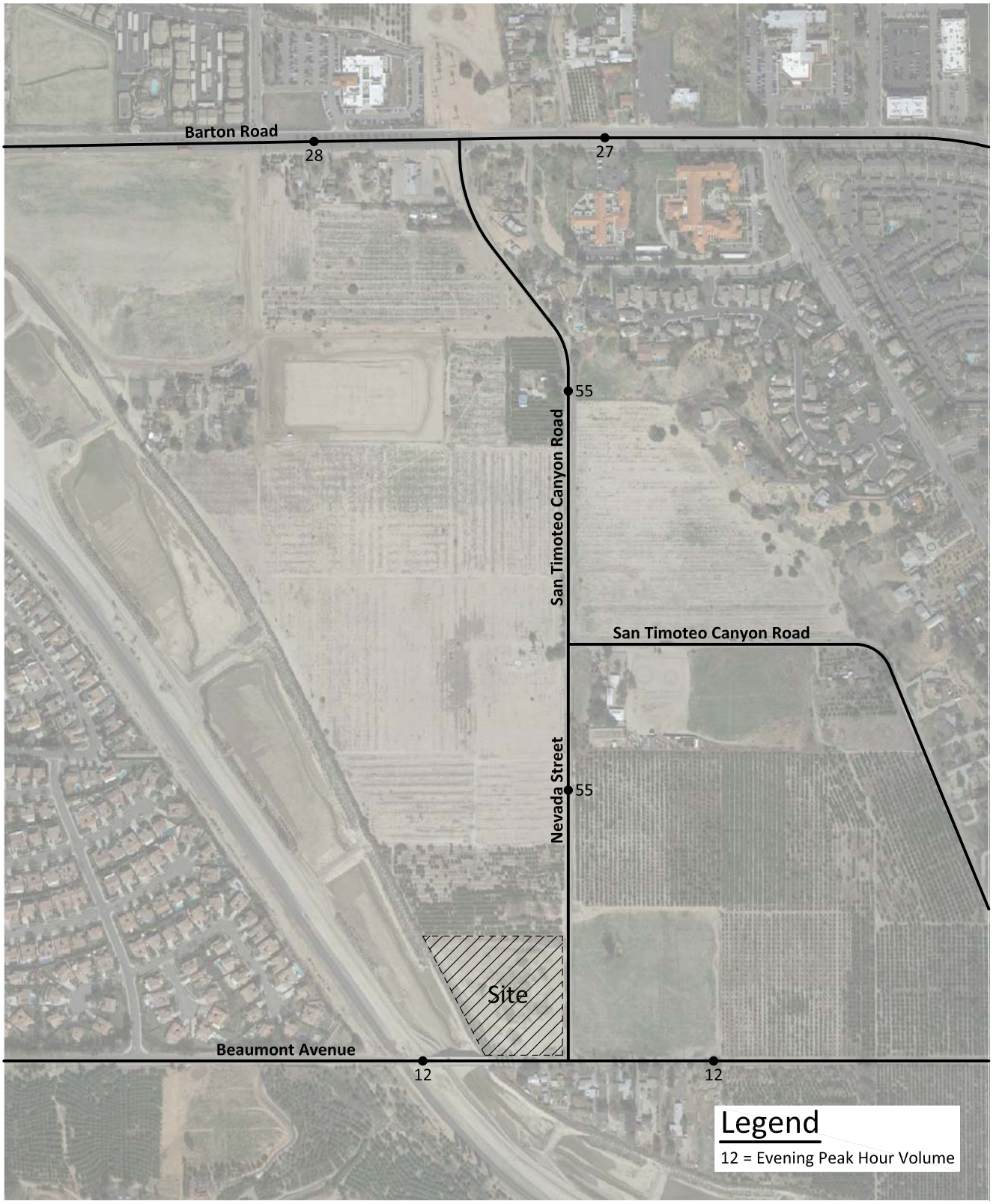
Figure 13
Project Trip Contribution Test Volumes



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IV. FUTURE CONDITIONS

A. Future Volumes

As described within Section I.C., the Year 2040 average daily traffic volume forecasts with the project are developed using a growth increment process based on volumes predicted by the San Bernardino Transportation Analysis Model Year 2012 and Year 2040 traffic models. The growth increment for Year 2040 on each roadway segment is the increase in San Bernardino Transportation Analysis Model volumes from existing Year 2016 to Year 2040. The final Year 2040 roadway segment volume used for analysis purposes is then determined by adding the Year 2040 growth increment volume to the existing counted volume.

The Opening Year (2018) traffic projections have been interpolated between Year 2040 traffic volumes and existing traffic volumes utilizing a portion of the growth increment (see Section I.C.). Project traffic volumes for all future projections were estimated using the manual approach.

B. Future Level of Service

1. Existing Plus Project

The Existing Plus Project delay and Level of Service for the study area roadway network are shown in Table 3. Table 3 shows delay values based on the geometrics at the study area intersections without and with improvements. Existing Plus Project delay calculation worksheets are provided in Appendix D. Existing Plus Project Friday mid-day and Friday evening peak hour intersection turning movement volumes are shown on Figures 14 and 15, respectively.

For Existing Plus Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

2. Opening Year (2018) Without Project

The Opening Year (2018) Without Project delay and Level of Service for the study area roadway network are shown in Table 4. Table 4 shows delay values based on the geometrics at the study area intersections without and with improvements. Opening Year (2018) Without Project delay calculation worksheets are provided in Appendix D. Opening Year (2018) Without Project Friday mid-day and Friday evening peak hour intersection turning movement volumes are shown on Figures 16 and 17, respectively.

For Opening Year (2018) Without Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

3. Opening Year (2018) With Project

The Opening Year (2018) With Project delay and Level of Service for the study area roadway network are shown in Table 5. Table 5 shows delay values based on the geometrics at the study area intersections without and with improvements. Opening Year (2018) With Project delay calculation worksheets are provided in Appendix D. Opening Year (2018) With Project Friday mid-day and Friday evening peak hour intersection turning movement volumes are shown on Figures 18 and 19, respectively.

For Opening Year (2018) With Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

4. Year 2040 Without Project

The Year 2040 Without Project delay and Level of Service for the study area roadway network are shown in Table 6. Table 6 shows delay values based on the geometrics at the study area intersections without and with improvements. Year 2040 Without Project delay calculation worksheets are provided in Appendix D. Year 2040 Without Project Friday mid-day and Friday evening peak hour intersection turning movement volumes are shown on Figures 20 and 21, respectively.

For Year 2040 Without Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

5. Year 2040 With Project

The Year 2040 With Project delay and Level of Service for the study area roadway network are shown in Table 7. Table 7 shows delay values based on the geometrics at the study area intersections without and with improvements. Year 2040 With Project delay calculation worksheets are provided in Appendix D. Year 2040 With Project Friday mid-day and Friday evening peak hour intersection turning movement volumes are shown on Figures 22 and 23, respectively.

For Year 2040 With Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

C. Intersection Delay and Level of Service Summary

A summary of Intersection delay and Levels of Service are provided in Table 8.

Table 3

Existing Plus Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at:																
Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	9.3-A	10.8-B
San Timoteo Canyon Road/Nevada Street (NS) at:																
San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	12.9-B	15.3-C
Nevada Street (NS) at:																
Project North Access (EW) - #3	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.2-A
Project South Access (EW) - #4	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.1-A
Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.5-B	11.0-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane; **BOLD** = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Table 4

Opening Year (2018) Without Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at: Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	8.8-A	10.2-B
San Timoteo Canyon Road/Nevada Street (NS) at: San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	12.8-B	14.9-B
Nevada Street (NS) at: Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.3-B	10.8-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Table 5

Opening Year (2018) With Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at:																
Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	9.5-A	10.9-B
San Timoteo Canyon Road/Nevada Street (NS) at:																
San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	13.2-B	15.5-C
Nevada Street (NS) at:																
Project North Access (EW) - #3	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.2-A
Project South Access (EW) - #4	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.1-A
Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.7-B	11.1-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane; **BOLD** = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Table 6

Year 2040 Without Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at: Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	10.7-B	13.4-B
San Timoteo Canyon Road/Nevada Street (NS) at: San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	14.3-B	17.2-C
Nevada Street (NS) at: Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	10.8-B	11.3-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Table 7

Year 2040 With Project Intersection Delay and Level of Service

Intersection	Jurisdiction	Traffic Control[3]	Intersection Approach Lanes[1]												Friday Peak Hour Delay-LOS[2]	
			Northbound			Southbound			Eastbound			Westbound				
			L	T	R	L	T	R	L	T	R	L	T	R	Mid-Day	Evening
San Timoteo Canyon Road (NS) at:																
Barton Road (EW) - #1	County of San Bernardino/City of Redlands	TS	1	0	1	0	0	0	0	2	d	1	2	0	11.5-B	14.4-B
San Timoteo Canyon Road/Nevada Street (NS) at:																
San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	CSS	0	0.5	0.5	0.5	0.5	0	0	0	0	0.5	0	0.5	14.8-B	18.0-C
Nevada Street (NS) at:																
Project North Access (EW) - #3	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.3-A
Project South Access (EW) - #4	County of San Bernardino/City of Redlands	**CSS**	0.5	0.5	0	0	0.5	0.5	**0.5**	0	**0.5**	0	0	0	9.1-A	9.2-A
Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	CSS	0	1	0	0	1	0	0	1	0	0	1	0	11.1-B	11.6-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Turn Lane; **BOLD** = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Vistro, Version 4.00-00. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop

Table 8

Intersection Delay and Level of Service Summary

Intersection	Jurisdiction	Friday Peak Hour Delay-Level of Service											
		Existing[1]		Existing Plus Project[2]		Opening Year (2018)				Year 2040			
						Without Project[3]		With Project[4]		Without Project[5]		With Project[6]	
		Mid-Day	Evening	Mid-Day	Evening	Mid-Day	Evening	Mid-Day	Evening	Mid-Day	Evening	Mid-Day	Evening
San Timoteo Canyon Road (NS) at:													
Barton Road (EW) - #1	County of San Bernardino/City of Redlands	8.7-A	10.1-B	9.3-A	10.8-B	8.8-A	10.2-B	9.5-A	10.9-B	10.7-B	13.4-B	11.5-B	14.4-B
San Timoteo Canyon Road/Nevada Street (NS) at:													
San Timoteo Canyon Road (EW) - #2	County of San Bernardino/City of Redlands	12.5-B	14.7-B	12.9-B	15.3-C	12.8-B	14.9-B	13.2-B	15.5-C	14.3-B	17.2-C	14.8-B	18.0-C
Nevada Street (NS) at:													
Project North Access (EW) - #3	County of San Bernardino/City of Redlands	N/A	N/A	9.1-A	9.2-A	N/A	N/A	9.1-A	9.2-A	N/A	N/A	9.1-A	9.3-A
Project South Access (EW) - #4	County of San Bernardino/City of Redlands	N/A	N/A	9.1-A	9.1-A	N/A	N/A	9.1-A	9.1-A	N/A	N/A	9.1-A	9.2-A
Beaumont Avenue (EW) - #5	County of San Bernardino/City of Redlands	10.2-B	10.7-B	10.5-B	11.0-B	10.3-B	10.8-B	10.7-B	11.1-B	10.8-B	11.3-B	11.1-B	11.6-B

[1] See Table 1

[2] See Table 3

[3] See Table 4

[4] See Table 5

[5] See Table 6

[6] See Table 7

Figure 14
Existing Plus Project Friday
Mid-Day Peak Hour Intersection Turning Movement Volumes

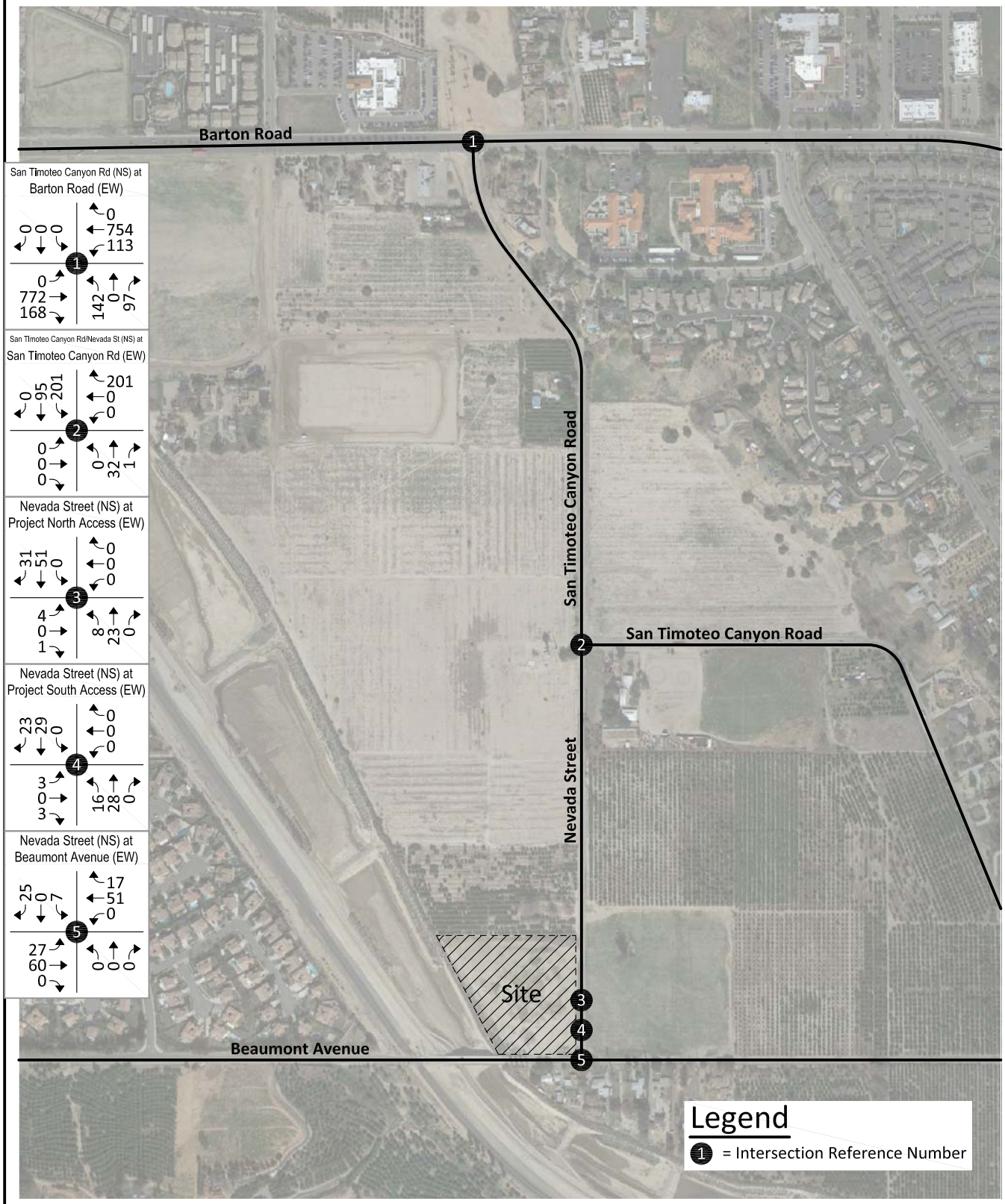

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Figure 15
Existing Plus Project Friday
Evening Peak Hour Intersection Turning Movement Volumes

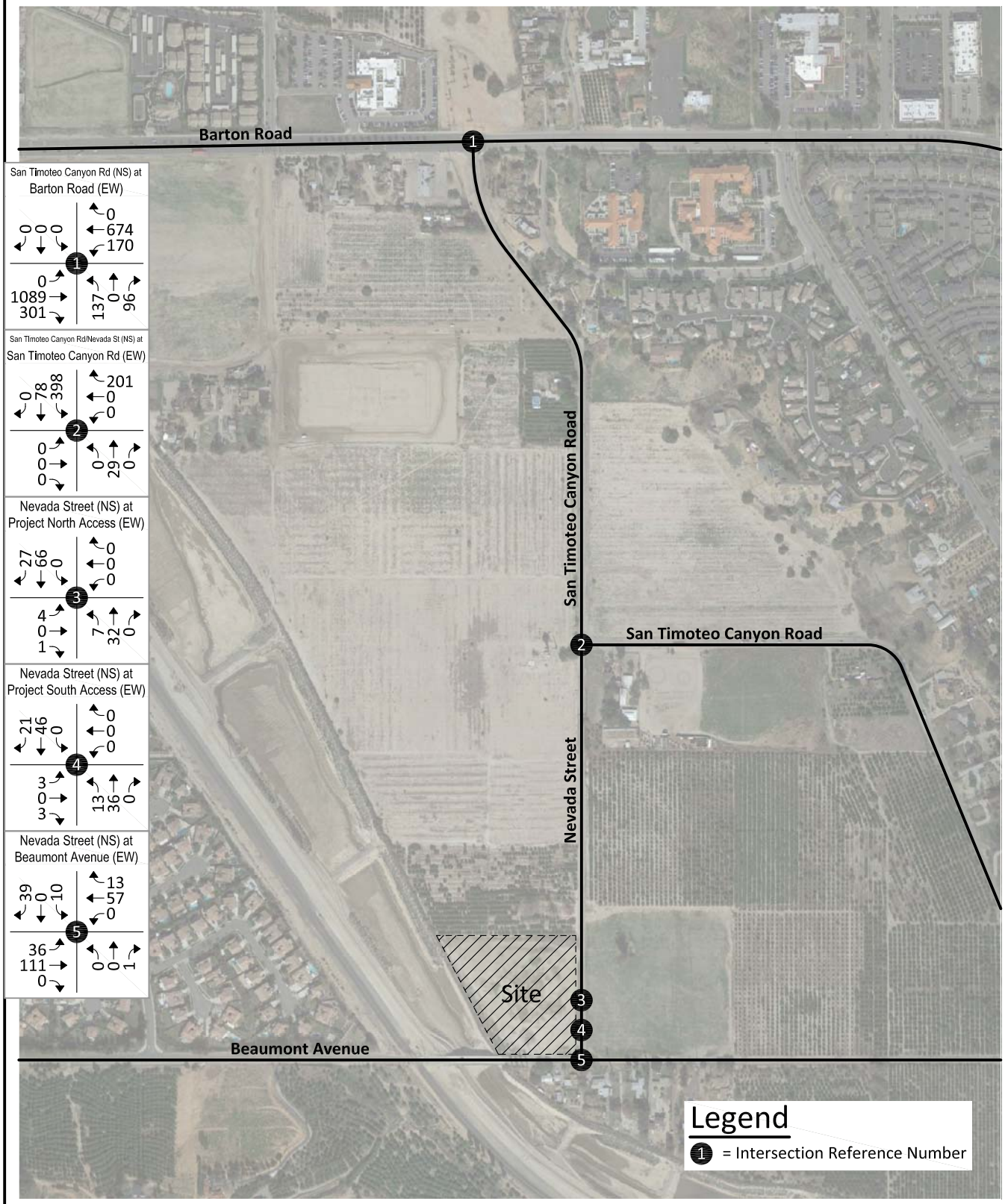

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Figure 16
Opening Year (2018) Without Project Friday
Mid-Day Peak Hour Intersection Turning Movement Volumes

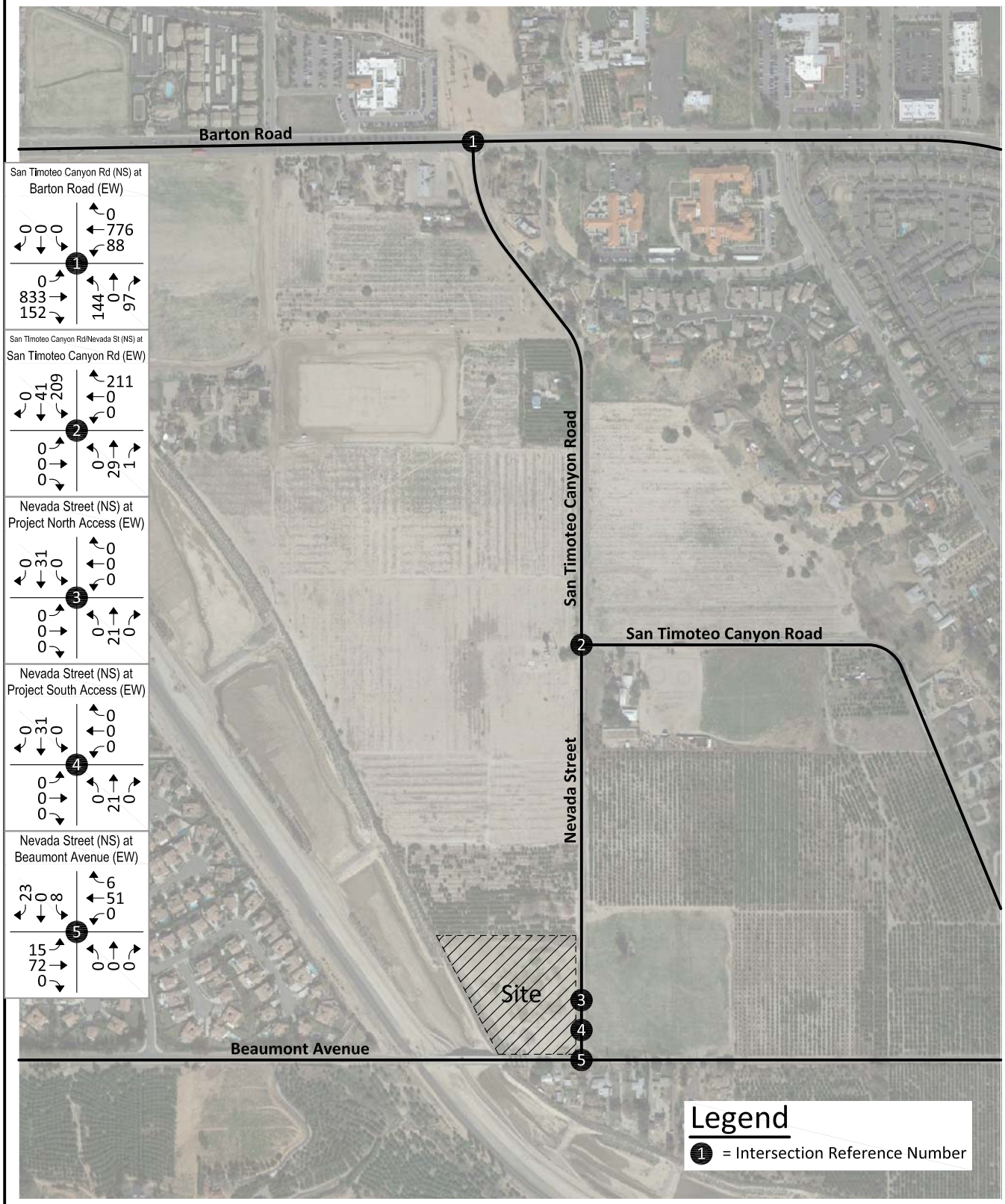

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Figure 17
Opening Year (2018) Without Project Friday
Evening Peak Hour Intersection Turning Movement Volumes

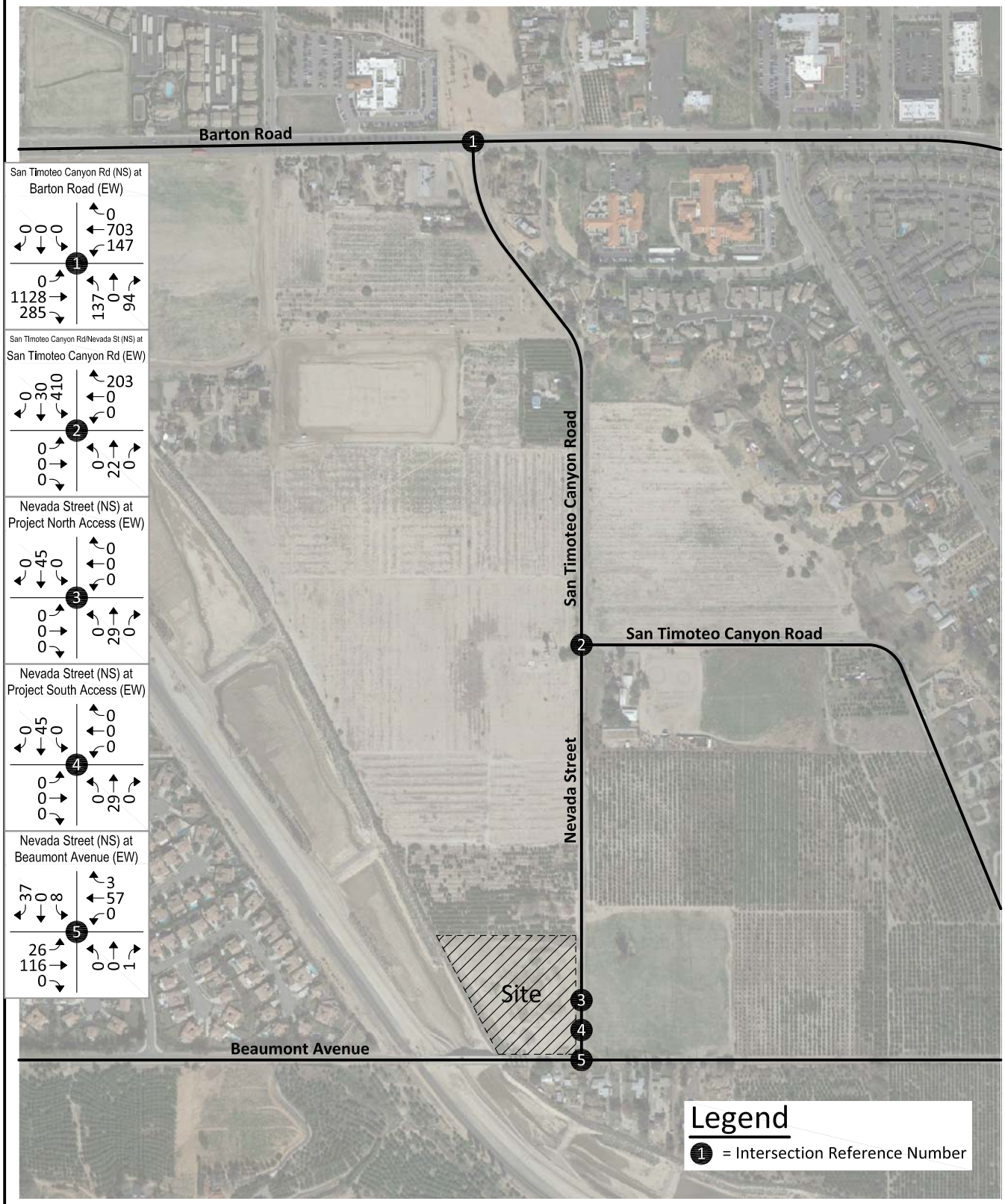

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Figure 18
Opening Year (2018) With Project Friday
Mid-Day Peak Hour Intersection Turning Movement Volumes

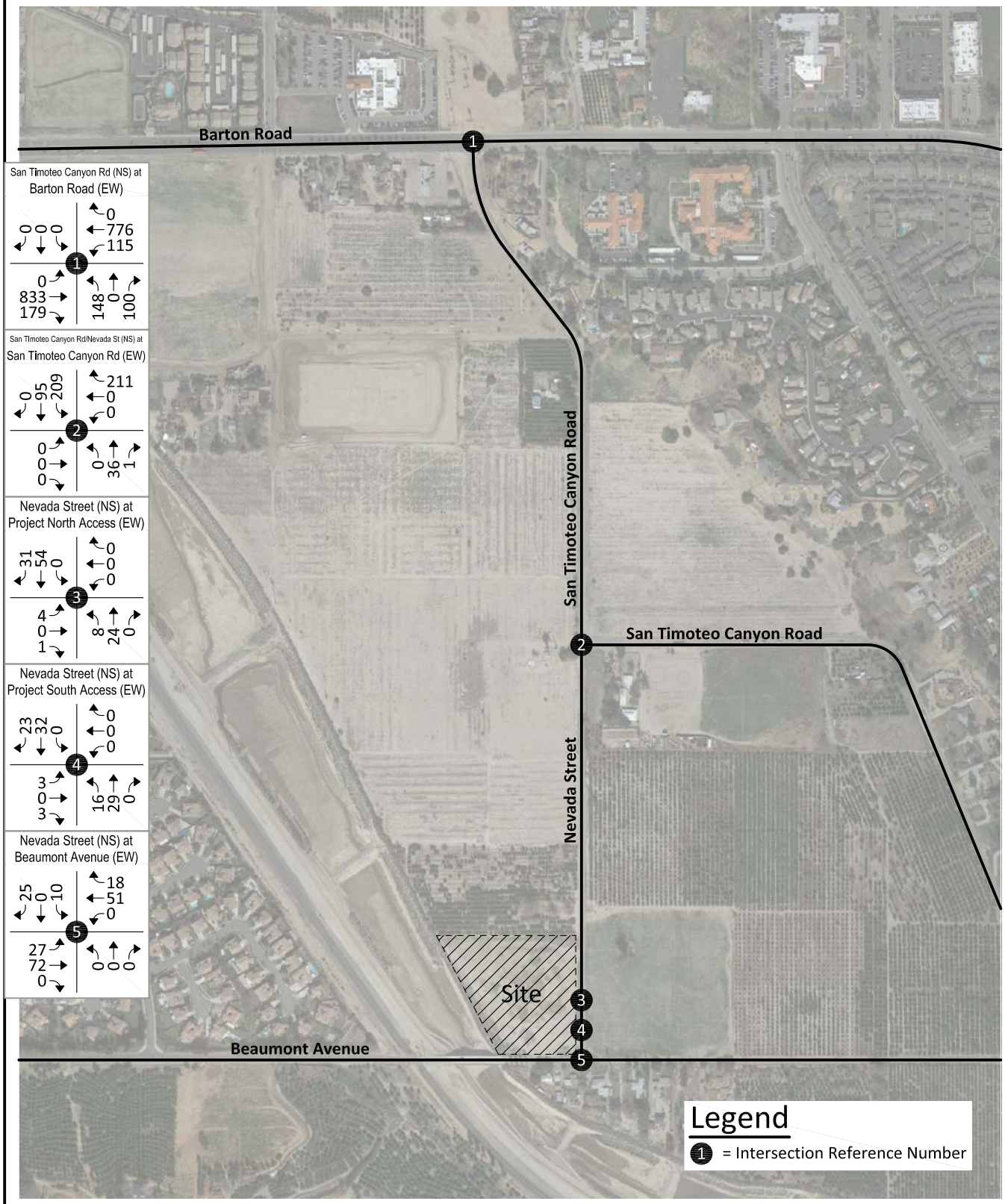

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Figure 19
Opening Year (2018) With Project Friday
Evening Peak Hour Intersection Turning Movement Volumes

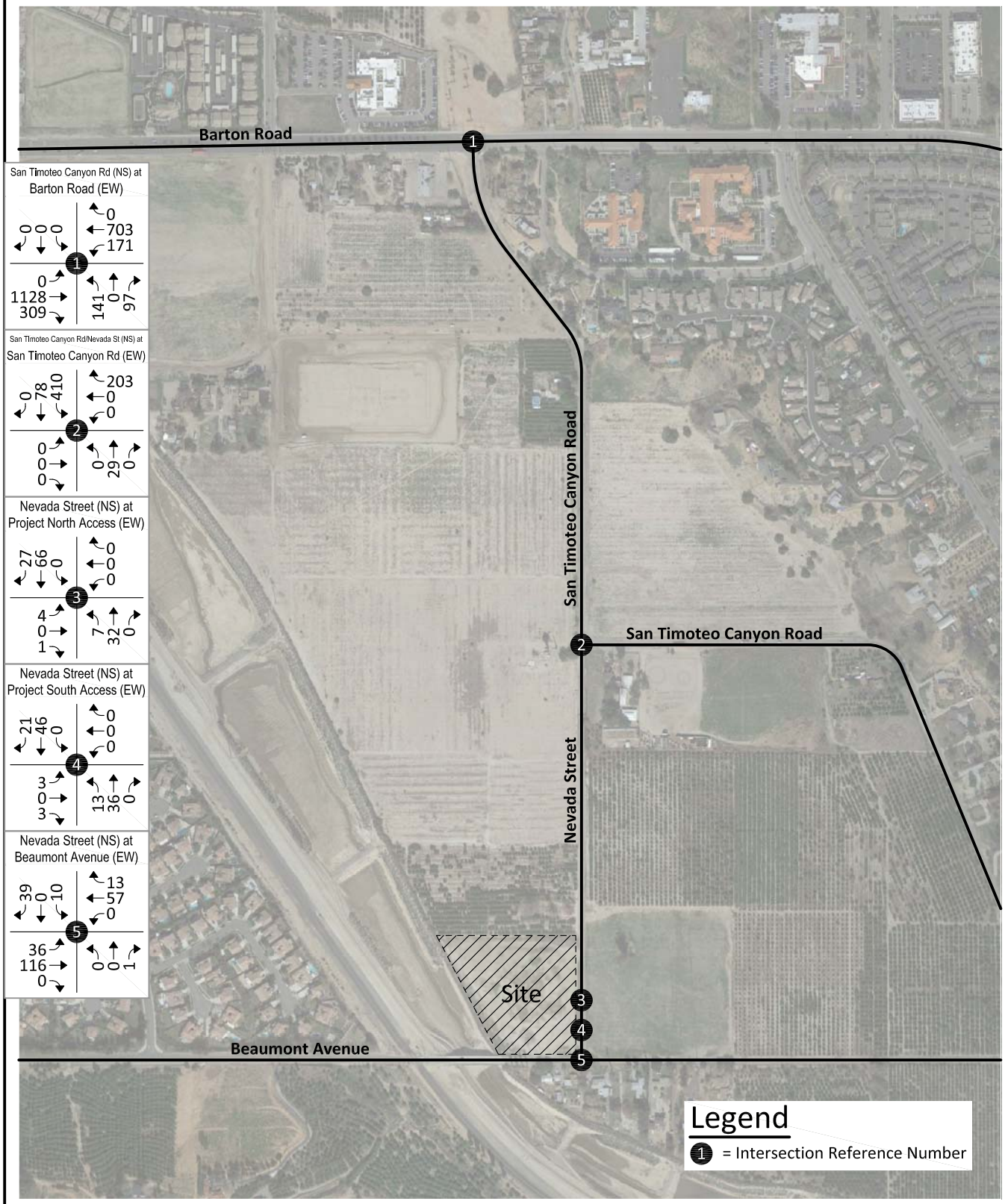

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Figure 20
Year 2040 Without Project Friday
Mid-Day Peak Hour Intersection Turning Movement Volumes

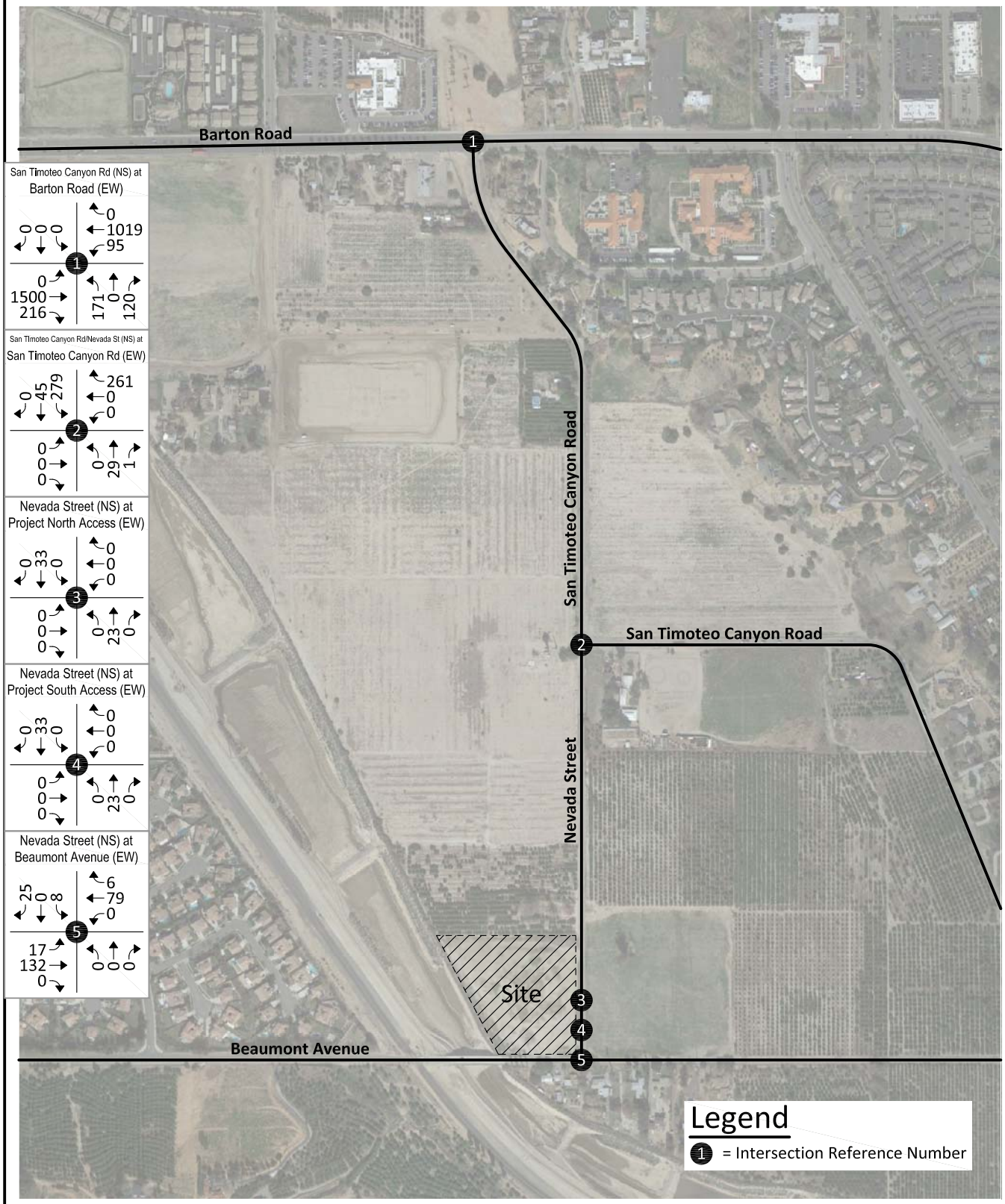

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Figure 21
Year 2040 Without Project Friday
Evening Peak Hour Intersection Turning Movement Volumes

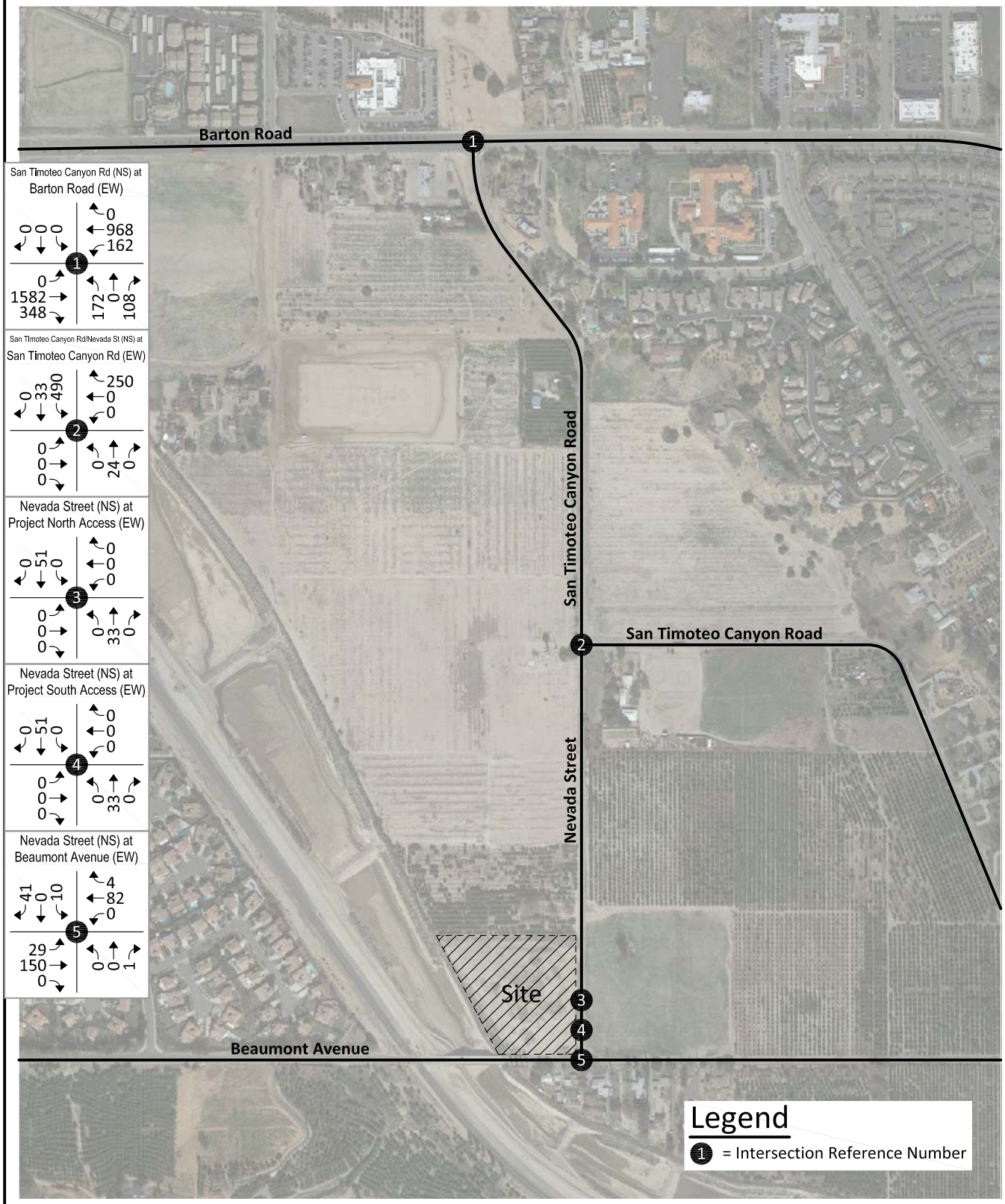

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Figure 22
Year 2040 With Project Friday
Mid-Day Peak Hour Intersection Turning Movement Volumes

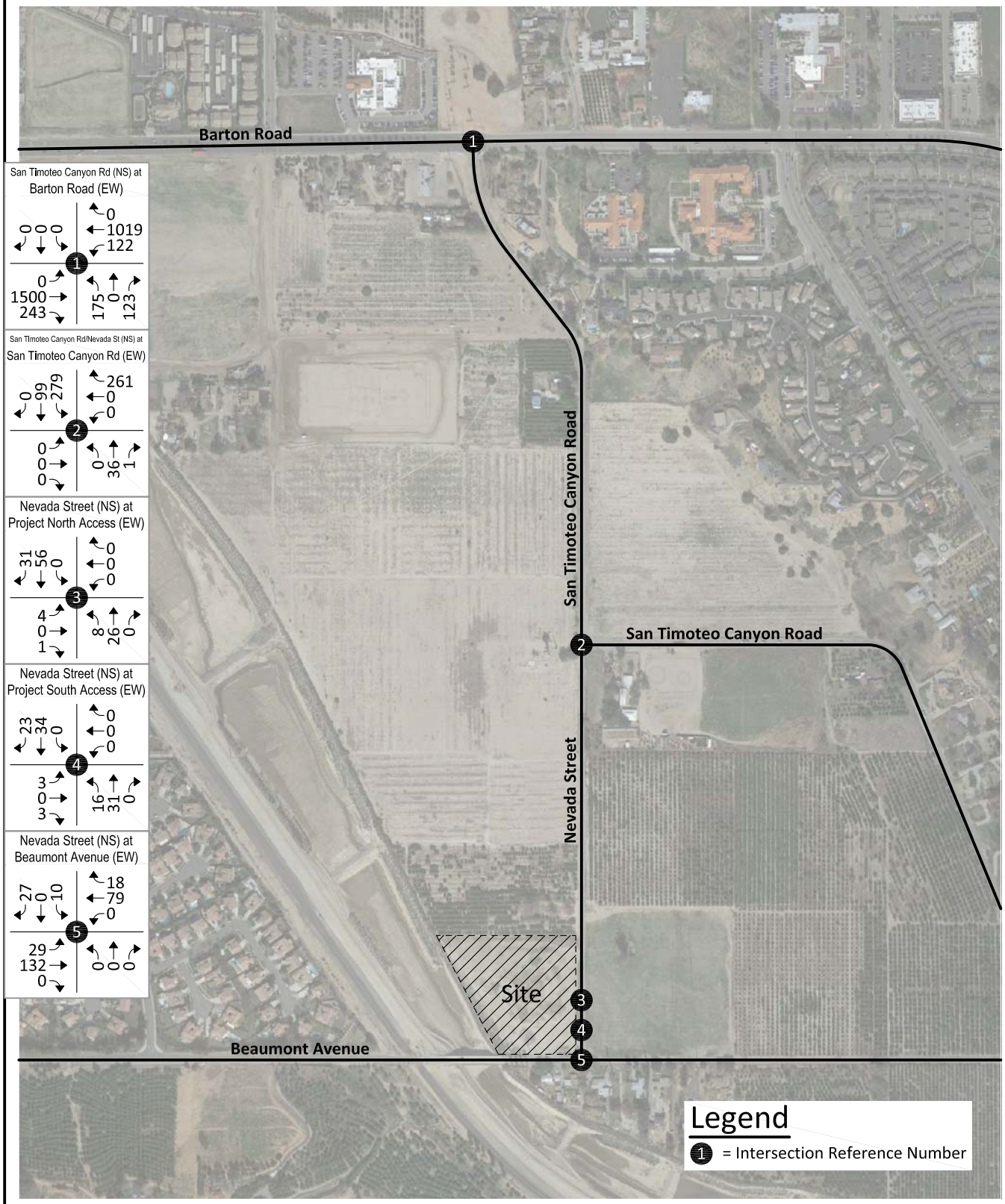

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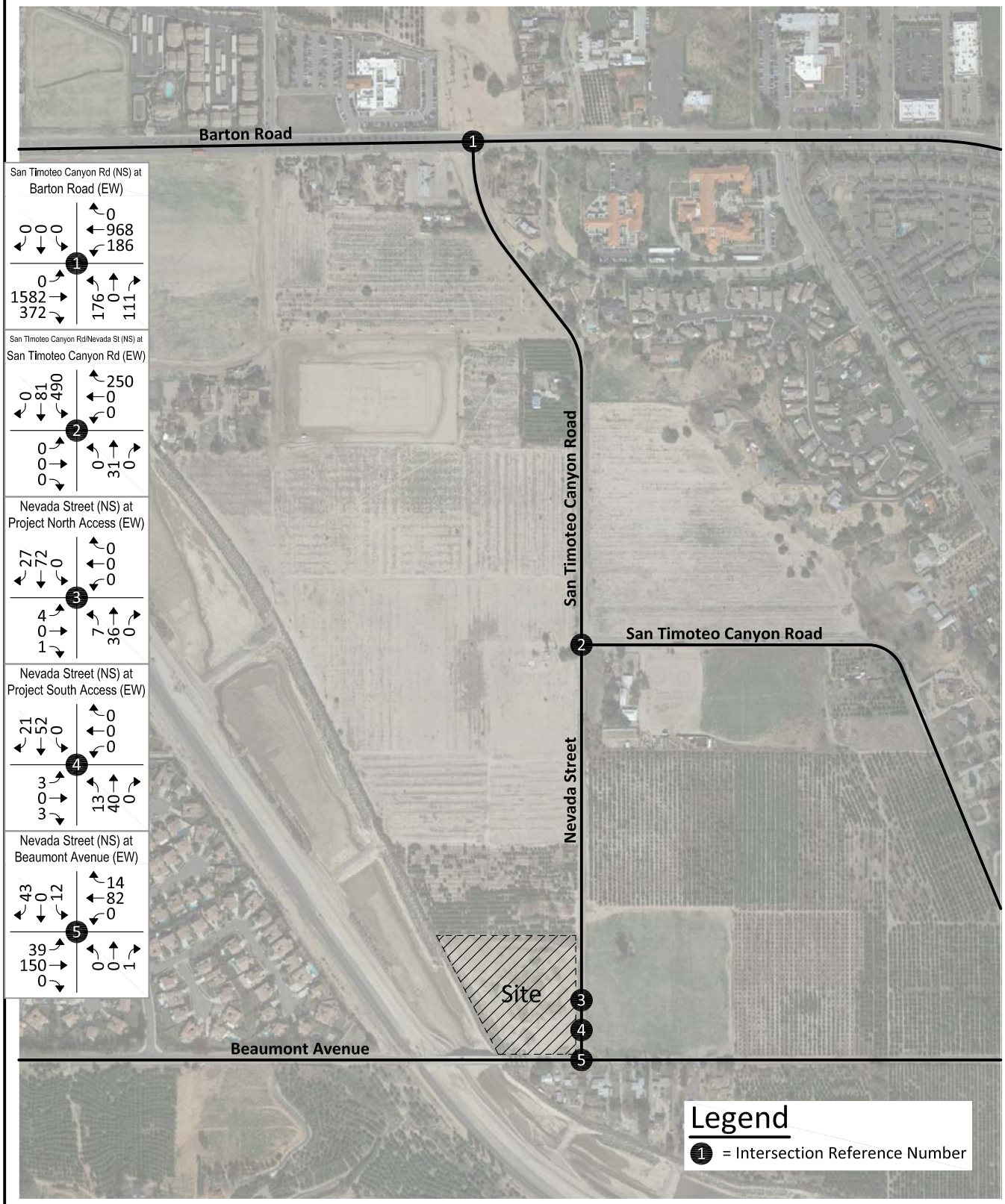
Figure 23
Year 2040 With Project Friday
Evening Peak Hour Intersection Turning Movement Volumes



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V. CONCLUSIONS AND RECOMMENDATIONS

A. Summary

The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act.

The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with the California Environmental Quality Act authorizing legislation. This report analyzes traffic impacts for the anticipated opening date with full occupancy of the development in Year 2018, at which time it will be generating trips at its full potential.

A series of scoping discussions were conducted with the County of San Bernardino and the California Department of Transportation to define the desired analysis locations for each future analysis year. In addition, staff from the County of San Bernardino has also been contacted to discuss the project and its associated travel patterns.

No analysis is required further than 5 miles from the project site. The roadway elements that must be analyzed are dependent on both the analysis year project Opening Year or Buildout Year (2040) and project generated traffic volumes. The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments have been included in the analysis when the anticipated project volume equals or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways.

The project does not contribute trips greater than the freeway threshold volume of 100 two-way peak hour trips.

B. Existing Conditions

Regional access to the project site is provided by the I-10 Freeway. Local access is provided by various roadways in the vicinity of the site. The east-west roadways which will be most affected by the project are Barton Road, San Timoteo Canyon Road, and Beaumont Avenue. The north-south roadways which will be most affected by the project are San Timoteo Canyon Road and Nevada Street.

For Existing traffic conditions, the study area intersections currently operate within acceptable Levels of Service during the peak hours.

C. Project Trips

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of

vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for Friday morning, Friday mid-day, and Friday evening peak hours inbound and outbound traffic for the proposed land use.

The Islamic Community Center of Redlands has provided a list of all special events and daily activities. This list provides the hours of operation, the number of employees, the number of attendees, the times of the events, and the duration of the events. A conservative vehicle occupancy of 1.00 persons per vehicle has been assumed to convert the number of employees to vehicles. A conservative vehicle occupancy of 1.50 persons per vehicle has been assumed to convert the number of attendees to vehicles. The daily trip generation for the site assumes 100 percent of the attendees utilize the site for each event. Based on discussions with the applicant, Friday mid-day peak hour contains the peak trip generation.

For daily operations, the maximum number of employees is 10. Daily operations assumed that all employees arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that all employees exit and enter the site. Daily worship occurs up to five times a day with a maximum number of attendees of 40. Daily worship occurs throughout the day. Daily worship attendees are assumed to arrive during the morning peak hour and depart during the evening peak hour. During the mid-day peak hour, it is assumed that service attendees arrive and depart.

Ramadan prayer occurs in the evenings with a maximum number of attendees of 200. Ramadan prayer attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

Annual feast occurs in the evenings with a maximum number of attendees of 500. Annual feast attendees are assumed to arrive during the mid-day peak hour and the evening peak hour.

The trip generation for the project looks at the daily operations plus special event vehicle trips. Major special events only occur two days a year and are not included in the analysis.

The proposed development is projected to generate approximately 88 vehicle trips during the Friday mid-day peak hour and 79 vehicle trips during the Friday evening peak hour.

D. Future Conditions

An Existing Plus Project, Opening Year (2018), and Year 2040 analysis are included in this report. The traffic operations analyses are summarized in Table 8.

1. Existing Plus Project

For Existing Plus Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

2. Opening Year (2018) Without Project

For Opening Year (2018) Without Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

3. Opening Year (2018) With Project

For Opening Year (2018) With Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

4. Year 2040 Without Project

For Year 2040 Without Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

5. Year 2040 With Project

For Year 2040 With Project traffic conditions, the study area intersections are projected to operate within acceptable Levels of Service during the peak hours.

E. Recommendations

The recommendations in this section address on-site improvements, off-site improvements and the phasing of all necessary study area transportation improvements.

1. On-Site Improvements

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project itself (see Figure 24).

Construct Nevada Avenue from the north project boundary to Beaumont Avenue at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

Construct Beaumont Avenue from the west project boundary to Nevada Avenue at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

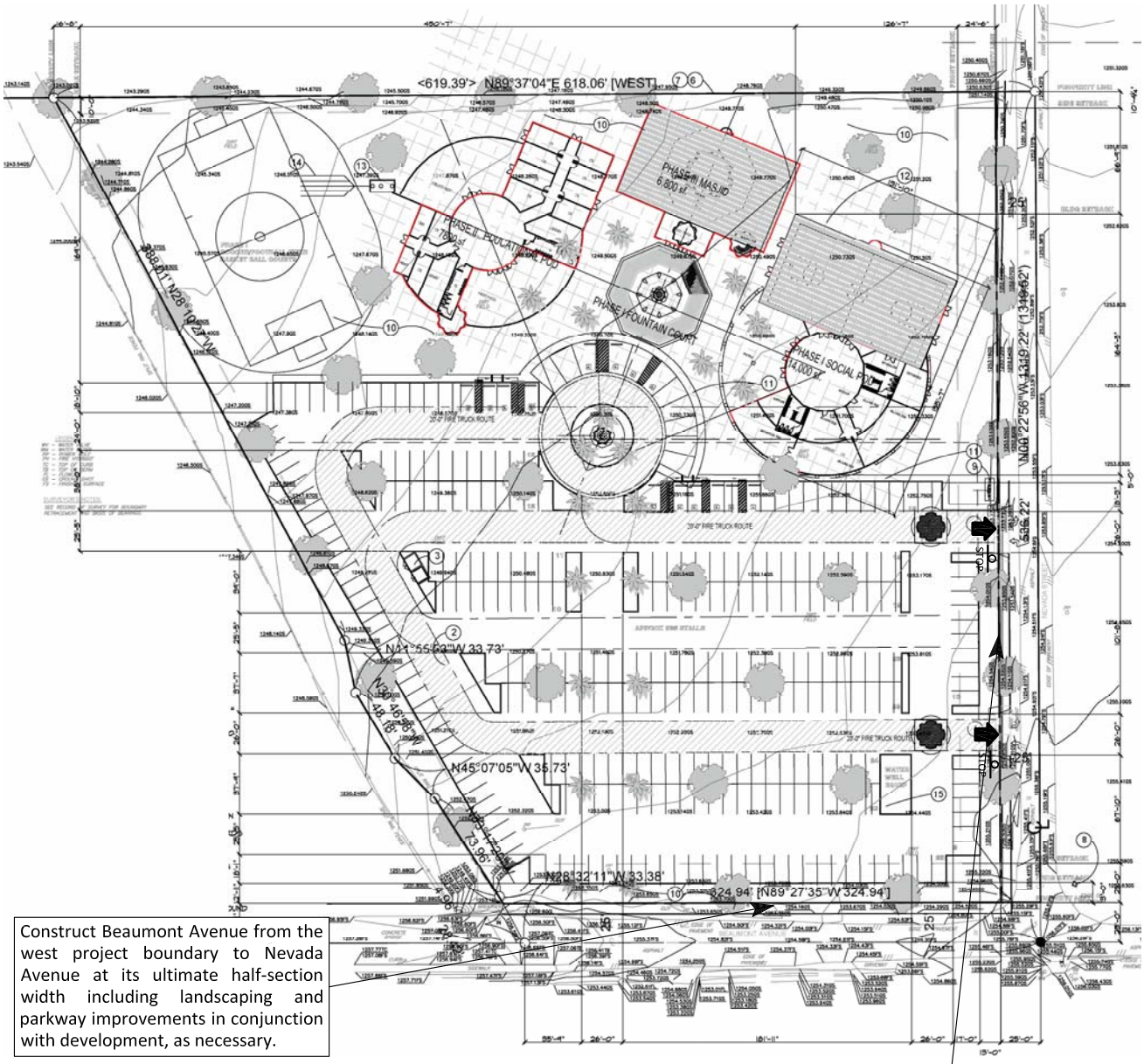
The site should provide sufficient parking spaces to meet County of San Bernardino parking code requirements in order to service on-site parking demand.

2. Off-Site Improvements

As is the case for any roadway design, the County of San Bernardino should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

Figure 24
Circulation Recommendations



Construct Beaumont Avenue from the west project boundary to Nevada Avenue at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

The site should provide sufficient parking spaces to meet County of San Bernardino parking code requirements in order to service on-site parking demand.

As is the case for any roadway design, the County of San Bernardino should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

Construct Nevada Avenue from the north project boundary to Beaumont Avenue at its ultimate half-section width including landscaping and parkway improvements in conjunction with development, as necessary.

Legend

STOP = Stop Sign

= Full Access Driveway

KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6416

APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – Traffic Count Worksheets

Appendix C – Future Growth Increment Calculation Worksheets

Appendix D – Explanation and Calculation of Intersection Delay

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

Traffic Count Worksheets

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Fri, Jun 24, 16	LOCATION:	Redlands	PROJECT #:	SC1011
	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
	EAST & WEST:	Barton	CONTROL:	SIGNAL

NOTES:

N ▲ ◄ W E ► S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
PM	12:00 PM	21	0	18	0	0	0	0	181	29	20	199	0	468	0	0	0	0	0
	12:15 PM	19	0	14	0	0	0	0	200	33	19	177	0	462	0	0	0	0	0
	12:30 PM	21	0	21	0	0	0	0	175	26	20	188	0	451	0	0	0	0	0
	12:45 PM	30	0	22	0	0	0	0	204	31	15	203	0	505	0	0	0	0	0
	1:00 PM	36	0	19	0	0	0	0	198	30	23	164	0	470	0	0	0	0	0
	1:15 PM	31	0	18	0	0	0	0	183	36	24	185	0	477	0	0	0	0	0
	1:30 PM	22	0	16	0	0	0	0	187	39	31	152	0	447	0	0	0	0	0
	1:45 PM	36	0	20	0	0	0	0	174	29	24	184	0	467	0	0	0	1	1
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	216	0	148	0	0	0	0	1,502	253	176	1,452	0	3,747	0	0	0	1	1
	APPROACH %	59%	0%	41%	0%	0%	0%	0%	86%	14%	11%	89%	0%						
	APP/DEPART	364	/	0	0	/	428	1,755	/	1,651	1,628	/	1,668	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	118	0	80	0	0	0	0	760	123	82	740	0	1,903					
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	86%	14%	10%	90%	0%						
	PEAK HR FACTOR		0.900			0.000			0.939			0.943		0.942					
	APP/DEPART	198	/	0	0	/	205	883	/	840	822	/	858	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	52	0	38	0	0	0	0	246	60	37	180	0	613	0	0	0	0	0
	4:15 PM	30	0	24	0	0	0	0	234	52	39	177	0	556	0	0	0	0	0
	4:30 PM	27	0	21	0	0	0	0	261	80	27	140	0	556	0	0	0	0	0
	4:45 PM	27	0	28	0	0	0	1	278	57	31	189	0	611	0	0	1	0	1
	5:00 PM	33	0	25	0	0	0	0	254	55	46	169	0	582	0	0	0	0	0
	5:15 PM	36	0	13	0	0	0	0	281	73	41	166	0	610	0	0	0	0	0
	5:30 PM	21	0	15	0	0	0	0	244	48	38	171	0	537	0	0	0	1	1
	5:45 PM	35	0	11	0	0	0	0	224	61	35	153	0	519	0	0	0	2	2
	VOLUMES	261	0	175	0	0	0	1	2,022	486	294	1,345	0	4,584	0	0	1	3	4
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	81%	19%	18%	82%	0%						
	APP/DEPART	436	/	0	0	/	777	2,509	/	2,200	1,639	/	1,607	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	123	0	87	0	0	0	1	1,074	265	145	664	0	2,359					
	APPROACH %	59%	0%	41%	0%	0%	0%	0%	80%	20%	18%	82%	0%						
	PEAK HR FACTOR		0.905			0.000			0.946			0.919		0.965					
	APP/DEPART	210	/	0	0	/	410	1,340	/	1,161	809	/	788	0					

San Timoteo Canyon

NORTH SIDE

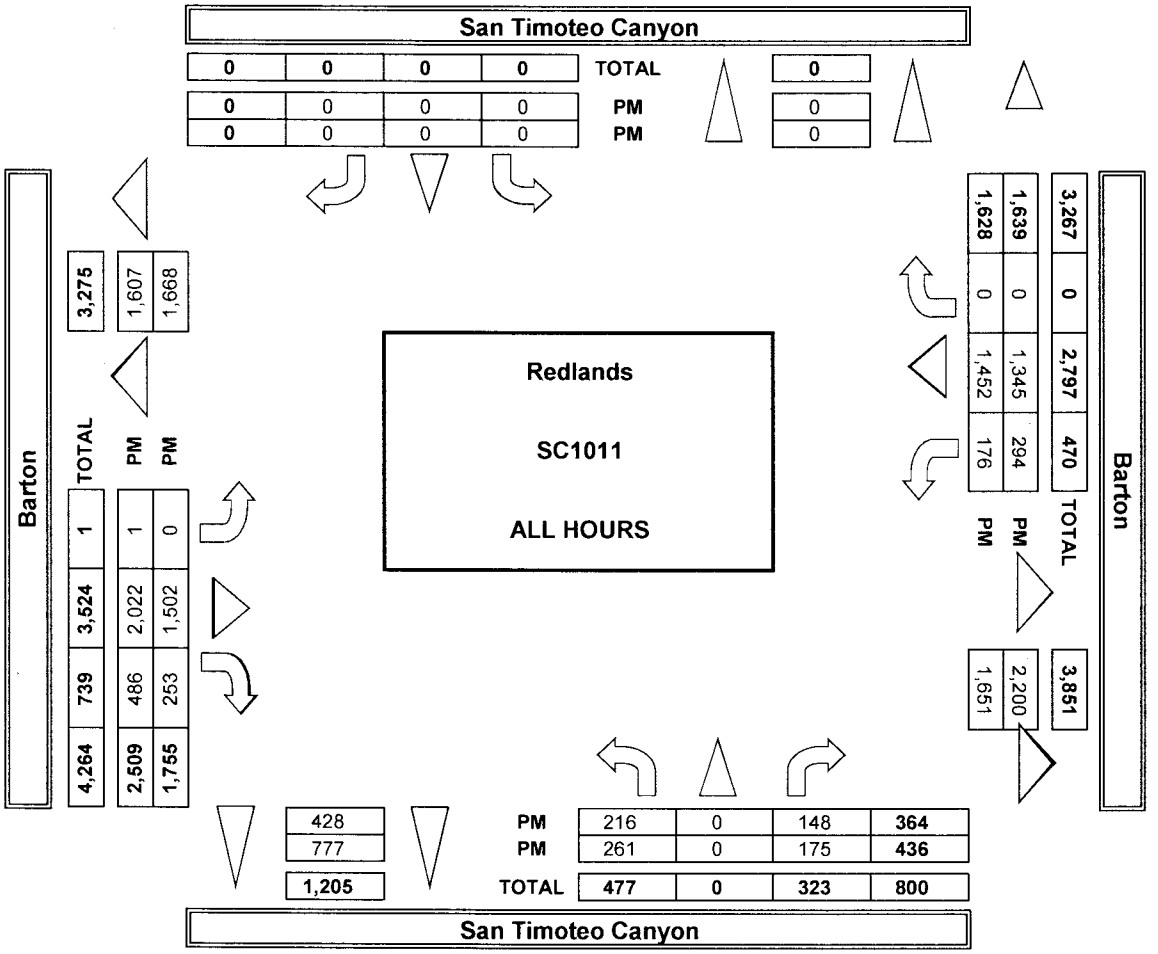
Barton WEST SIDE EAST SIDE **Barton**

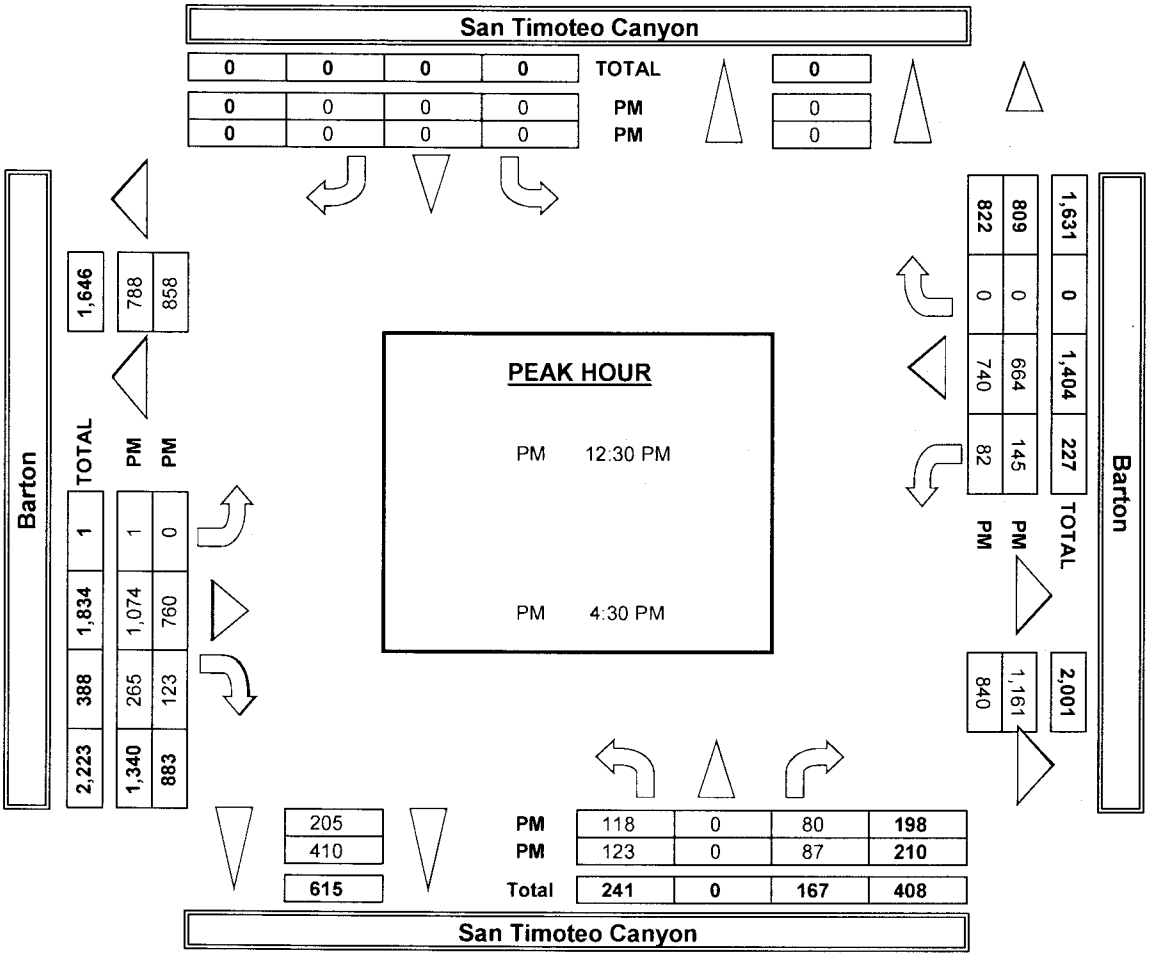
SOUTH SIDE

San Timoteo Canyon

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

▲ N ◄ W E ► S ▼

		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	18	0	16	0	0	0	0	178	28	19	194	0	453	0	0	0	0	0
	12:15 PM	18	0	13	0	0	0	0	195	28	16	172	0	442	0	0	0	0	0
	12:30 PM	18	0	18	0	0	0	0	173	23	19	183	0	434	0	0	0	0	0
	12:45 PM	28	0	17	0	0	0	0	199	27	15	199	0	485	0	0	0	0	0
	1:00 PM	32	0	17	0	0	0	0	195	29	22	161	0	456	0	0	0	0	0
	1:15 PM	24	0	17	0	0	0	0	179	31	21	180	0	452	0	0	0	0	0
	1:30 PM	21	0	16	0	0	0	0	185	37	30	147	0	436	0	0	0	0	0
	1:45 PM	34	0	18	0	0	0	0	170	29	22	178	0	451	0	0	0	1	1
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	193	0	132	0	0	0	0	1,474	232	164	1,414	0	3,609	0	0	0	1	1
	APPROACH %	59%	0%	41%	0%	0%	0%	0%	86%	14%	10%	90%	0%						
	APP/DEPART	325	/	0	0	/	395	1,706	/	1,607	1,578	/	1,607	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	105	0	67	0	0	0	0	758	124	88	687	0	1,829					
	APPROACH %	61%	0%	39%	0%	0%	0%	0%	86%	14%	11%	89%	0%						
	PEAK HR FACTOR		0.878			0.000			0.976			0.905		0.943					
	APP/DEPART	172	/	0	0	/	212	882	/	825	775	/	792	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	49	0	35	0	0	0	0	244	60	34	178	0	600	0	0	0	0	0
	4:15 PM	28	0	21	0	0	0	0	230	49	36	175	0	539	0	0	0	0	0
	4:30 PM	24	0	19	0	0	0	0	258	76	27	136	0	540	0	0	0	0	0
	4:45 PM	25	0	28	0	0	0	1	277	54	31	183	0	599	0	0	1	0	1
	5:00 PM	32	0	23	0	0	0	0	250	54	45	167	0	571	0	0	0	0	0
	5:15 PM	35	0	13	0	0	0	0	274	72	41	163	0	598	0	0	0	0	0
	5:30 PM	20	0	14	0	0	0	0	244	45	38	170	0	531	0	0	0	1	1
	5:45 PM	35	0	10	0	0	0	0	222	59	35	151	0	512	0	0	0	2	2
	VOLUMES	248	0	163	0	0	0	1	1,999	469	287	1,323	0	4,490	0	0	1	3	4
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	81%	19%	18%	82%	0%						
	APP/DEPART	411	/	0	0	/	753	2,469	/	2,165	1,610	/	1,572	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	116	0	83	0	0	0	0	1,059	256	144	649	0	2,308					
	APPROACH %	58%	0%	42%	0%	0%	0%	0%	80%	19%	18%	82%	0%						
	PEAK HR FACTOR		0.905			0.000			0.951			0.926		0.963					
	APP/DEPART	199	/	0	0	/	400	1,316	/	1,142	793	/	766	0					

San Timoteo Canyon

NORTH SIDE

Barton WEST SIDE

EAST SIDE **Barton**

SOUTH SIDE

San Timoteo Canyon

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

▲ N ◄ W E ► S ▼

		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	1	0	1	0	0	0	0	3	1	1	3	0	10	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	2	2	0	4	0	8	0	0	0	0	0
	12:30 PM	1	0	1	0	0	0	0	2	0	1	4	0	9	0	0	0	0	0
	12:45 PM	1	0	2	0	0	0	0	2	2	0	1	0	8	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0
	1:15 PM	2	0	0	0	0	0	0	2	1	1	4	0	10	0	0	0	0	0
	1:30 PM	1	0	0	0	0	0	0	1	0	0	3	0	5	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	2	0	1	5	0	8	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	6	0	4	0	0	0	0	14	6	5	26	0	61	0	0	0	0	0
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	70%	30%	16%	84%	0%						
	APP/DEPART	10	/	0	0	/	11	20	/	18	31	/	32	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	3	0	4	0	0	0	0	9	5	2	12	0	35					
	APPROACH %	43%	0%	57%	0%	0%	0%	0%	64%	36%	14%	86%	0%						
	PEAK HR FACTOR		0.583			0.000			0.875			0.700		0.875					
	APP/DEPART	7	/	0	0	/	7	14	/	13	14	/	15	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	0	0	1	0	3	2	0	8	0	0	0	0	0
	4:15 PM	1	0	1	0	0	0	0	2	1	0	0	0	5	0	0	0	0	0
	4:30 PM	1	0	1	0	0	0	0	0	1	0	3	0	6	0	0	0	0	0
	4:45 PM	1	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	2	1	1	2	0	6	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	4	0	0	1	0	5	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	1	1	0	1	0	3	0	0	0	0	0
	VOLUMES	4	0	3	0	0	0	0	10	5	4	14	0	40	0	0	0	0	0
	APPROACH %	57%	0%	43%	0%	0%	0%	0%	67%	33%	22%	78%	0%						
	APP/DEPART	7	/	0	0	/	9	15	/	13	18	/	18	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	4	0	3	0	0	0	0	3	2	3	9	0	24					
	APPROACH %	57%	0%	43%	0%	0%	0%	0%	60%	40%	25%	75%	0%						
	PEAK HR FACTOR		0.875			0.000			0.417			0.600		0.750					
	APP/DEPART	7	/	0	0	/	5	5	/	6	12	/	13	0					

San Timoteo Canyon

NORTH SIDE

Barton WEST SIDE EAST SIDE **Barton**

SOUTH SIDE

San Timoteo Canyon

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

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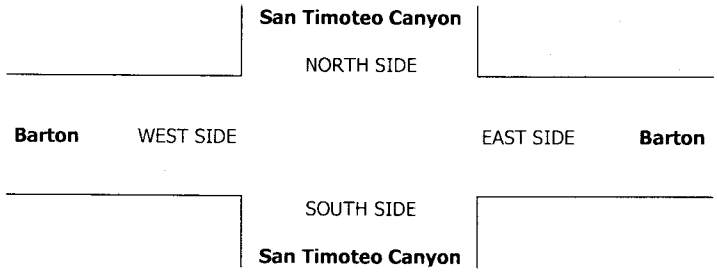
		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	2	2	2	0	0	6	0	0	0	0	0
	12:30 PM	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
	12:45 PM	0	0	2	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0
	1:00 PM	2	0	2	0	0	0	0	0	1	0	1	0	6	0	0	0	0	0
	1:15 PM	2	0	0	0	0	0	0	0	2	2	0	0	6	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	1	2	1	0	0	4	0	0	0	0	0
	1:45 PM	1	0	1	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	7	0	5	0	0	0	0	5	8	5	1	0	31	0	0	0	0	0
	APPROACH %	58%	0%	42%	0%	0%	0%	0%	38%	62%	83%	17%	0%						
	APP/DEPART	12	/	0	0	/	13	13	/	10	6	/	8	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	5	0	3	0	0	0	0	2	5	3	1	0	19					
	APPROACH %	63%	0%	38%	0%	0%	0%	0%	29%	71%	75%	25%	0%						
	PEAK HR FACTOR		0.500			0.000			0.583			0.500		0.792					
	APP/DEPART	8	/	0	0	/	8	7	/	5	4	/	6	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0
	4:15 PM	1	0	0	0	0	0	0	0	0	2	1	0	4	0	0	0	0	0
	4:30 PM	1	0	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	2	0	1	0	3	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	0	2	0	0	0	0	4	3	2	4	0	18	0	0	0	0	0
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	57%	43%	33%	67%	0%						
	APP/DEPART	5	/	0	0	/	5	7	/	6	6	/	7	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	2	0	1	0	0	0	0	3	2	2	3	0	13					
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	60%	40%	40%	60%	0%						
	PEAK HR FACTOR		0.375			0.000			0.625			0.417		0.813					
	APP/DEPART	3	/	0	0	/	4	5	/	4	5	/	5	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

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		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	12:15 PM	1	0	1	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0
	12:30 PM	1	0	2	0	0	0	0	0	2	0	1	0	6	0	0	0	0	0
	12:45 PM	1	0	1	0	0	0	0	0	2	0	1	0	5	0	0	0	0	0
	1:00 PM	2	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0
	1:15 PM	2	0	1	0	0	0	0	0	2	0	0	0	5	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
	1:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	8	0	7	0	0	0	0	1	7	1	4	0	28	0	0	0	0	0
	APPROACH %	53%	0%	47%	0%	0%	0%	0%	13%	88%	20%	80%	0%						
	APP/DEPART	15	/	0	0	/	8	8	/	8	5	/	12	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	6	0	4	0	0	0	0	1	6	0	2	0	19					
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	14%	86%	0%	100%	0%						
	PEAK HR FACTOR		0.833			0.000			0.875			0.500		0.792					
	APP/DEPART	10	/	0	0	/	6	7	/	5	2	/	8	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	4:15 PM	0	0	2	0	0	0	0	1	2	1	0	0	6	0	0	0	0	0
	4:30 PM	1	0	1	0	0	0	0	2	2	0	0	0	6	0	0	0	0	0
	4:45 PM	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
	5:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:15 PM	1	0	0	0	0	0	0	1	1	0	0	0	3	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
	5:45 PM	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
	VOLUMES	5	0	7	0	0	0	0	4	8	1	0	0	25	0	0	0	0	0
	APPROACH %	42%	0%	58%	0%	0%	0%	0%	33%	67%	100%	0%	0%						
	APP/DEPART	12	/	0	0	/	9	12	/	11	1	/	5	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	3	0	4	0	0	0	0	3	5	1	0	0	16					
	APPROACH %	43%	0%	57%	0%	0%	0%	0%	38%	63%	100%	0%	0%						
	PEAK HR FACTOR		0.875			0.000			0.500			0.250		0.667					
	APP/DEPART	7	/	0	0	/	6	8	/	7	1	/	3	0					

San Timoteo Canyon

NORTH SIDE

Barton WEST SIDE

EAST SIDE **Barton**

SOUTH SIDE

San Timoteo Canyon

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 5:	NOTES:
RV	

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		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	1	1	/	0	0	/	0	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	0	0	0	0	0	0	1	0	0	0	1					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250					
	APP/DEPART	0	/	0	0	/	1	1	/	0	0	/	0	0					

San Timoteo Canyon

NORTH SIDE

Barton WEST SIDE EAST SIDE **Barton**

SOUTH SIDE

San Timoteo Canyon

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	San Timoteo Canyon	LOCATION #:	1
FRIDAY	EAST & WEST:	Barton	CONTROL:	SIGNAL

CLASS 6:	NOTES:
BUSES	

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		NORTHBOUND San Timoteo Canyon			SOUTHBOUND San Timoteo Canyon			EASTBOUND Barton			WESTBOUND Barton				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	1	0	1	1	0	3	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	2	0	0	2	0	4	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
	1:15 PM	1	0	0	0	0	0	0	2	0	0	1	0	4	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	1	0	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	0	0	0	0	0	8	0	1	7	0	18	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	13%	88%	0%						
	APP/DEPART	2	/	0	0	/	1	8	/	8	8	/	9	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	1	0	0	0	0	0	0	6	0	0	3	0	10					
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.000			0.750			0.375		0.625					
	APP/DEPART	1	/	0	0	/	0	6	/	6	3	/	4	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	0	0	0	0	0
	5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	5	0	0	4	0	10	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	1	/	0	0	/	0	5	/	5	4	/	5	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	1	0	0	0	0	0	0	3	0	0	2	0	6					
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.000			0.375			0.500		0.500					
	APP/DEPART	1	/	0	0	/	0	3	/	3	2	/	3	0					

San Timoteo Canyon

NORTH SIDE

Barton WEST SIDE EAST SIDE **Barton**

SOUTH SIDE

San Timoteo Canyon

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Fri, Jun 24, 16	LOCATION:	Redlands	PROJECT #:	SC1011
	NORTH & SOUTH:	Nevada	LOCATION #:	2
	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

NOTES:

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☐ Add U-Turns to Left Turns

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
PM	12:00 PM	0	1	0	19	5	0	0	0	0	0	0	20	45	0	0	0	0	0
	12:15 PM	0	5	0	50	3	0	0	0	0	0	0	26	84	0	0	0	0	0
	12:30 PM	0	2	0	34	11	0	0	0	0	1	0	44	92	0	0	0	0	0
	12:45 PM	0	11	1	38	9	0	0	0	0	0	0	40	99	0	0	0	0	0
	1:00 PM	0	1	0	40	10	0	0	0	0	0	0	54	105	0	0	0	0	0
	1:15 PM	0	7	0	48	7	0	0	0	0	0	0	45	107	0	0	0	0	0
	1:30 PM	0	5	0	59	13	0	0	0	0	0	0	36	113	0	0	0	0	0
	1:45 PM	0	6	0	46	4	0	0	0	0	0	0	43	99	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	38	1	334	62	0	0	0	0	1	0	308	744	0	0	0	0	0
	APPROACH %	0%	97%	3%	84%	16%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	39	/	346	396	/	63	0	/	335	309	/	0	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	0	19	0	193	34	0	0	0	0	0	0	178	424					
	APPROACH %	0%	100%	0%	85%	15%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.396			0.788			0.000			0.824		0.938					
	APP/DEPART	19	/	197	227	/	34	0	/	193	178	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	66	1	0	0	0	0	0	0	52	121	0	0	0	0	0
	4:15 PM	0	8	0	84	11	0	0	0	0	1	0	45	149	0	0	0	0	0
	4:30 PM	0	2	0	105	4	0	0	0	0	0	0	41	152	0	0	0	0	0
	4:45 PM	0	7	0	85	4	0	0	0	0	0	0	49	145	0	0	0	0	0
	5:00 PM	1	4	0	93	12	0	0	0	0	0	0	53	163	1	0	0	0	1
	5:15 PM	0	8	0	102	10	0	0	0	0	0	0	43	163	0	0	0	0	0
	5:30 PM	0	6	1	70	19	0	0	0	0	1	0	37	134	0	0	0	0	0
	5:45 PM	0	7	0	79	10	0	0	0	0	0	0	35	131	0	0	0	0	0
	VOLUMES	1	44	1	684	71	0	0	0	0	2	0	355	1,158	1	0	0	0	1
	APPROACH %	2%	96%	2%	91%	9%	0%	0%	0%	0%	1%	0%	99%						
	APP/DEPART	46	/	399	755	/	74	0	/	685	357	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	1	21	0	385	30	0	0	0	0	0	0	186	623					
	APPROACH %	5%	95%	0%	93%	7%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.688			0.926			0.000			0.877		0.956					
	APP/DEPART	22	/	207	415	/	31	0	/	385	186	/	0	0					

Nevada

NORTH SIDE

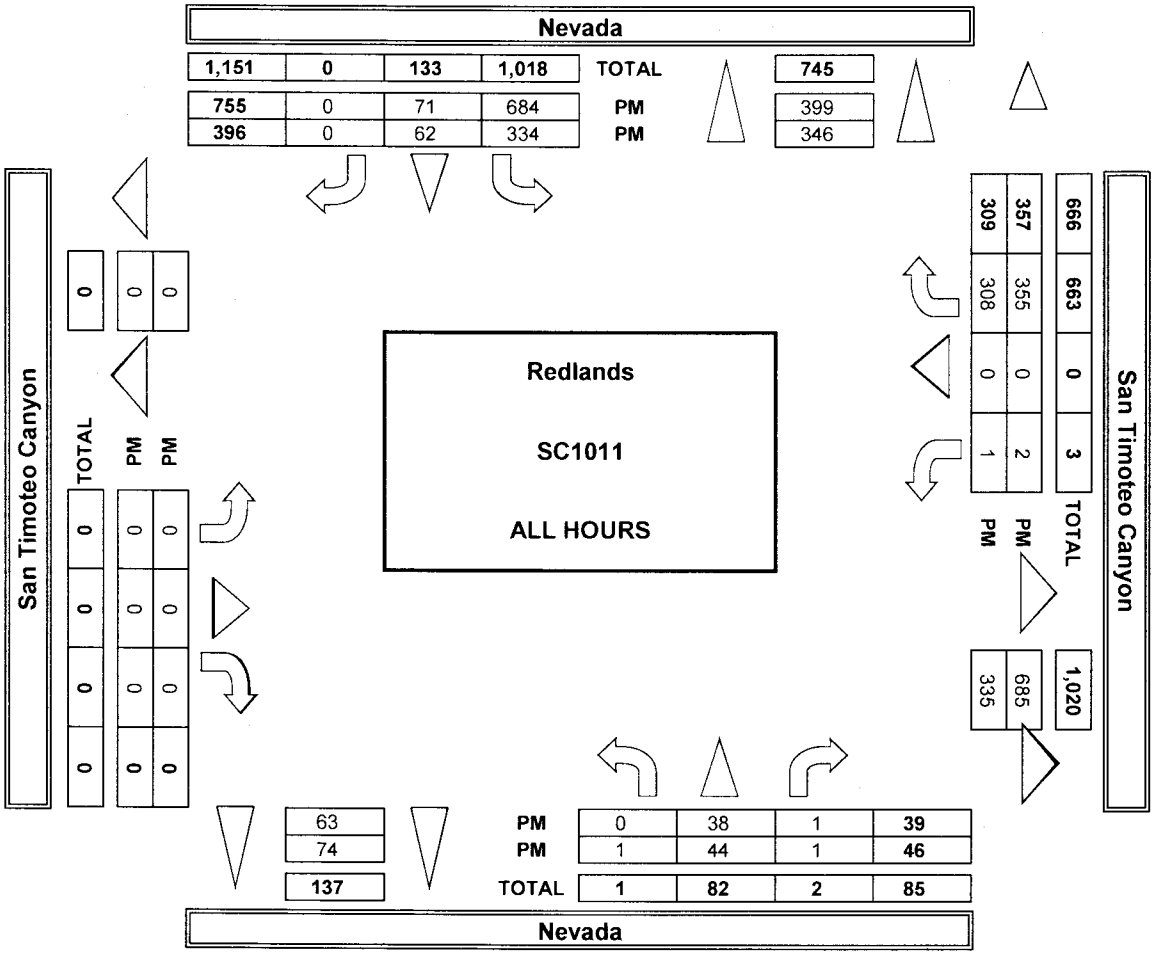
San Timoteo Canyon WEST SIDE EAST SIDE **San Timoteo Canyon**

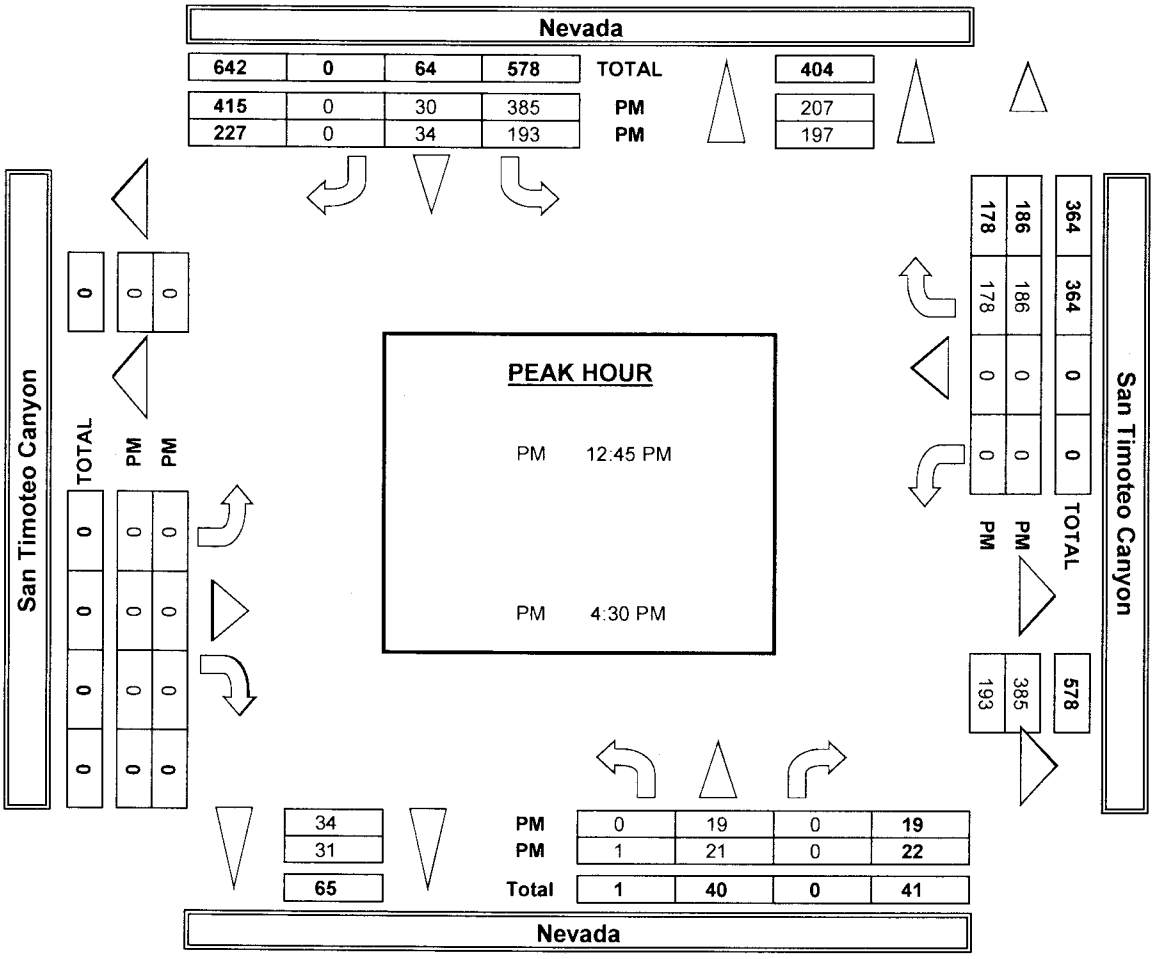
SOUTH SIDE

Nevada

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
6/24/16	LOCATION:	Redlands	PROJECT #:	SC1011
FRIDAY	NORTH & SOUTH:	Nevada	LOCATION #:	2
	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 1: PASSENGER VEHICLES

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	1	0	17	5	0	0	0	0	0	0	19	42	0	0	0	0	0
	12:15 PM	0	5	0	42	3	0	0	0	0	0	0	24	74	0	0	0	0	0
	12:30 PM	0	2	0	31	11	0	0	0	0	1	0	37	82	0	0	0	0	0
	12:45 PM	0	11	1	35	8	0	0	0	0	0	0	34	89	0	0	0	0	0
	1:00 PM	0	1	0	39	10	0	0	0	0	0	0	47	97	0	0	0	0	0
	1:15 PM	0	6	0	39	7	0	0	0	0	0	0	38	90	0	0	0	0	0
	1:30 PM	0	5	0	57	12	0	0	0	0	0	0	35	109	0	0	0	0	0
	1:45 PM	0	6	0	44	4	0	0	0	0	0	0	38	92	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	37	1	304	60	0	0	0	0	1	0	272	675	0	0	0	0	0
	APPROACH %	0%	97%	3%	84%	16%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	38	/	309	364	/	61	0	/	305	273	/	0	0					
	BEGIN PEAK HR		1:00 PM																
	VOLUMES	0	18	0	179	33	0	0	0	0	0	0	158	388					
	APPROACH %	0%	100%	0%	84%	16%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.750			0.768			0.000			0.840		0.890					
	APP/DEPART	18	/	176	212	/	33	0	/	179	158	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	0	65	1	0	0	0	0	0	0	47	115	0	0	0	0	0
	4:15 PM	0	8	0	79	10	0	0	0	0	1	0	40	138	0	0	0	0	0
	4:30 PM	0	1	0	100	4	0	0	0	0	0	0	38	143	0	0	0	0	0
	4:45 PM	0	7	0	82	4	0	0	0	0	0	0	48	141	0	0	0	0	0
	5:00 PM	1	4	0	92	12	0	0	0	0	0	0	48	157	1	0	0	0	1
	5:15 PM	0	8	0	99	10	0	0	0	0	0	0	42	159	0	0	0	0	0
	5:30 PM	0	6	1	67	19	0	0	0	0	1	0	35	129	0	0	0	0	0
	5:45 PM	0	7	0	78	10	0	0	0	0	0	0	34	129	0	0	0	0	0
	VOLUMES	1	43	1	662	70	0	0	0	0	2	0	332	1,111	1	0	0	0	1
	APPROACH %	2%	96%	2%	90%	10%	0%	0%	0%	0%	1%	0%	99%						
	APP/DEPART	45	/	375	732	/	73	0	/	663	334	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	20	0	373	30	0	0	0	0	0	0	176	600					
	APPROACH %	0%	95%	0%	93%	7%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.656			0.924			0.000			0.917		0.943					
	APP/DEPART	21	/	196	403	/	31	0	/	373	176	/	0	0					

Nevada

NORTH SIDE

San Timoteo Canyon WEST SIDE

EAST SIDE **San Timoteo Canyon**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	2
FRIDAY	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	12:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
	12:45 PM	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	1:15 PM	0	1	0	2	0	0	0	0	0	0	0	2	5	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	10	0	0	0	0	0	0	0	8	19	0	0	0	0	0
	APPROACH %	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	1	/	9	10	/	0	0	/	10	8	/	0	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	0	1	0	4	0	0	0	0	0	0	0	8	13					
	APPROACH %	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.250			0.500			0.000			0.667		0.650					
	APP/DEPART	1	/	9	4	/	0	0	/	4	8	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	4:15 PM	0	0	0	0	1	0	0	0	0	0	0	2	3	0	0	0	0	0
	4:30 PM	0	1	0	2	0	0	0	0	0	0	0	1	4	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	5:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	7	1	0	0	0	0	0	0	5	14	0	0	0	0	0
	APPROACH %	0%	100%	0%	88%	13%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	1	/	6	8	/	1	0	/	7	5	/	0	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	1	0	3	1	0	0	0	0	0	0	4	9					
	APPROACH %	0%	100%	0%	75%	25%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.250			0.500			0.000			0.500		0.563					
	APP/DEPART	1	/	5	4	/	1	0	/	3	4	/	0	0					

Nevada

NORTH SIDE

San Timoteo Canyon WEST SIDE EAST SIDE **San Timoteo Canyon**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	2
FRIDAY	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 3: 3-AXLE TRUCKS

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	12:45 PM	0	0	0	0	1	0	0	0	0	0	0	2	3	0	0	0	0	0
	1:00 PM	0	0	0	1	0	0	0	0	0	0	0	3	4	0	0	0	0	0
	1:15 PM	0	0	0	5	0	0	0	0	0	0	0	2	7	0	0	0	0	0
	1:30 PM	0	0	0	2	1	0	0	0	0	0	0	1	4	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	10	2	0	0	0	0	0	0	12	24	0	0	0	0	0
	APPROACH %	0%	0%	0%	83%	17%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	12	12	/	2	0	/	10	12	/	0	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	0	0	0	8	2	0	0	0	0	0	0	8	18					
	APPROACH %	0%	0%	0%	80%	20%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.500			0.000			0.667		0.643					
	APP/DEPART	0	/	8	10	/	2	0	/	8	8	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	4:15 PM	0	0	0	2	0	0	0	0	0	0	0	1	3	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	5	0	0	0	0	0	0	0	5	10	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	5	5	/	0	0	/	5	5	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	4	0	0	0	0	0	0	0	3	7					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.500			0.000			0.375		0.583					
	APP/DEPART	0	/	3	4	/	0	0	/	4	3	/	0	0					

Nevada

NORTH SIDE

San Timoteo Canyon WEST SIDE

EAST SIDE **San Timoteo Canyon**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	2
FRIDAY	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	12:15 PM	0	0	0	3	0	0	0	0	0	0	0	2	5	0	0	0	0	0
	12:30 PM	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0
	12:45 PM	0	0	0	1	0	0	0	0	0	0	0	2	3	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
	1:15 PM	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	1	0	0	0	0	0	0	0	2	3	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	9	0	0	0	0	0	0	0	14	23	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	14	9	/	0	0	/	9	14	/	0	0					
	BEGIN PEAK HR		12:15 PM																
	VOLUMES	0	0	0	6	0	0	0	0	0	0	0	9	15					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.500			0.000			0.750		0.750					
	APP/DEPART	0	/	9	6	/	0	0	/	6	9	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	4:15 PM	0	0	0	3	0	0	0	0	0	0	0	2	5	0	0	0	0	0
	4:30 PM	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0
	4:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
	5:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	5:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	VOLUMES	0	0	0	9	0	0	0	0	0	0	0	12	21	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	12	9	/	0	0	/	9	12	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	6	0	0	0	0	0	0	0	7	13					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.500			0.000			0.875		0.650					
	APP/DEPART	0	/	7	6	/	0	0	/	6	7	/	0	0					

Nevada

NORTH SIDE

San Timoteo Canyon WEST SIDE EAST SIDE **San Timoteo Canyon**

SOUTH SIDE

Nevada

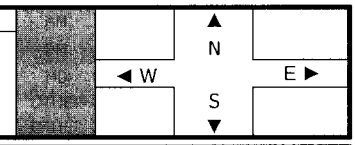
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	2
FRIDAY	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 5: RV

NOTES:



		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	1	/	0	0	/	1	0	/	0	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	0	1	0	0	0	0	0	0	0	0	1					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250					
	APP/DEPART	0	/	0	1	/	0	0	/	1	0	/	0	0					

Nevada

NORTH SIDE

San Timoteo Canyon WEST SIDE

EAST SIDE **San Timoteo Canyon**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

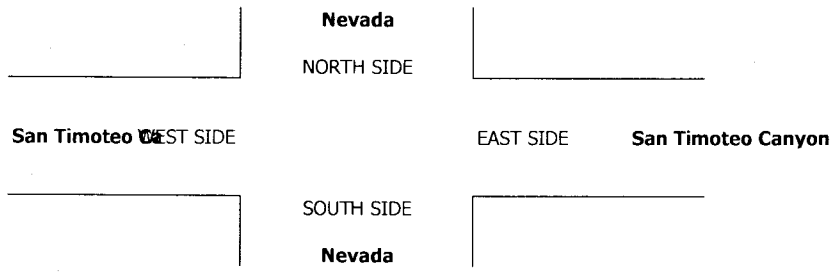
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	2
FRIDAY	EAST & WEST:	San Timoteo Canyon	CONTROL:	STOP N

CLASS 6:	NOTES:
BUSES	

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND San Timoteo Canyon			WESTBOUND San Timoteo Canyon				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	0	0	0	0	0	0	2	3	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	2	1	/	0	0	/	1	2	/	0	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	2	2					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.500		0.500					
	APP/DEPART	0	/	2	0	/	0	0	/	0	2	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	0	/	1	0	/	0	0	/	0	1	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	1	1					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250					
	APP/DEPART	0	/	1	0	/	0	0	/	0	1	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Fri, Jun 24, 16	LOCATION:	Redlands	PROJECT #:	SC1011
	NORTH & SOUTH:	Nevada	LOCATION #:	3
	EAST & WEST:	Beaumont	CONTROL:	STOP S

NOTES:

N ▲ ◄ W E ► S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
PM	12:00 PM	0	0	0	0	0	5	1	21	0	0	11	1	39	0	0	0	0	0
	12:15 PM	0	0	0	0	0	3	4	13	0	0	11	0	31	0	0	0	0	0
	12:30 PM	0	0	0	1	0	12	1	8	0	0	13	2	37	0	0	0	0	0
	12:45 PM	0	0	0	3	0	3	9	17	0	0	13	2	47	0	0	0	0	0
	1:00 PM	0	0	0	2	0	8	2	5	0	0	11	0	28	0	0	0	0	0
	1:15 PM	0	0	0	0	0	7	4	16	0	0	9	0	36	0	0	0	0	0
	1:30 PM	0	0	0	5	0	8	3	17	0	0	8	2	43	0	0	0	0	0
	1:45 PM	0	0	0	2	0	3	8	17	0	0	5	0	35	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	13	0	49	32	114	0	0	81	7	296	0	0	0	0	0
	APPROACH %	0%	0%	0%	21%	0%	79%	22%	78%	0%	0%	92%	8%						
	APP/DEPART	0	/	39	62	/	0	146	/	127	88	/	130	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	10	0	26	18	55	0	0	41	4	154					
	APPROACH %	0%	0%	0%	28%	0%	72%	25%	75%	0%	0%	91%	9%						
	PEAK HR FACTOR		0.000			0.692			0.702			0.750		0.819					
	APP/DEPART	0	/	22	36	/	0	73	/	65	45	/	67	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	4	3	19	0	0	10	0	36	0	0	0	0	0
	4:15 PM	0	0	0	1	0	11	7	26	0	0	10	0	55	0	0	0	0	0
	4:30 PM	0	0	0	0	0	4	2	27	0	0	8	0	41	0	0	0	0	0
	4:45 PM	0	0	0	0	0	5	8	25	0	0	17	0	55	0	0	0	0	0
	5:00 PM	0	0	0	2	0	12	3	26	0	0	20	2	65	0	0	0	0	0
	5:15 PM	0	0	0	2	0	9	7	28	0	0	8	0	54	0	0	0	0	0
	5:30 PM	0	0	1	4	0	11	8	28	0	0	12	1	65	0	0	0	0	0
	5:45 PM	0	0	0	4	0	8	3	24	0	0	15	0	54	0	1	0	0	1
	VOLUMES	0	0	1	13	0	64	41	203	0	0	100	3	425	0	1	0	0	1
	APPROACH %	0%	0%	100%	17%	0%	83%	17%	83%	0%	0%	97%	3%						
	APP/DEPART	1	/	45	77	/	0	244	/	216	103	/	164	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	1	8	0	37	26	107	0	0	57	3	239					
	APPROACH %	0%	0%	100%	18%	0%	82%	20%	80%	0%	0%	95%	5%						
	PEAK HR FACTOR		0.250			0.750			0.924			0.682		0.919					
	APP/DEPART	1	/	29	45	/	0	133	/	116	60	/	94	0					

Nevada

NORTH SIDE

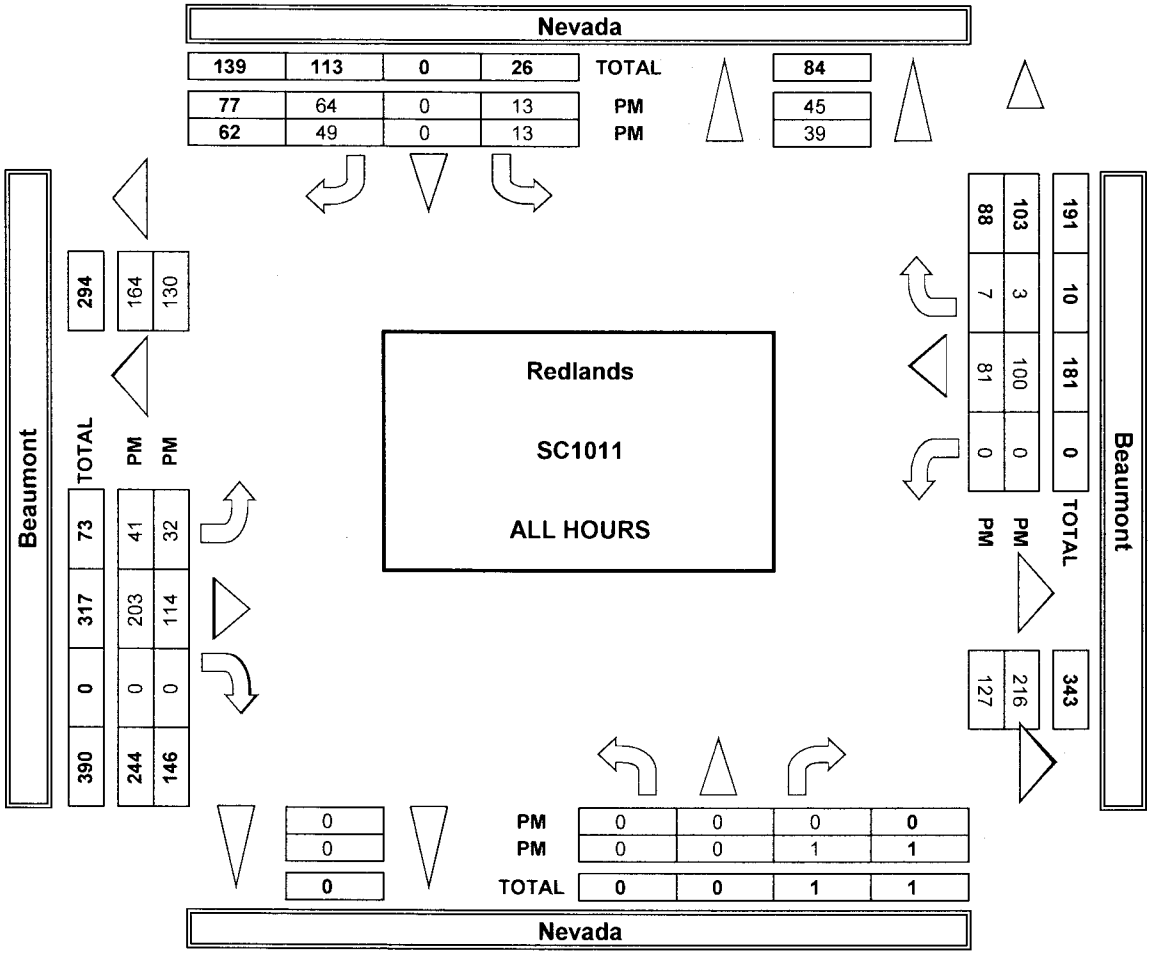
Beaumont WEST SIDE EAST SIDE **Beaumont**

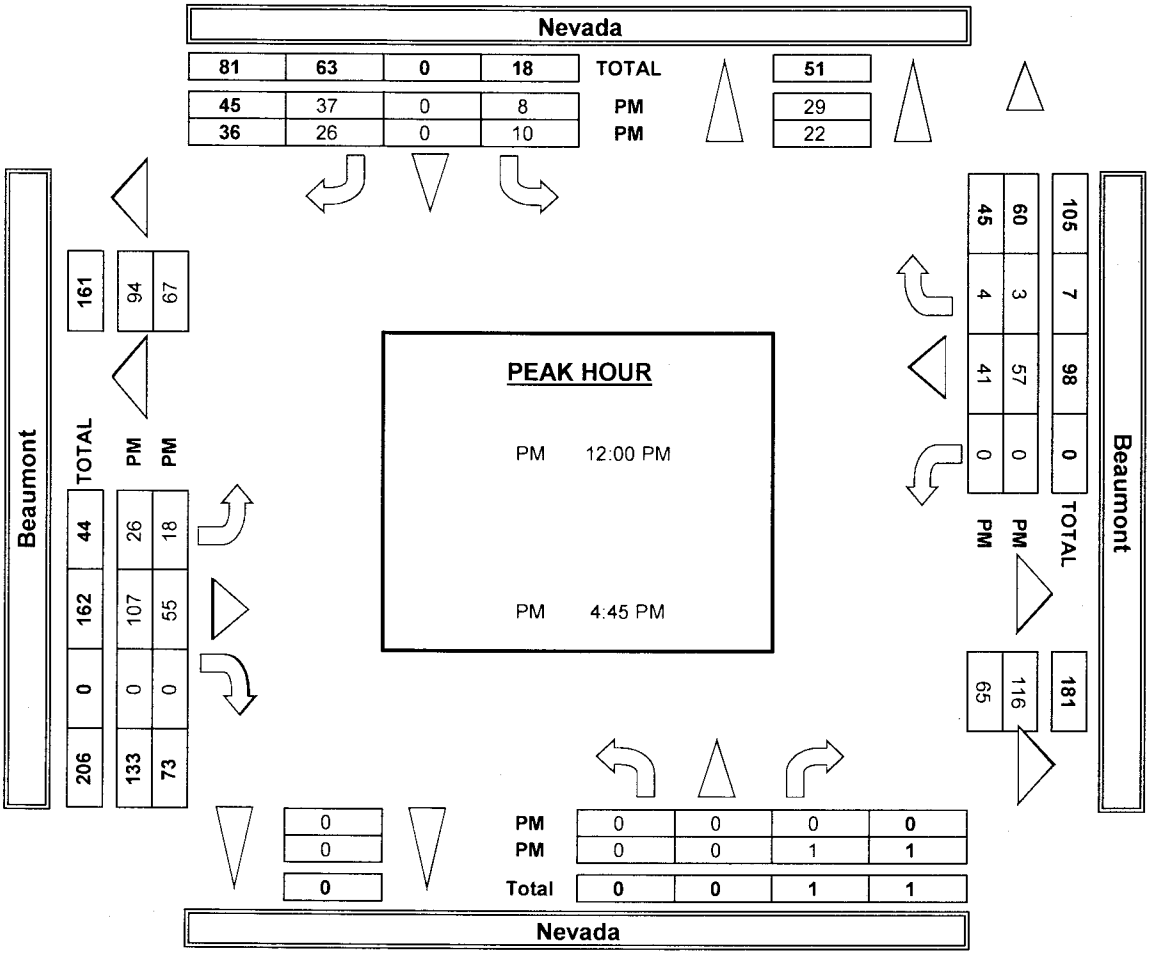
SOUTH SIDE

Nevada

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 1: PASSENGER VEHICLES

NOTES:

▲ N ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	5	1	21	0	0	10	1	38	0	0	0	0	0
	12:15 PM	0	0	0	0	0	3	4	12	0	0	10	0	29	0	0	0	0	0
	12:30 PM	0	0	0	1	0	12	1	8	0	0	13	2	37	0	0	0	0	0
	12:45 PM	0	0	0	2	0	3	9	17	0	0	12	2	45	0	0	0	0	0
	1:00 PM	0	0	0	2	0	8	1	5	0	0	11	0	27	0	0	0	0	0
	1:15 PM	0	0	0	0	0	7	4	16	0	0	9	0	36	0	0	0	0	0
	1:30 PM	0	0	0	4	0	8	3	17	0	0	8	2	42	0	0	0	0	0
	1:45 PM	0	0	0	2	0	3	8	16	0	0	5	0	34	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	11	0	49	31	112	0	0	78	7	288	0	0	0	0	0
	APPROACH %	0%	0%	0%	18%	0%	82%	22%	78%	0%	0%	92%	8%						
	APP/DEPART	0	/	38	60	/	0	143	/	123	85	/	127	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	0	0	0	8	0	26	17	55	0	0	40	4	150					
	APPROACH %	0%	0%	0%	24%	0%	76%	24%	76%	0%	0%	91%	9%						
	PEAK HR FACTOR		0.000			0.708			0.692			0.786		0.833					
	APP/DEPART	0	/	21	34	/	0	72	/	63	44	/	66	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	4	3	19	0	0	10	0	36	0	0	0	0	0
	4:15 PM	0	0	0	1	0	10	7	25	0	0	10	0	53	0	0	0	0	0
	4:30 PM	0	0	0	0	0	4	1	27	0	0	8	0	40	0	0	0	0	0
	4:45 PM	0	0	0	0	0	5	8	24	0	0	17	0	54	0	0	0	0	0
	5:00 PM	0	0	0	2	0	12	3	26	0	0	20	2	65	0	0	0	0	0
	5:15 PM	0	0	0	2	0	9	7	27	0	0	8	0	53	0	0	0	0	0
	5:30 PM	0	0	1	4	0	11	8	27	0	0	12	1	64	0	0	0	0	0
	5:45 PM	0	0	0	4	0	8	3	24	0	0	15	0	54	0	1	0	0	1
	VOLUMES	0	0	1	13	0	63	40	199	0	0	100	3	419	0	1	0	0	1
	APPROACH %	0%	0%	100%	17%	0%	83%	17%	83%	0%	0%	97%	3%						
	APP/DEPART	1	/	44	76	/	0	239	/	212	103	/	163	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	1	11	0	40	21	104	0	0	55	3	236					
	APPROACH %	0%	0%	100%	21%	0%	77%	17%	83%	0%	0%	95%	5%						
	PEAK HR FACTOR		0.250			0.867			0.893			0.659		0.908					
	APP/DEPART	1	/	25	52	/	0	125	/	116	58	/	95	0					

Nevada

NORTH SIDE

Beaumont WEST SIDE

EAST SIDE **Beaumont**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 2:	NOTES:
2-AXLE WORK VEHICLES/ TRUCKS	

▲ N
◄ W E ►
S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%						
	APP/DEPART	0	/	1	0	/	0	1	/	0	1	/	1	0					
	BEGIN PEAK HR		12:15 PM																
	VOLUMES	0	0	0	0	0	0	1	0	0	0	1	0	2					
	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.000			0.250			0.250		0.500					
	APP/DEPART	0	/	1	0	/	0	1	/	0	1	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	1	1	0	0	0	0	3	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	50%	50%	0%	0%	0%	0%						
	APP/DEPART	0	/	1	1	/	0	2	/	1	0	/	1	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	0	0	0	1	1	0	0	0	0	0	2					
	APPROACH %	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.250			0.250			0.000		0.500					
	APP/DEPART	0	/	1	1	/	0	1	/	0	0	/	1	0					

Nevada

NORTH SIDE

Beaumont WEST SIDE

EAST SIDE **Beaumont**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

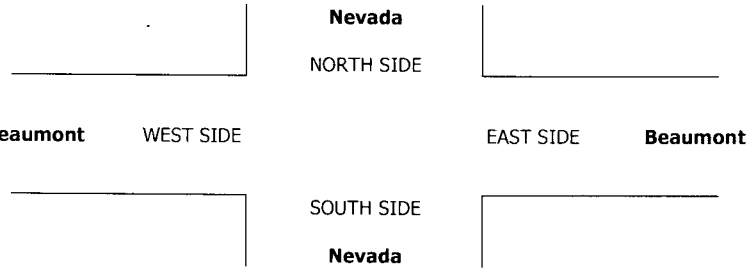
DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 3: 3-AXLE TRUCKS

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	2	0	0	0	2	0	0	2	0	6	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	2	/	0	2	/	4	2	/	2	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	1	0	0	0	1	0	0	2	0	4					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.250			0.250			0.500		0.500					
	APP/DEPART	0	/	0	1	/	0	1	/	2	2	/	2	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	2	/	2	0	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	0	0	0	0	2	0	0	0	0	2					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.500			0.000		0.500					
	APP/DEPART	0	/	0	0	/	0	2	/	2	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

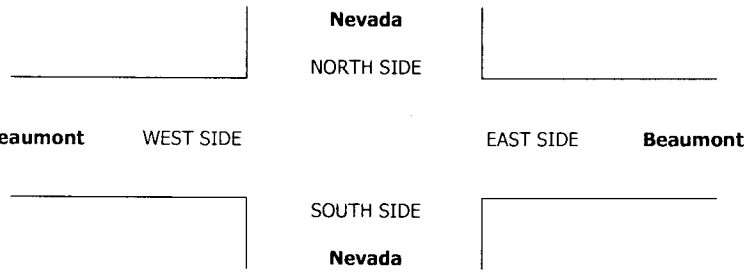
DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250					
	APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 5:
RV

NOTES:

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					

Nevada

NORTH SIDE

Beaumont WEST SIDE EAST SIDE **Beaumont**

SOUTH SIDE

Nevada

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Redlands	PROJECT #:	SC1011
6/24/16	NORTH & SOUTH:	Nevada	LOCATION #:	3
FRIDAY	EAST & WEST:	Beaumont	CONTROL:	STOP S

CLASS 6:	NOTES:
BUSES	

N ▲ ◄ W E ► S ▼

		NORTHBOUND Nevada			SOUTHBOUND Nevada			EASTBOUND Beaumont			WESTBOUND Beaumont				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB	SB	EB	WB	TTL
PM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					

Nevada

NORTH SIDE

Beaumont WEST SIDE

EAST SIDE **Beaumont**

SOUTH SIDE

Nevada

APPENDIX C

Future Growth Increment Calculation Worksheets

San Timoteo Canyon Road (NS) / Barton Road (EW) - #1

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):							
2016			0	0	0		
			<	v	>		
	0	^				^	0
	746	>				<	723
	110	v				v	77
			<	^	>		
			102	0	69		
EXISTING PEAK HOUR COUNT YEAR (AUTOS):							
2016				0	0		
				v	^		
		825	<	IN =	1827	<	800
		856	>	OUT =	1827	>	815
				v	^		
				187	171		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs)							
			0	0	0		
			<	v	>		
	0	^				^	0
	26	>				<	31
	31	v				v	9
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2.0 4+: 3.0			36	0	25		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):							
2016			0	0	0		
			<	v	>		
	0	^				^	0
	772	>				<	754
	141	v				v	86
			<	^	>		
			138	0	94		
EXISTING PEAK PERIOD MODEL YEAR (AUTO).							
2012				0	0		
				v	^		
		3096	<	IN =	6420	<	2161
		2822	>	OUT =	6421	>	1831
				v	^		
				1494	1437		
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2012				0	0		
				v	^		
		0	<	IN =	0	<	0
		0	>	OUT =	0	>	0
				v	^		
				0	0		
EXISTING PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.38				0	0		
PHF FOR TRUCKS: 0.333				v	^		
		1176	<	IN =	2440	<	821
		1072	>	OUT =	2440	>	696
				v	^		
				568	546		
FUTURE PEAK PERIOD MODEL YEAR (AUTO):							
2040				0	0		
				v	^		
		4011	<	IN =	9865	<	2969
		5269	>	OUT =	9866	>	4132
				v	^		
				1723	1627		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2040				0	0		
				v	^		
		0	<	IN =	0	<	0
		0	>	OUT =	0	>	0
				v	^		
				0	0		
FUTURE PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.38				0	0		
PHF FOR TRUCKS: 0.333				v	^		
		1524	<	IN =	3749	<	1128
		2002	>	OUT =	3749	>	1570
				v	^		
				655	618		
RAW GROWTH (PCEs): 2012 TO 2040							
CONVERSION OF TRUCKS TO: 2040				0	0		
FACTOR = 1.00				v	^		
		348	<			<	307
		930	>			>	874
				v	^		
				87	72		
ADJUSTED GROWTH (PCEs): 2012 TO 2040							
10 MINIMUM GROWTH %				0	0		
				v	^		
		350	<	IN =	1310	<	310
		930	>	OUT =	1310	>	870
				v	^		
				90	70		
PRORATED GROWTH (PCEs): 2016 TO 2040							
24 YEARS				0	0		
				v	^		
		300	<			<	270
		800	>			>	750
				v	^		
				80	60		
NEW PROJECTED VOLUMES (PCEs): 2040							
				0	0		
				v	^		
		1190	<			<	1110
		1710	>			>	1620
				v	^		
				310	290		
YEAR 2018 GROWTH: 2016 TO 2018							
2 YEARS				0	0		
				v	^		
		30	<			<	20
		70	>			>	60
				v	^		
				10	10		
INITIAL YEAR 2018 VOLUMES:							
2018				0	0		
				v	^		
		920	<	IN =	2080	<	860
		980	>	OUT =	2090	>	930
				v	^		
				240	240		
BALANCED YEAR 2018 VOLUMES:							
2018				0	0		
				v	^		
		920	<	IN =	2080	<	860
		980	>	OUT =	2090	>	930
				v	^		
				240	240		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):							
2016			0	0	0		
			<	v	>		
	1	^				^	0
	1059	>				<	649
	256	v				v	144
			<	^	>		
			116	0	83		
EXISTING PEAK HOUR COUNT YEAR (AUTOS):							
2016				0	1		
				v	^		
		765	<	IN =	2308	<	793
		1316	>	OUT =	2308	>	1142
				v	^		
				400	199		
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):							
			0	0	0		
			<	v	>		
	0	^				^	0
	30	>				<	25
	21	v				v	2
PCE FACTORS BY AXLE:			<	^	>		
2: 1.5 3: 2 4+: 3.0			17	0	10		
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):							
2016			0	0	0		
			<	v	>		
	1	^				^	0
	1089	>				<	674
	277	v				v	146
			<	^	>		
			133	0	93		
EXISTING PEAK PERIOD MODEL YEAR (AUTO):							
2012				0	0		
				v	^		
		2615	<	IN =	6018	<	1691
		2923	>	OUT =	6018	>	2031
				v	^		
				1372	1404		
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2012				0	0		
				v	^		
		0	<	IN =	0	<	0
		0	>	OUT =	0	>	0
				v	^		
				0	0		
EXISTING PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.28				0	0		
PHF FOR TRUCKS: 0.25				v	^		
		732	<	IN =	1685	<	473
		818	>	OUT =	1685	>	569
				v	^		
				384	393		
FUTURE PEAK PERIOD MODEL YEAR (AUTO):							
2040				0	0		
				v	^		
		4011	<	IN =	9865	<	2969
		5269	>	OUT =	9866	>	4132
				v	^		
				1723	1627		
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):							
2040				0	0		
				v	^		
		0	<	IN =	0	<	0
		0	>	OUT =	0	>	0
				v	^		
				0	0		
FUTURE PEAK HOUR MODEL YEAR (PCEs):							
PHF FOR CARS: 0.28				0	0		
PHF FOR TRUCKS: 0.25				v	^		
		1123	<	IN =	2762	<	831
		1475	>	OUT =	2762	>	1157
				v	^		
				482	456		
RAW GROWTH (PCEs): 2012 TO 2040							
CONVERSION OF TRUCKS TO: 2040				0	0		
FACTOR = 1.00				v	^		
		391	<			<	358
		657	>			>	588
				v	^		
				98	62		
ADJUSTED GROWTH (PCEs): 2012 TO 2040							
10 MINIMUM GROWTH %				0	0		
				v	^		
		390	<	IN =	1080	<	360
		660	>	OUT =	1080	>	590
				v	^		
				100	60		
PRORATED GROWTH (PCEs): 2016 TO 2040							
24 YEARS				0	0		
				v	^		
		330	<			<	310
		570	>			>	510
				v	^		
				90	50		
NEW PROJECTED VOLUMES (PCEs): 2040							
				0	0		
				v	^		
		1140	<			<	1130
		1940	>			>	1690
				v	^		
				510	280		
YEAR 2018 GROWTH: 2016 TO 2018							
2 YEARS				0	0		
				v	^		
		30	<			<	30
		50	>			>	40
				v	^		
				10	0		
INITIAL YEAR 2018 VOLUMES:							
2018				0	0		
				v	^		
		840	<	IN =	2500	<	850
		1420	>	OUT =	2490	>	1220
				v	^		
				430	230		
BALANCED YEAR 2018 VOLUMES:							
2018				0	0		
				v	^		
		840	<	IN =	2500	<	850
		1420	>	OUT =	2490	>	1220
				v	^		
				430	230		

San Timoteo Canyon Road (NS) / Barton Road (EW) - #1

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL
NORTH	LEFT	**138**	SOUTH LEG		NORTH	LEFT	**133**	SOUTH LEG	
BOUND	THRU	**0**	IN ...	**240**	BOUND	THRU	**0**	IN ...	**230**
	RIGHT	**94**	OUT ...	**240**		RIGHT	**93**	OUT ...	**430**
SOUTH	LEFT	**0**	NORTH LEG		SOUTH	LEFT	**0**	NORTH LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**
EAST	LEFT	**0**	WEST LEG		EAST	LEFT	**1**	WEST LEG	
BOUND	THRU	**772**	IN ...	**980**	BOUND	THRU	**1,089**	IN ...	**1,420**
	RIGHT	**141**	OUT ...	**920**		RIGHT	**277**	OUT ...	**840**
WEST	LEFT	**86**	EAST LEG		WEST	LEFT	**146**	EAST LEG	
BOUND	THRU	**754**	IN ...	**860**	BOUND	THRU	**674**	IN ...	**850**
	RIGHT	**0**	OUT ...	**930**		RIGHT	**0**	OUT ...	**1,220**

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**138**	**144**	NORTH LEG	NORTH	LEFT	**133**	**137**	NORTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**94**	**97**	ADT 0		RIGHT	**93**	**94**	ADT 0
SOUTH	LEFT	**0**	**0**	SOUTH LEG	SOUTH	LEFT	**0**	**0**	SOUTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
EAST	LEFT	**0**	**0**	EAST LEG	EAST	LEFT	**1**	**1**	EAST LEG
BOUND	THRU	**772**	**833**	RATIO -	BOUND	THRU	**1,089**	**1,128**	RATIO -
	RIGHT	**141**	**152**	ADT 0		RIGHT	**277**	**285**	ADT 0
WEST	LEFT	**86**	**88**	WEST LEG	WEST	LEFT	**146**	**147**	WEST LEG
BOUND	THRU	**754**	**776**	RATIO -	BOUND	THRU	**674**	**703**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0

San Timoteo Canyon Road (NS) / Barton Road (EW) - #1

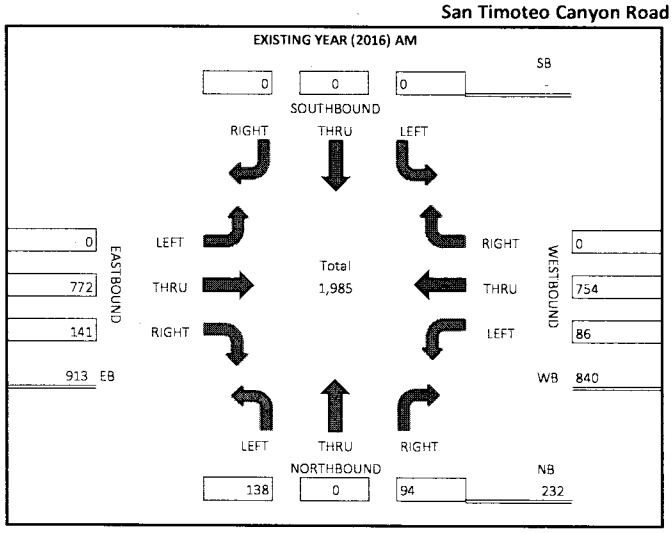
FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

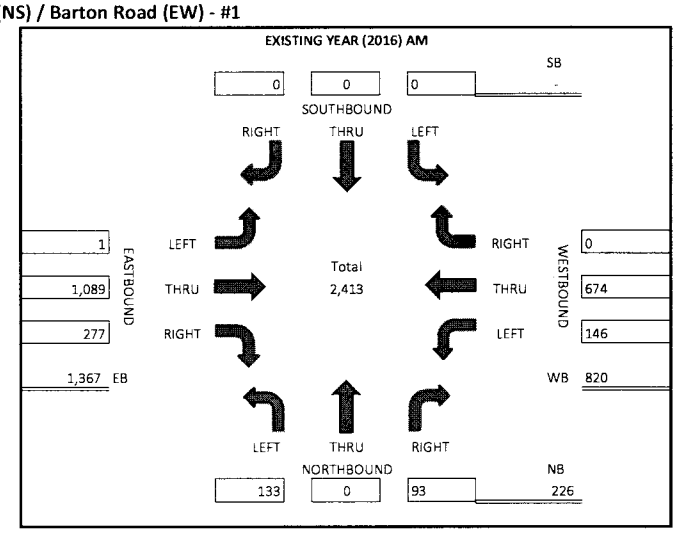
NCHRP 255

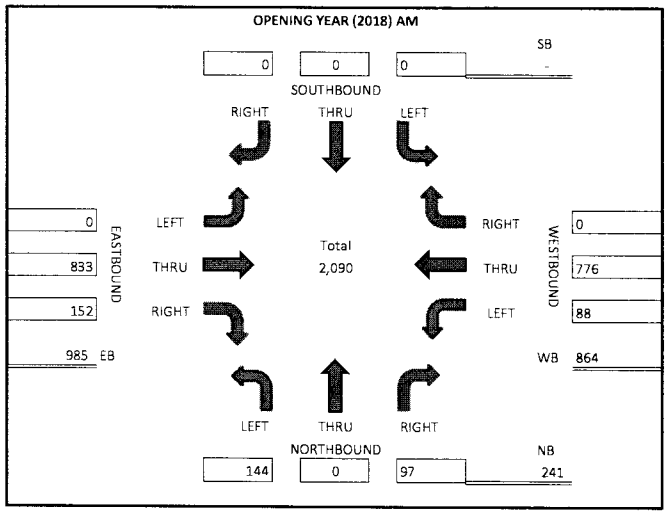
YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**138**	SOUTH LEG		NORTH	LEFT	**133**	SOUTH LEG	
BOUND	THRU	**0**	IN ...	**290**	BOUND	THRU	**0**	IN ...	**280**
	RIGHT	**94**	OUT ...	**310**		RIGHT	**93**	OUT ...	**510**
SOUTH	LEFT	**0**	NORTH LEG		SOUTH	LEFT	**0**	NORTH LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**
EAST	LEFT	**0**	WEST LEG		EAST	LEFT	**1**	WEST LEG	
BOUND	THRU	**772**	IN ...	**1,710**	BOUND	THRU	**1,089**	IN ...	**1,940**
	RIGHT	**141**	OUT ...	**1,190**		RIGHT	**277**	OUT ...	**1,140**
WEST	LEFT	**86**	EAST LEG		WEST	LEFT	**146**	EAST LEG	
BOUND	THRU	**754**	IN ...	**1,110**	BOUND	THRU	**674**	IN ...	**1,130**
	RIGHT	**0**	OUT ...	**1,620**		RIGHT	**0**	OUT ...	**1,690**

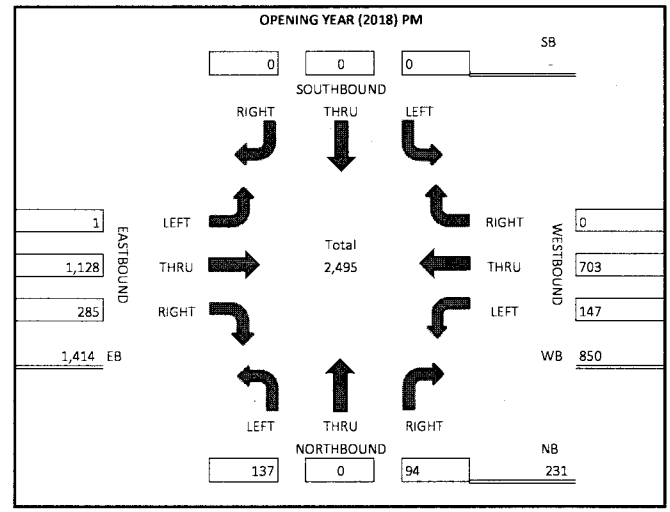
YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**138**	**171**	NORTH LEG	NORTH	LEFT	**133**	**172**	NORTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**94**	**120**	ADT 0		RIGHT	**93**	**108**	ADT 0
SOUTH	LEFT	**0**	**0**	SOUTH LEG	SOUTH	LEFT	**0**	**0**	SOUTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
EAST	LEFT	**0**	**0**	EAST LEG	EAST	LEFT	**1**	**1**	EAST LEG
BOUND	THRU	**772**	**1,500**	RATIO -	BOUND	THRU	**1,089**	**1,582**	RATIO -
	RIGHT	**141**	**216**	ADT 0		RIGHT	**277**	**348**	ADT 0
WEST	LEFT	**86**	**95**	WEST LEG	WEST	LEFT	**146**	**162**	WEST LEG
BOUND	THRU	**754**	**1,019**	RATIO -	BOUND	THRU	**674**	**968**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0

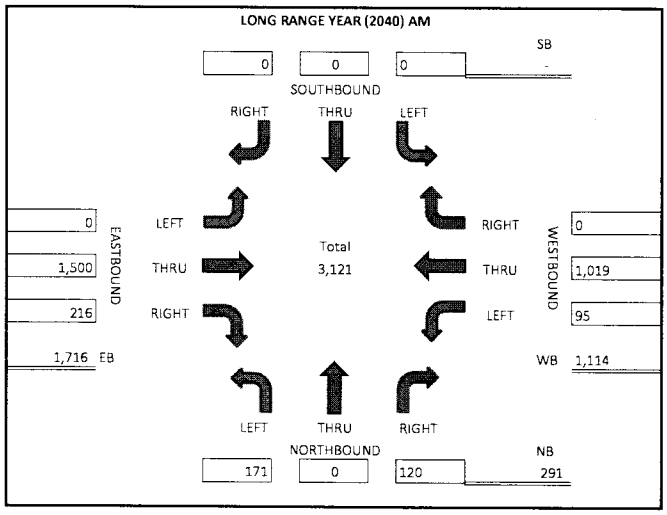
San Timoteo Canyon Road (NS) / Barton Road (EW) - #1

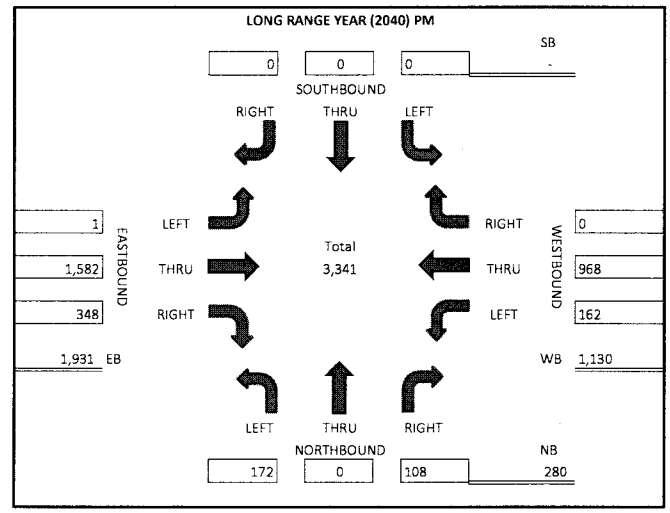












San Timoteo Canyon Road/Nevada Street (NS) / San Timoteo Canyon Road (EW) - #2

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2016

		0	37	170	
		<	v	>	
0	^				^ 154
0	>				< 0
0	v				v 0
		<	^	>	
		0	23	1	

EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2016

			207	177		
			v	^		
0	<	IN =	385		<	154
0	>	OUT =	385		>	171
			v	^		
			37	24		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):

		0	4	31	
		<	v	>	
0	^				^ 47
0	>				< 0
0	v				v 0
		<	^	>	
		0	2	0	

PCE FACTORS BY AXLE:
2: 1.5 3: 2.0 4+: 3.0

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2016

		0	41	201	
		<	v	>	
0	^				^ 201
0	>				< 0
0	v				v 0
		<	^	>	
		0	25	1	

EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2012

			1494	1437		
			v	^		
0	<	IN =	2932		<	1437
0	>	OUT =	2932		>	1494
			v	^		
			1	1		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2012

			0	0		
			v	^		
0	<	IN =	0		<	0
0	>	OUT =	0		>	0
			v	^		
			0	0		

EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38
PHF FOR TRUCKS: 0.333

			568	546		
			v	^		
0	<	IN =	1114		<	546
0	>	OUT =	1114		>	568
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040

			1723	1627		
			v	^		
0	<	IN =	3351		<	1627
0	>	OUT =	3351		>	1723
			v	^		
			1	1		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040

			0	0		
			v	^		
0	<	IN =	0		<	0
0	>	OUT =	0		>	0
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38
PHF FOR TRUCKS: 0.333

			655	618		
			v	^		
0	<	IN =	1273		<	618
0	>	OUT =	1273		>	655
			v	^		
			0	0		

RAW GROWTH (PCEs): 2012 TO 2040
CONVERSION OF TRUCKS TO: 2040
FACTOR = 1.00

			87	72		
			v	^		
0	<				<	72
0	>				>	87
			v	^		
			0	0		

ADJUSTED GROWTH (PCEs): 2012 TO 2040
10 MINIMUM GROWTH %

			90	70		
			v	^		
0	<	IN =	160		<	70
0	>	OUT =	160		>	90
			v	^		
			0	0		

PRORATED GROWTH (PCEs): 2016 TO 2040
24 YEARS

			80	60		
			v	^		
0	<				<	60
0	>				>	80
			v	^		
			0	0		

NEW PROJECTED VOLUMES (PCEs): 2040

			320	290		
			v	^		
0	<				<	260
0	>				>	280
			v	^		
			40	30		

YEAR 2018 GROWTH: 2016 TO 2018
2 YEARS

			10	10		
			v	^		
0	<				<	10
0	>				>	10
			v	^		
			0	0		

INITIAL YEAR 2018 VOLUMES:
2018

			250	240		
			v	^		
0	<	IN =	490		<	210
0	>	OUT =	490		>	210
			v	^		
			40	30		

BALANCED YEAR 2018 VOLUMES:
2018

			250	240		
			v	^		
0	<	IN =	490		<	210
0	>	OUT =	490		>	210
			v	^		
			40	30		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2016

		0	30	373	
		<	v	>	
0	^				^ 176
0	>				< 0
0	v				v 0
		<	^	>	
		1	20	0	

EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2016

			403	196		
			v	^		
1	<	IN =	600		<	176
0	>	OUT =	600		>	373
			v	^		
			30	21		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):

		0	0	25	
		<	v	>	
0	^				^ 25
0	>				< 0
0	v				v 0
		<	^	>	
		0	2	0	

PCE FACTORS BY AXLE:
2: 1.5 3: 2 4+: 3.0

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2016

		0	30	398	
		<	v	>	
0	^				^ 201
0	>				< 0
0	v				v 0
		<	^	>	
		1	22	0	

EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2012

			1372	1404		
			v	^		
0	<	IN =	2777		<	1404
0	>	OUT =	2777		>	1372
			v	^		
			1	1		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2012

			0	0		
			v	^		
0	<	IN =	0		<	0
0	>	OUT =	0		>	0
			v	^		
			0	0		

EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.25

			384	393		
			v	^		
0	<	IN =	778		<	393
0	>	OUT =	778		>	384
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040

			1723	1627		
			v	^		
0	<	IN =	3351		<	1627
0	>	OUT =	3351		>	1723
			v	^		
			1	1		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040

			0	0		
			v	^		
0	<	IN =	0		<	0
0	>	OUT =	0		>	0
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.25

			482	456		
			v	^		
0	<	IN =	938		<	456
0	>	OUT =	938		>	482
			v	^		
			0	0		

RAW GROWTH (PCEs): 2012 TO 2040
CONVERSION OF TRUCKS TO: 2040
FACTOR = 1.00

			98	62		
			v	^		
0	<				<	62
0	>				>	98
			v	^		
			0	0		

ADJUSTED GROWTH (PCEs): 2012 TO 2040
10 MINIMUM GROWTH %

			100	60		
			v	^		
0	<	IN =	160		<	60
0	>	OUT =	160		>	100
			v	^		
			0	0		

PRORATED GROWTH (PCEs): 2016 TO 2040
24 YEARS

			90	50		
			v	^		
0	<				<	50
0	>				>	90
			v	^		
			0	0		

NEW PROJECTED VOLUMES (PCEs): 2040

			520	270		
			v	^		
0	<				<	250
0	>				>	490
			v	^		
			30	20		

YEAR 2018 GROWTH: 2016 TO 2018
2 YEARS

			10	0		
			v	^		
0	<				<	0
0	>				>	10
			v	^		
			0	0		

INITIAL YEAR 2018 VOLUMES:
2018

			440	220		
			v	^		
0	<	IN =	660		<	200
0	>	OUT =	660		>	410
			v	^		
			30	20		

BALANCED YEAR 2018 VOLUMES:
2018

			440	220		
			v	^		
0	<	IN =	660		<	200
0	>	OUT =	660		>	410
			v	^		
			30	20		

San Timoteo Canyon Road/Nevada Street (NS) / San Timoteo Canyon Road (EW) - #2

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL
NORTH	LEFT	**0**	SOUTH LEG		NORTH	LEFT	**1**	SOUTH LEG	
BOUND	THRU	**25**	IN ...	**30**	BOUND	THRU	**22**	IN ...	**20**
	RIGHT	**1**	OUT ...	**40**		RIGHT	**0**	OUT ...	**30**
SOUTH	LEFT	**201**	NORTH LEG		SOUTH	LEFT	**398**	NORTH LEG	
BOUND	THRU	**41**	IN ...	**250**	BOUND	THRU	**30**	IN ...	**440**
	RIGHT	**0**	OUT ...	**240**		RIGHT	**0**	OUT ...	**220**
EAST	LEFT	**0**	WEST LEG		EAST	LEFT	**0**	WEST LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**
WEST	LEFT	**0**	EAST LEG		WEST	LEFT	**0**	EAST LEG	
BOUND	THRU	**0**	IN ...	**210**	BOUND	THRU	**0**	IN ...	**200**
	RIGHT	**201**	OUT ...	**210**		RIGHT	**201**	OUT ...	**410**

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**0**	**0**	NORTH LEG	NORTH	LEFT	**1**	**1**	NORTH LEG
BOUND	THRU	**25**	**29**	RATIO -	BOUND	THRU	**22**	**22**	RATIO -
	RIGHT	**1**	**1**	ADT 0		RIGHT	**0**	**0**	ADT 0
SOUTH	LEFT	**201**	**209**	SOUTH LEG	SOUTH	LEFT	**398**	**410**	SOUTH LEG
BOUND	THRU	**41**	**41**	RATIO -	BOUND	THRU	**30**	**30**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
EAST	LEFT	**0**	**0**	EAST LEG	EAST	LEFT	**0**	**0**	EAST LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
WEST	LEFT	**0**	**0**	WEST LEG	WEST	LEFT	**0**	**0**	WEST LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**201**	**211**	ADT 0		RIGHT	**201**	**203**	ADT 0

San Timoteo Canyon Road/Nevada Street (NS) / San Timoteo Canyon Road (EW) - #2

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

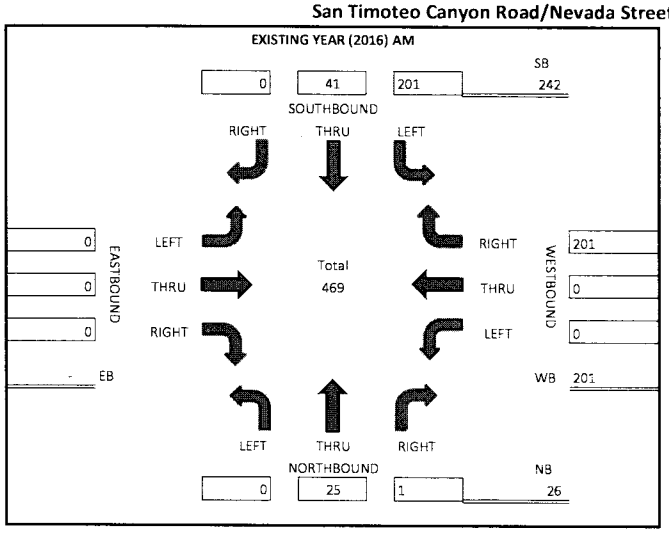
NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**0**	SOUTH LEG		NORTH	LEFT	**1**	SOUTH LEG	
BOUND	THRU	**25**	IN ...	**30**	BOUND	THRU	**22**	IN ...	**20**
	RIGHT	**1**	OUT ...	**40**		RIGHT	**0**	OUT ...	**30**
SOUTH	LEFT	**201**	NORTH LEG		SOUTH	LEFT	**398**	NORTH LEG	
BOUND	THRU	**41**	IN ...	**320**	BOUND	THRU	**30**	IN ...	**520**
	RIGHT	**0**	OUT ...	**290**		RIGHT	**0**	OUT ...	**270**
EAST	LEFT	**0**	WEST LEG		EAST	LEFT	**0**	WEST LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**0**	OUT ...	**0**
WEST	LEFT	**0**	EAST LEG		WEST	LEFT	**0**	EAST LEG	
BOUND	THRU	**0**	IN ...	**260**	BOUND	THRU	**0**	IN ...	**250**
	RIGHT	**201**	OUT ...	**280**		RIGHT	**201**	OUT ...	**490**

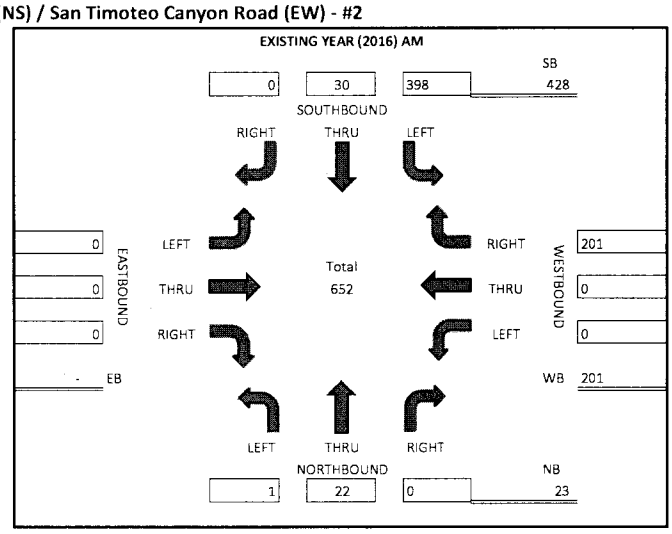
YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**0**	**0**	NORTH LEG	NORTH	LEFT	**1**	**1**	NORTH LEG
BOUND	THRU	**25**	**29**	RATIO -	BOUND	THRU	**22**	**24**	RATIO -
	RIGHT	**1**	**1**	ADT 0		RIGHT	**0**	**0**	ADT 0
SOUTH	LEFT	**201**	**279**	SOUTH LEG	SOUTH	LEFT	**398**	**490**	SOUTH LEG
BOUND	THRU	**41**	**45**	RATIO -	BOUND	THRU	**30**	**33**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
EAST	LEFT	**0**	**0**	EAST LEG	EAST	LEFT	**0**	**0**	EAST LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
WEST	LEFT	**0**	**0**	WEST LEG	WEST	LEFT	**0**	**0**	WEST LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**201**	**261**	ADT 0		RIGHT	**201**	**250**	ADT 0

San Timoteo Canyon Road/Nevada Street (NS) / San Timoteo Canyon Road (EW) - #2

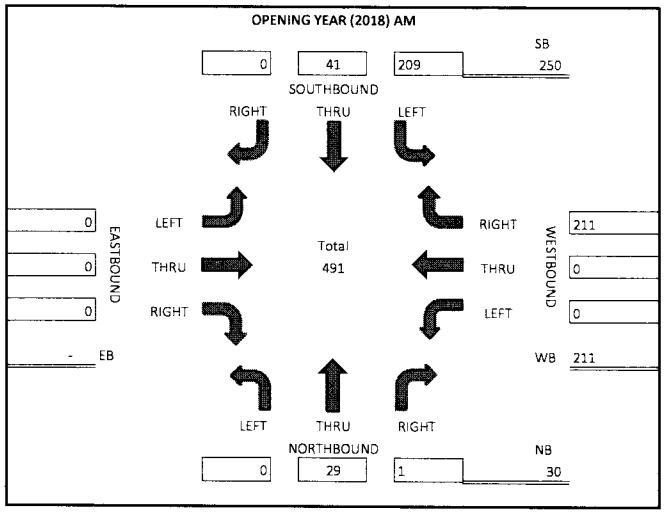
EXISTING YEAR (2016) AM



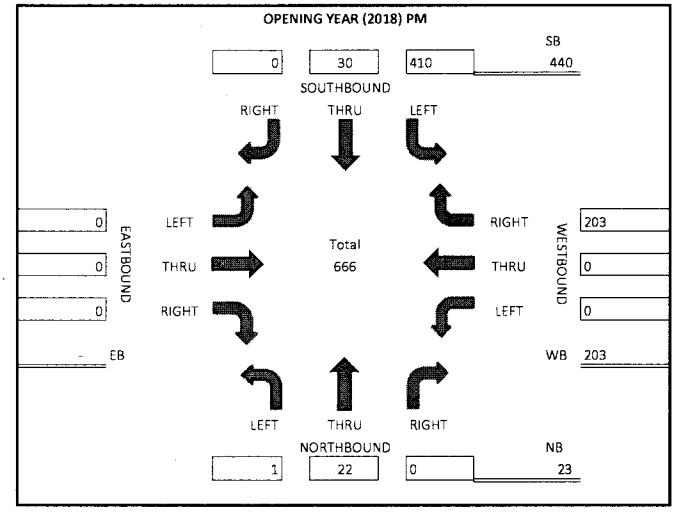
EXISTING YEAR (2016) AM



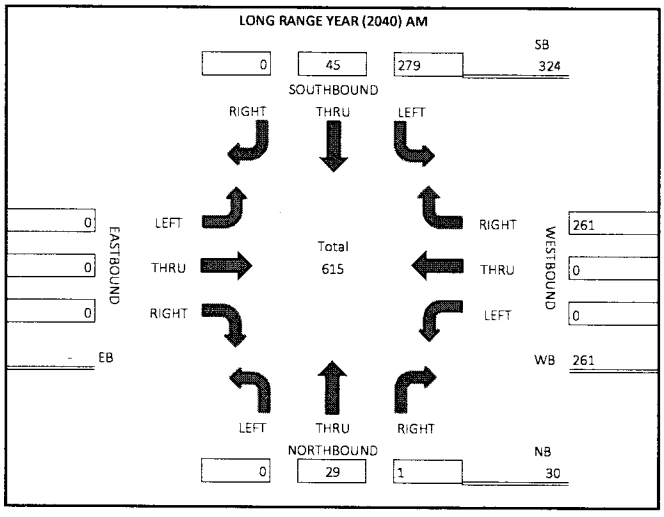
OPENING YEAR (2018) AM



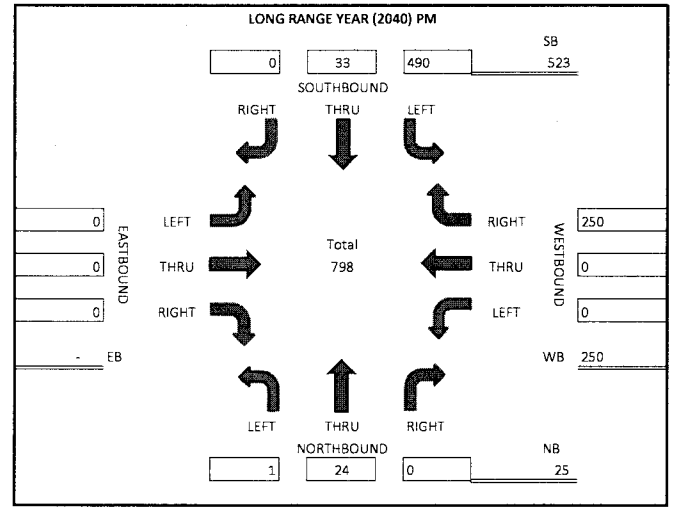
OPENING YEAR (2018) PM



LONG RANGE YEAR (2040) AM



LONG RANGE YEAR (2040) PM



Nevada Street (NS) / Beaumont Avenue (EW) - #5

MORNING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2016

		23	0	3		
		<	v	>		
15	^				^	5
58	>				<	45
0	v				v	0
		<	^	>		
		0	0	0		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2016

			26	20		
			v	^		
68	<	IN =		149	<	50
73	>	OUT =		149	>	61
			v	^		
			0	0		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs)

		0	0	2		
		<	v	>		
0	^				^	0
2	>				<	6
0	v				v	0
		<	^	>		
		0	0	0		

PCE FACTORS BY AXLE:
2: 1.5 3: 2.0 4+: 3.0

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2016

		23	0	5		
		<	v	>		
15	^				^	5
60	>				<	51
0	v				v	0
		<	^	>		
		0	0	0		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2012

			1	1		
			v	^		
165	<	IN =		323	<	165
157	>	OUT =		323	>	157
			v	^		
			0	0		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2012

			0	0		
			v	^		
0	<	IN =		0	<	0
0	>	OUT =		0	>	0
			v	^		
			0	0		

EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38
PHF FOR TRUCKS: 0.333

			0	0		
			v	^		
63	<	IN =		123	<	63
60	>	OUT =		123	>	60
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040

			1	1		
			v	^		
254	<	IN =		634	<	254
379	>	OUT =		634	>	379
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040

			0	0		
			v	^		
0	<	IN =		0	<	0
0	>	OUT =		0	>	0
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38
PHF FOR TRUCKS: 0.333

			0	0		
			v	^		
97	<	IN =		241	<	97
144	>	OUT =		241	>	144
			v	^		
			0	0		

RAW GROWTH (PCEs): 2012 TO 2040
CONVERSION OF TRUCKS TO: 2040
FACTOR = 1.00

			0	0		
			v	^		
34	<				<	34
84	>				>	84
			v	^		
			0	0		

ADJUSTED GROWTH (PCEs): 2012 TO 2040
10 MINIMUM GROWTH %

			0	0		
			v	^		
30	<	IN =		110	<	30
80	>	OUT =		110	>	80
			v	^		
			0	0		

PRORATED GROWTH (PCEs): 2016 TO 2040
24 YEARS

			0	0		
			v	^		
30	<				<	30
70	>				>	70
			v	^		
			0	0		

NEW PROJECTED VOLUMES (PCEs): 2040

			30	20		
			v	^		
100	<				<	90
150	>				>	140
			v	^		
			0	0		

YEAR 2018 GROWTH: 2016 TO 2018
2 YEARS

			0	0		
			v	^		
0	<				<	0
10	>				>	10
			v	^		
			0	0		

INITIAL YEAR 2018 VOLUMES:
2018

			30	20		
			v	^		
70	<	IN =		180	<	60
90	>	OUT =		170	>	80
			v	^		
			0	0		

BALANCED YEAR 2018 VOLUMES:
2018

			30	20		
			v	^		
70	<	IN =		180	<	60
90	>	OUT =		170	>	80
			v	^		
			0	0		

EVENING PEAK HOUR

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2016

		37	0	8		
		<	v	>		
26	^				^	3
104	>				<	57
0	v				v	0
		<	^	>		
		0	0	1		

EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2016

			45	29		
			v	^		
94	<	IN =		236	<	60
130	>	OUT =		236	>	113
			v	^		
			0	1		

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):

		0	0	0		
		<	v	>		
0	^				^	0
7	>				<	0
0	v				v	0
		<	^	>		
		0	0	0		

PCE FACTORS BY AXLE:
2: 1.5 3: 2 4+: 3.0

TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2016

		37	0	8		
		<	v	>		
26	^				^	3
111	>				<	57
0	v				v	0
		<	^	>		
		0	0	1		

EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2012

			1	1		
			v	^		
162	<	IN =		359	<	162
196	>	OUT =		359	>	196
			v	^		
			0	0		

EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2012

			0	0		
			v	^		
0	<	IN =		0	<	0
0	>	OUT =		0	>	0
			v	^		
			0	0		

EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.25

			0	0		
			v	^		
45	<	IN =		101	<	45
55	>	OUT =		101	>	55
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040

			1	1		
			v	^		
254	<	IN =		634	<	254
379	>	OUT =		634	>	379
			v	^		
			0	0		

FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040

			0	0		
			v	^		
0	<	IN =		0	<	0
0	>	OUT =		0	>	0
			v	^		
			0	0		

FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.25

			0	0		
			v	^		
71	<	IN =		178	<	71
106	>	OUT =		178	>	106
			v	^		
			0	0		

RAW GROWTH (PCEs): 2012 TO 2040
CONVERSION OF TRUCKS TO: 2040
FACTOR = 1.00

			0	0		
			v	^		
26	<				<	26
51	>				>	51
			v	^		
			0	0		

ADJUSTED GROWTH (PCEs): 2012 TO 2040
10 MINIMUM GROWTH %

			0	0		
			v	^		
30	<	IN =		80	<	30
50	>	OUT =		80	>	50
			v	^		
			0	0		

PRORATED GROWTH (PCEs): 2016 TO 2040
24 YEARS

			0	0		
			v	^		
30	<				<	30
40	>				>	40
			v	^		
			0	0		

NEW PROJECTED VOLUMES (PCEs): 2040

			50	30		
			v	^		
120	<				<	90
180	>				>	160
			v	^		
			0	0		

YEAR 2018 GROWTH: 2016 TO 2018
2 YEARS

			0	0		
			v	^		
0	<				<	0
0	>				>	0
			v	^		
			0	0		

INITIAL YEAR 2018 VOLUMES:
2018

			50	30		
			v	^		
90	<	IN =		250	<	60
140	>	OUT =		240	>	120
			v	^		
			0	0		

BALANCED YEAR 2018 VOLUMES:
2018

			50	30		
			v	^		
90	<	IN =		250	<	60
140	>	OUT =		250	>	130
			v	^		
			0	0		

Nevada Street (NS) / Beaumont Avenue (EW) - #5

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2018 TOTAL
NORTH	LEFT	**0**	SOUTH LEG		NORTH	LEFT	**0**	SOUTH LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**1**	OUT ...	**0**
SOUTH	LEFT	**5**	NORTH LEG		SOUTH	LEFT	**8**	NORTH LEG	
BOUND	THRU	**0**	IN ...	**30**	BOUND	THRU	**0**	IN ...	**50**
	RIGHT	**23**	OUT ...	**20**		RIGHT	**37**	OUT ...	**30**
EAST	LEFT	**15**	WEST LEG		EAST	LEFT	**26**	WEST LEG	
BOUND	THRU	**60**	IN ...	**90**	BOUND	THRU	**111**	IN ...	**140**
	RIGHT	**0**	OUT ...	**70**		RIGHT	**0**	OUT ...	**90**
WEST	LEFT	**0**	EAST LEG		WEST	LEFT	**0**	EAST LEG	
BOUND	THRU	**51**	IN ...	**60**	BOUND	THRU	**57**	IN ...	**60**
	RIGHT	**5**	OUT ...	**80**		RIGHT	**3**	OUT ...	**130**

YEAR 2018 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2018 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**0**	**0**	NORTH LEG	NORTH	LEFT	**0**	**0**	NORTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**1**	**1**	ADT 0
SOUTH	LEFT	**5**	**8**	SOUTH LEG	SOUTH	LEFT	**8**	**8**	SOUTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**23**	**23**	ADT 0		RIGHT	**37**	**37**	ADT 0
EAST	LEFT	**15**	**15**	EAST LEG	EAST	LEFT	**26**	**26**	EAST LEG
BOUND	THRU	**60**	**72**	RATIO -	BOUND	THRU	**111**	**116**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
WEST	LEFT	**0**	**0**	WEST LEG	WEST	LEFT	**0**	**0**	WEST LEG
BOUND	THRU	**51**	**51**	RATIO -	BOUND	THRU	**57**	**57**	RATIO -
	RIGHT	**5**	**6**	ADT 0		RIGHT	**3**	**3**	ADT 0

Nevada Street (NS) / Beaumont Avenue (EW) - #5

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

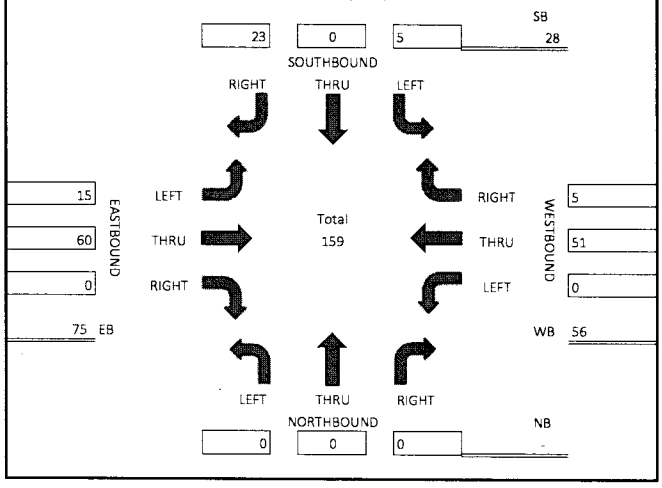
NCHRP 255

YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	APPROACH	YEAR 2040 TOTAL
NORTH	LEFT	**0**	SOUTH LEG		NORTH	LEFT	**0**	SOUTH LEG	
BOUND	THRU	**0**	IN ...	**0**	BOUND	THRU	**0**	IN ...	**0**
	RIGHT	**0**	OUT ...	**0**		RIGHT	**1**	OUT ...	**0**
SOUTH	LEFT	**5**	NORTH LEG		SOUTH	LEFT	**8**	NORTH LEG	
BOUND	THRU	**0**	IN ...	**30**	BOUND	THRU	**0**	IN ...	**50**
	RIGHT	**23**	OUT ...	**20**		RIGHT	**37**	OUT ...	**30**
EAST	LEFT	**15**	WEST LEG		EAST	LEFT	**26**	WEST LEG	
BOUND	THRU	**60**	IN ...	**150**	BOUND	THRU	**111**	IN ...	**180**
	RIGHT	**0**	OUT ...	**100**		RIGHT	**0**	OUT ...	**120**
WEST	LEFT	**0**	EAST LEG		WEST	LEFT	**0**	EAST LEG	
BOUND	THRU	**51**	IN ...	**90**	BOUND	THRU	**57**	IN ...	**90**
	RIGHT	**5**	OUT ...	**140**		RIGHT	**3**	OUT ...	**160**

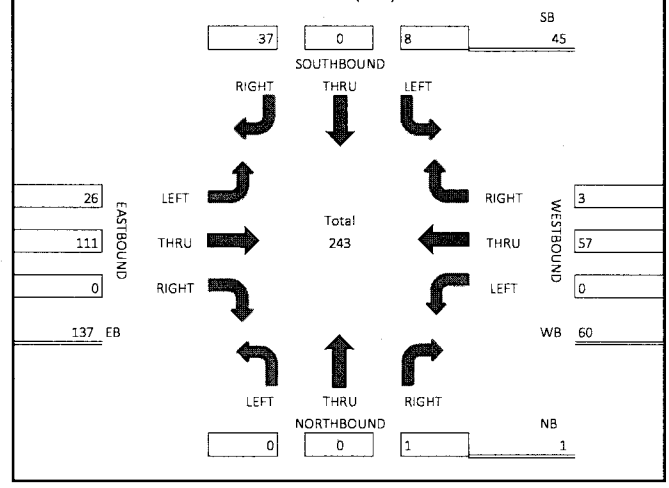
YEAR 2040 TRAFFIC CONDITIONS									
FRIDAY MID-DAY PEAK HOUR INPUT DATA					FRIDAY EVENING PEAK HOUR INPUT DATA				
APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP	APPROACH	TURNING MOVEMENT	BASE YEAR COUNT	YEAR 2040 FORECAST	PEAK - DAILY RELATIONSHIP
NORTH	LEFT	**0**	**0**	NORTH LEG	NORTH	LEFT	**0**	**0**	NORTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**1**	**1**	ADT 0
SOUTH	LEFT	**5**	**8**	SOUTH LEG	SOUTH	LEFT	**8**	**10**	SOUTH LEG
BOUND	THRU	**0**	**0**	RATIO -	BOUND	THRU	**0**	**0**	RATIO -
	RIGHT	**23**	**25**	ADT 0		RIGHT	**37**	**41**	ADT 0
EAST	LEFT	**15**	**17**	EAST LEG	EAST	LEFT	**26**	**29**	EAST LEG
BOUND	THRU	**60**	**132**	RATIO -	BOUND	THRU	**111**	**150**	RATIO -
	RIGHT	**0**	**0**	ADT 0		RIGHT	**0**	**0**	ADT 0
WEST	LEFT	**0**	**0**	WEST LEG	WEST	LEFT	**0**	**0**	WEST LEG
BOUND	THRU	**51**	**79**	RATIO -	BOUND	THRU	**57**	**82**	RATIO -
	RIGHT	**5**	**6**	ADT 0		RIGHT	**3**	**4**	ADT 0

Nevada Street (NS) / Beaumont Avenue (EW) - #5

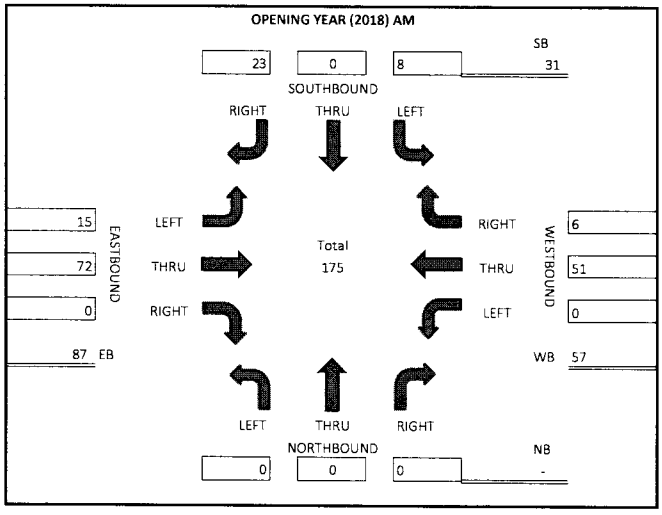
EXISTING YEAR (2016) AM



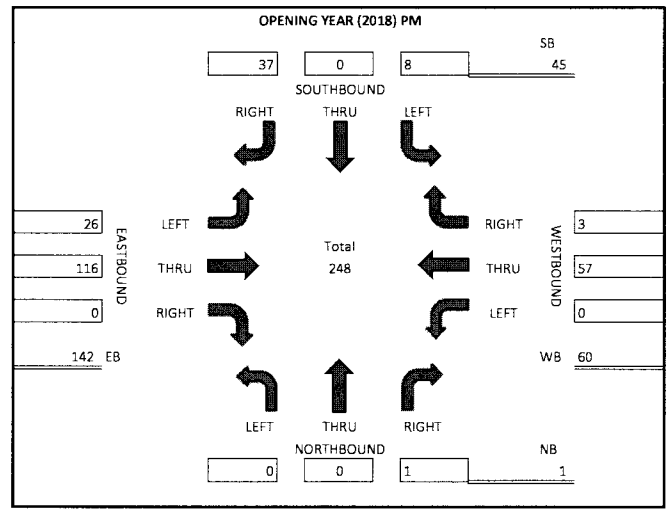
EXISTING YEAR (2016) AM



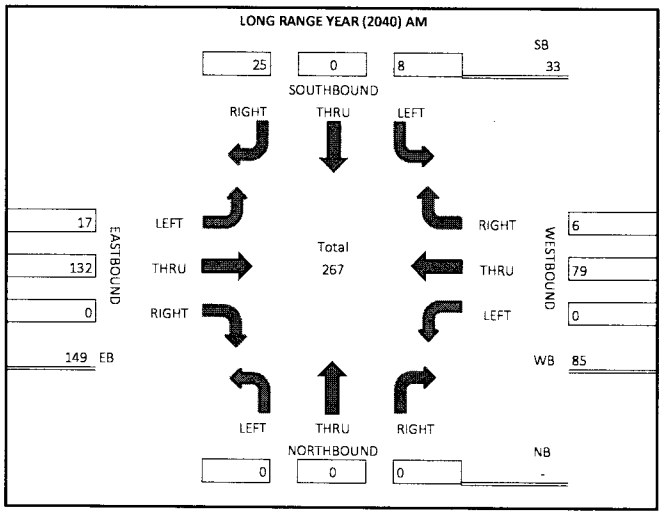
OPENING YEAR (2018) AM



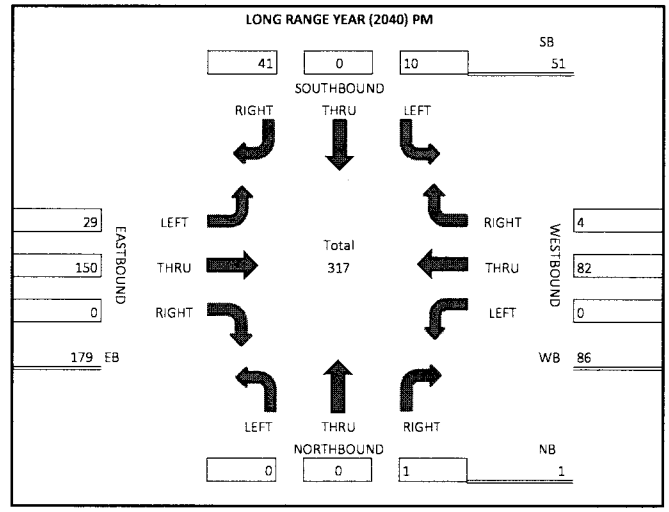
OPENING YEAR (2018) PM



LONG RANGE YEAR (2040) AM



LONG RANGE YEAR (2040) PM



APPENDIX D

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns

11. Pedestrian activity

12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length

2. Amount of red time faced by a lane group

3. Amount of yellow time for that lane group

4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level Of Service	Description	Average Total Delay Per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing

Islamic Community Center of Redlands

Vistro File: J:\...\E Friday Mid-Day.vistro
Report File: J:\...\E Friday Mid-Day.pdf

Scenario 1: Existing - Friday Mid-Day Peak Hour
6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.397	8.7	A
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.053	12.5	B
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	138	94	772	141	86	754
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	94	772	141	86	754
Peak Hour Factor	0.9421	0.9421	0.9421	0.9421	0.9421	0.9421
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	25	205	37	23	200
Total Analysis Volume [veh/h]	146	100	819	150	91	800
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	15	0	30	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	37	37	4	45
g / C, Green / Cycle	0.11	0.11	0.62	0.62	0.07	0.75
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.23	0.09	0.05	0.22
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	208	186	2230	996	125	2720
d1, Uniform Delay [s]	25.63	25.11	5.72	4.88	27.46	2.38
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.25	2.41	0.47	0.32	7.88	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

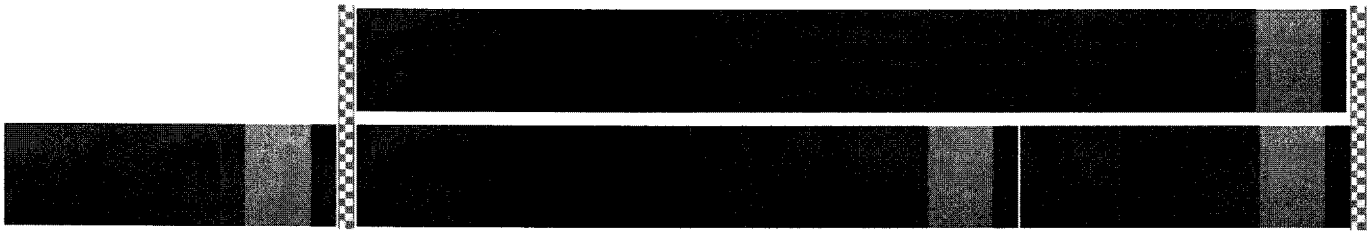
X, volume / capacity	0.70	0.54	0.37	0.15	0.73	0.29
d, Delay for Lane Group [s/veh]	29.88	27.52	6.19	5.20	35.33	2.65
Lane Group LOS	C	C	A	A	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.14	1.39	1.99	0.67	1.49	0.74
50th-Percentile Queue Length [ft]	53.39	34.82	49.78	16.64	37.18	18.57
95th-Percentile Queue Length [veh]	3.84	2.51	3.58	1.20	2.68	1.34
95th-Percentile Queue Length [ft]	96.10	62.68	89.61	29.94	66.93	33.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.88	27.52	6.19	5.20	35.33	2.65
Movement LOS	C	C	A	A	D	A
d_A, Approach Delay [s/veh]	28.92		6.03		5.99	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	8.69					
Intersection LOS	A					
Intersection V/C	0.397					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	25	1	201	41	0	201
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	1	201	41	0	201
Peak Hour Factor	0.9381	0.9381	0.9381	0.9381	0.9381	0.9381
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	54	11	0	54
Total Analysis Volume [veh/h]	27	1	214	44	0	214
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.51	9.86	0.00	0.00	7.68	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.17	0.17	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	4.32	4.32	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.42		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	5	0	23	15	60	0	0	51	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	5	0	23	15	60	0	0	51	5
Peak Hour Factor	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	7	5	18	0	0	16	2
Total Analysis Volume [veh/h]	0	0	0	6	0	28	18	73	0	0	62	6
Pedestrian Volume [ped/h]	0			0			0			0		

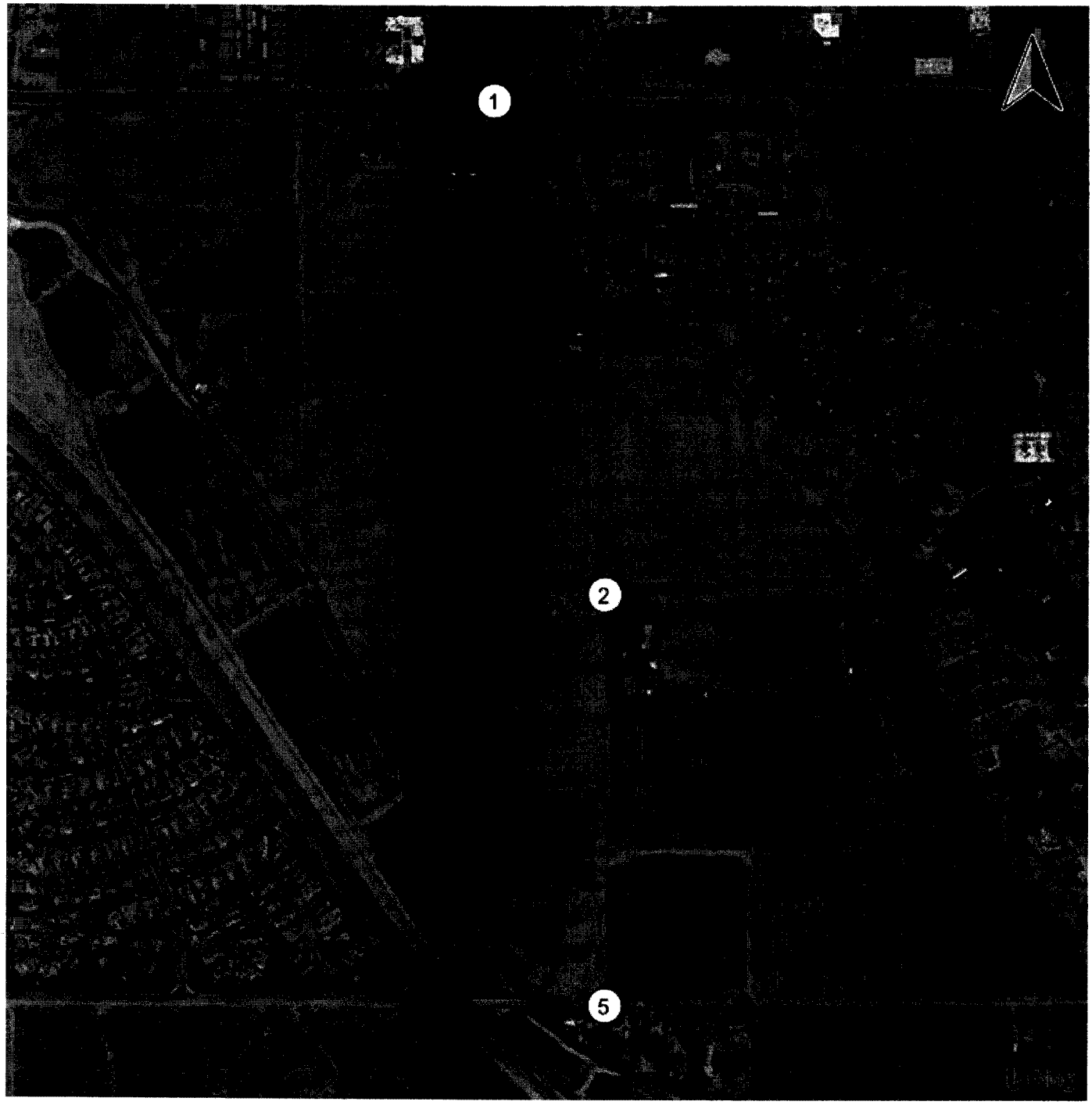
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

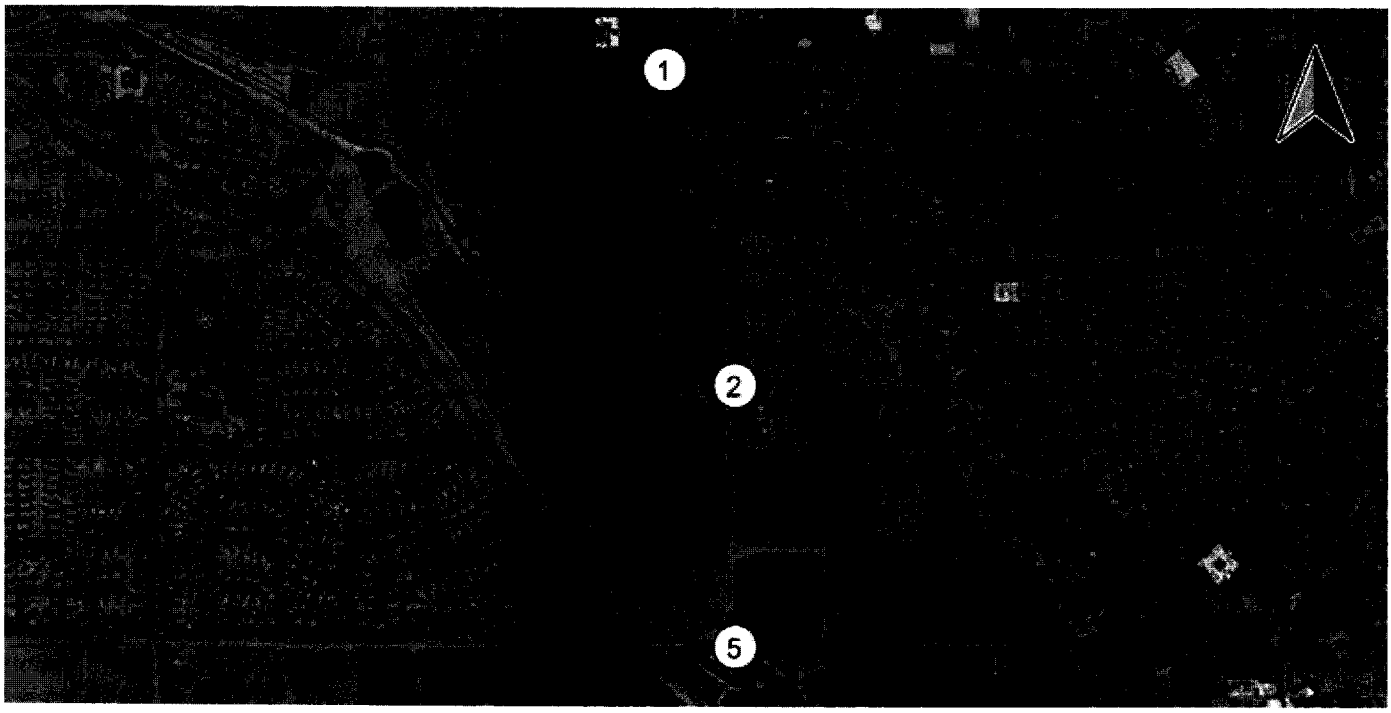
Movement, Approach, & Intersection Results

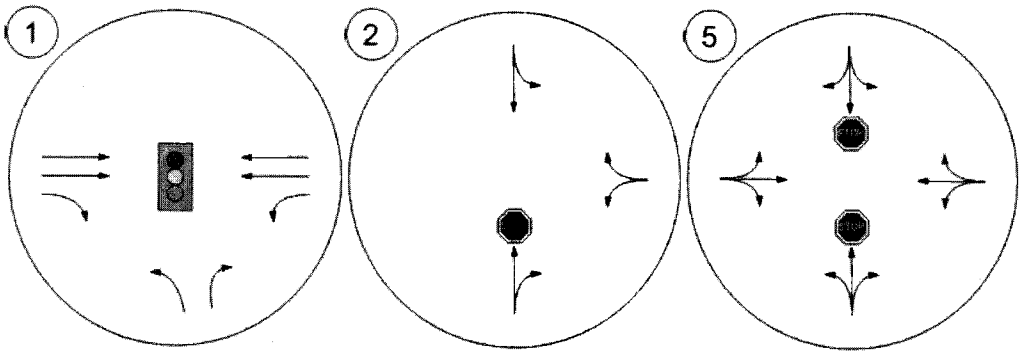
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.81	10.06	8.62	9.72	10.18	8.72	7.36	0.00	0.00	7.34	0.00	0.00
Movement LOS	A	B	A	A	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.11	0.11	0.11	0.19	0.19	0.19	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	2.76	2.76	2.76	4.69	4.69	4.69	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.50			8.90			1.46			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.25											
Intersection LOS	B											

Study Intersections

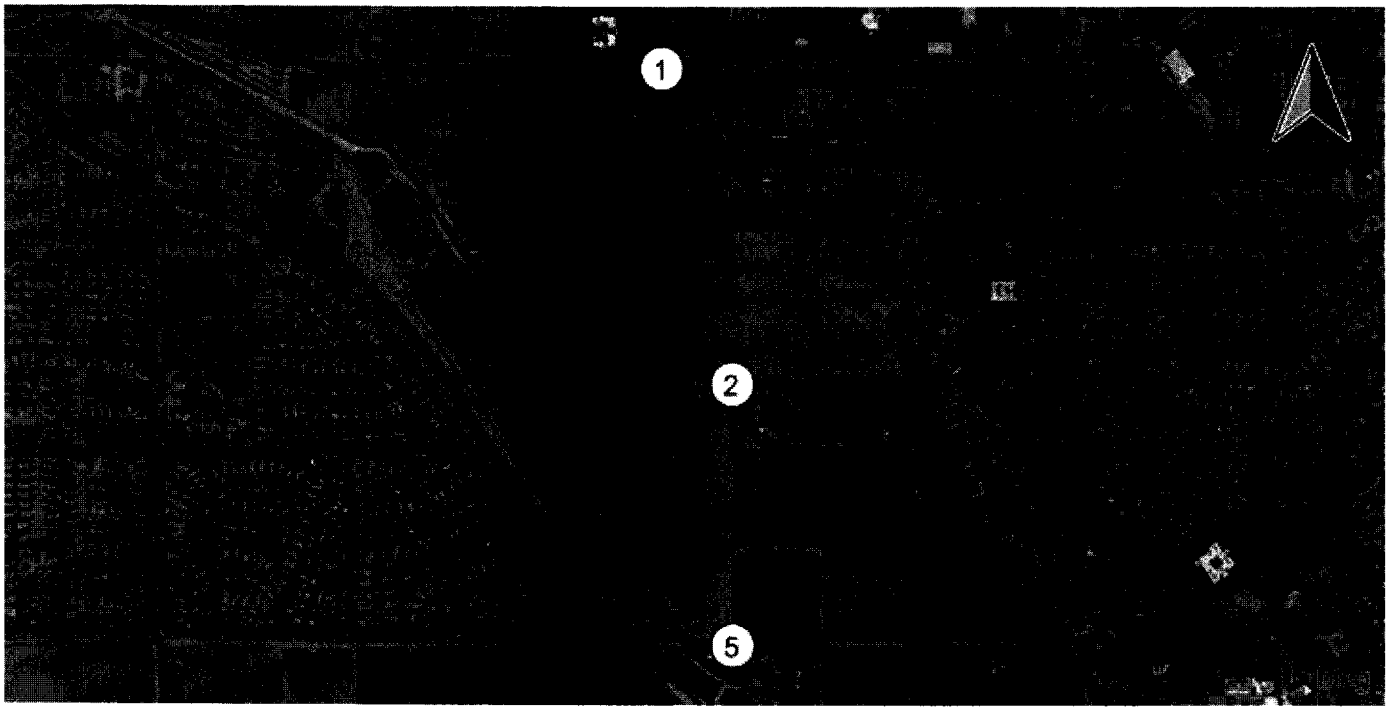


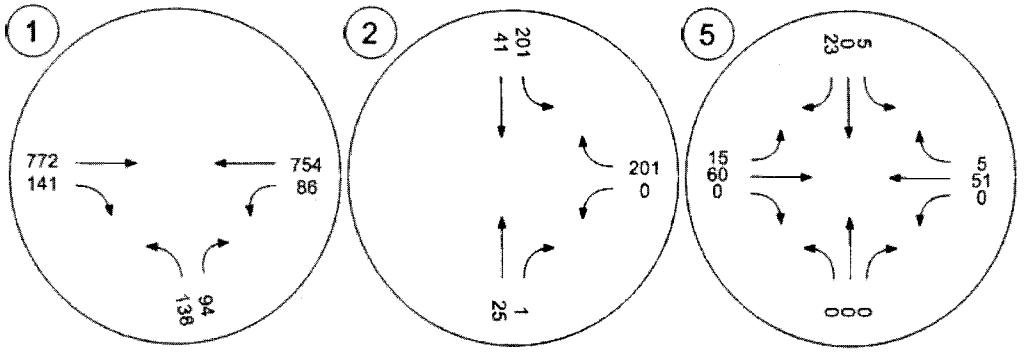
Lane Configuration and Traffic Control



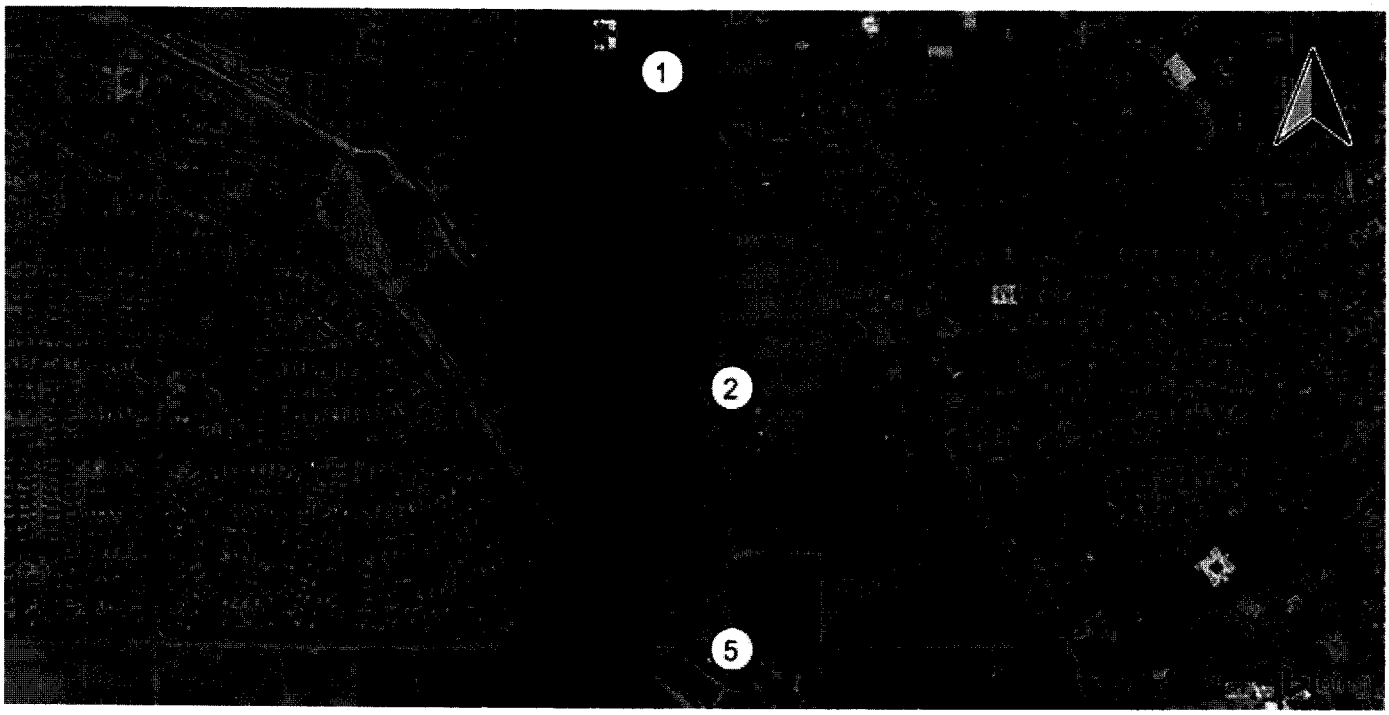


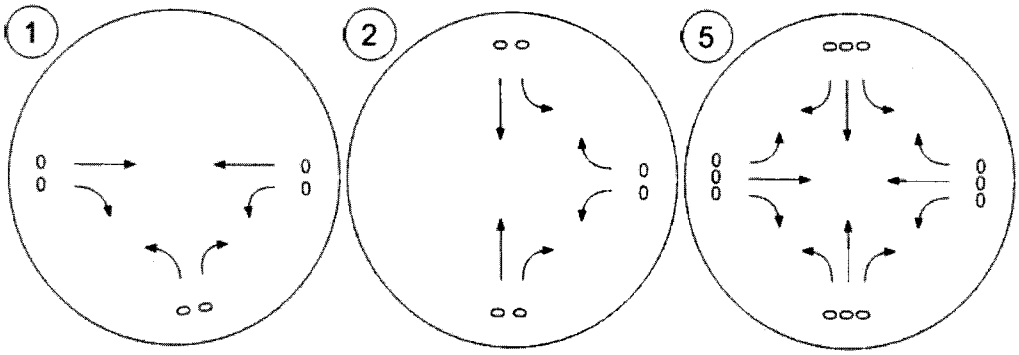
Traffic Volume - Base Volume



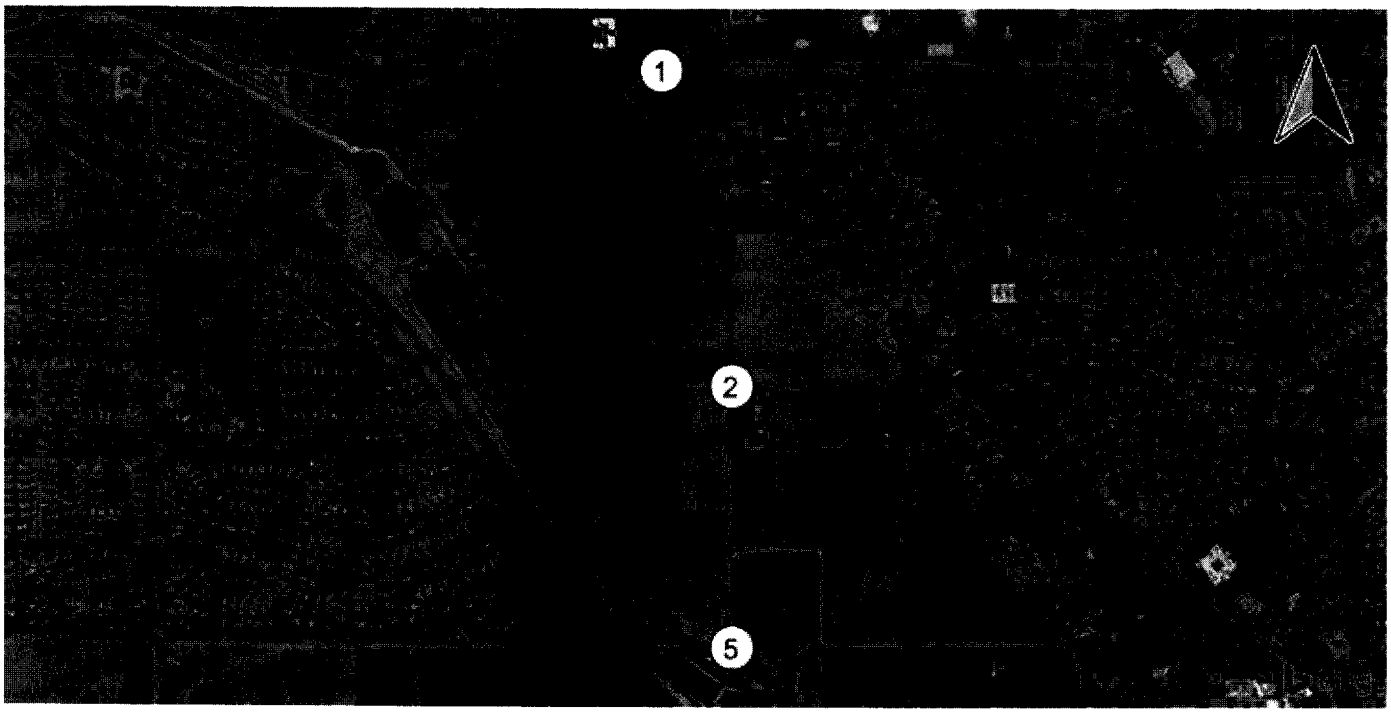


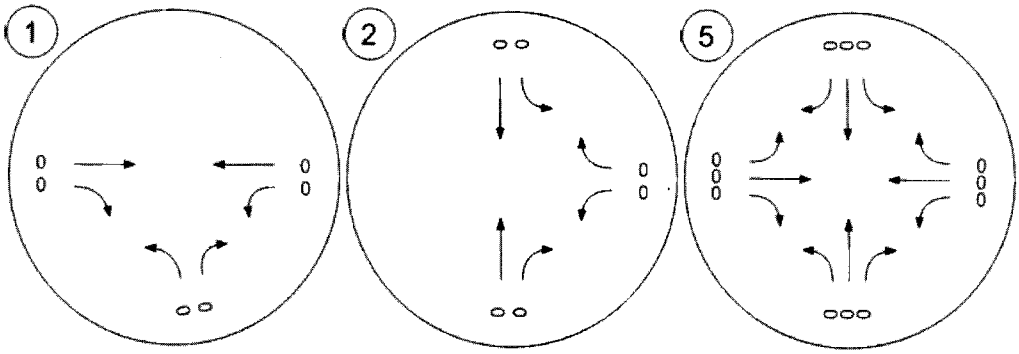
Traffic Volume - In-Process Volume



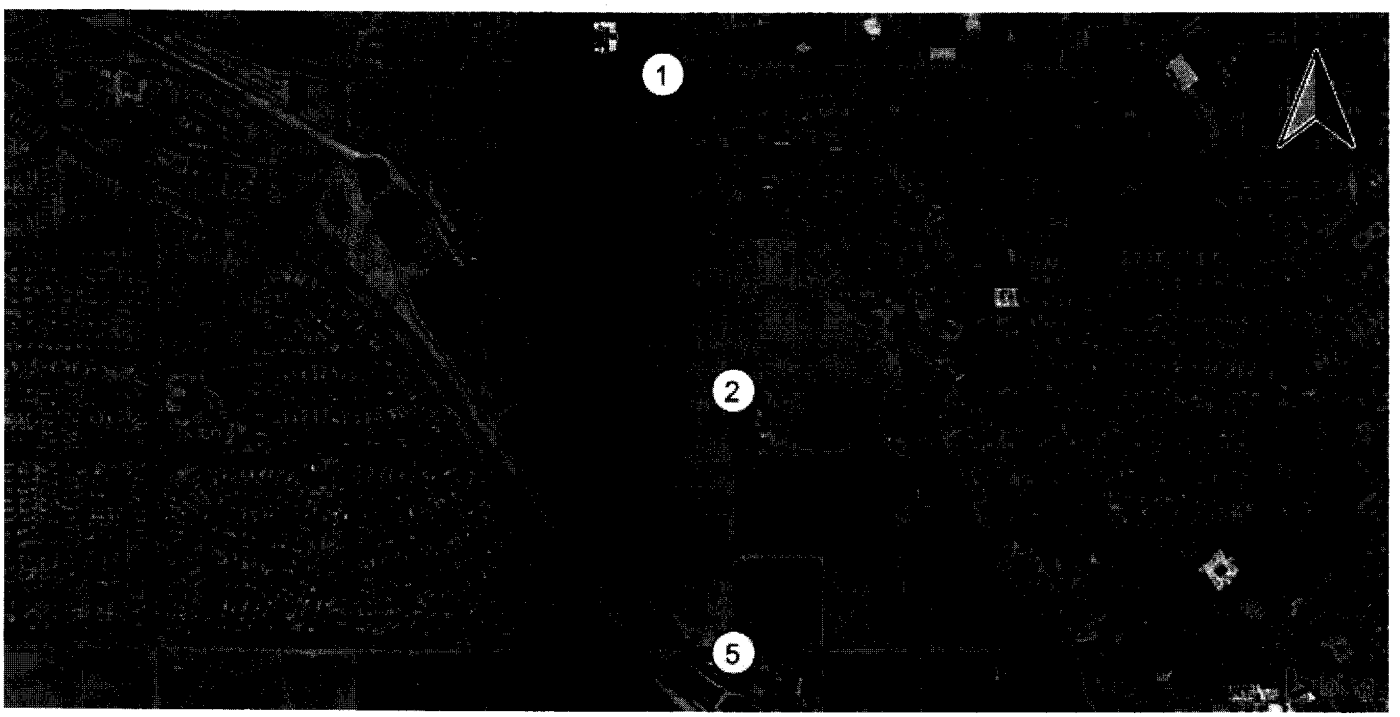


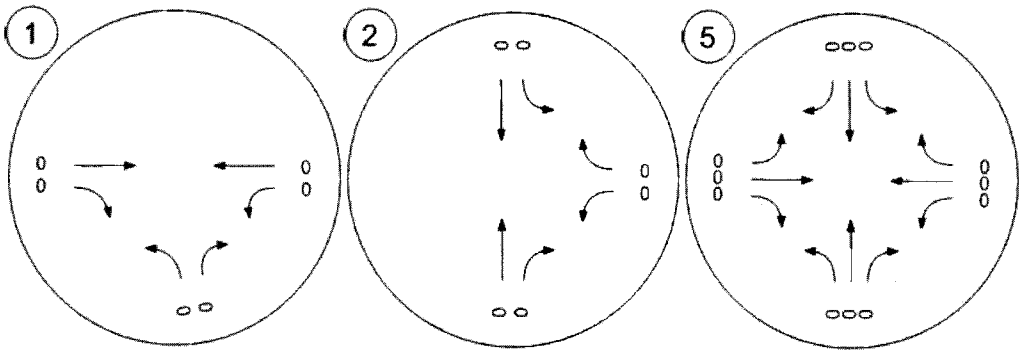
Traffic Volume - Net New Site Trips



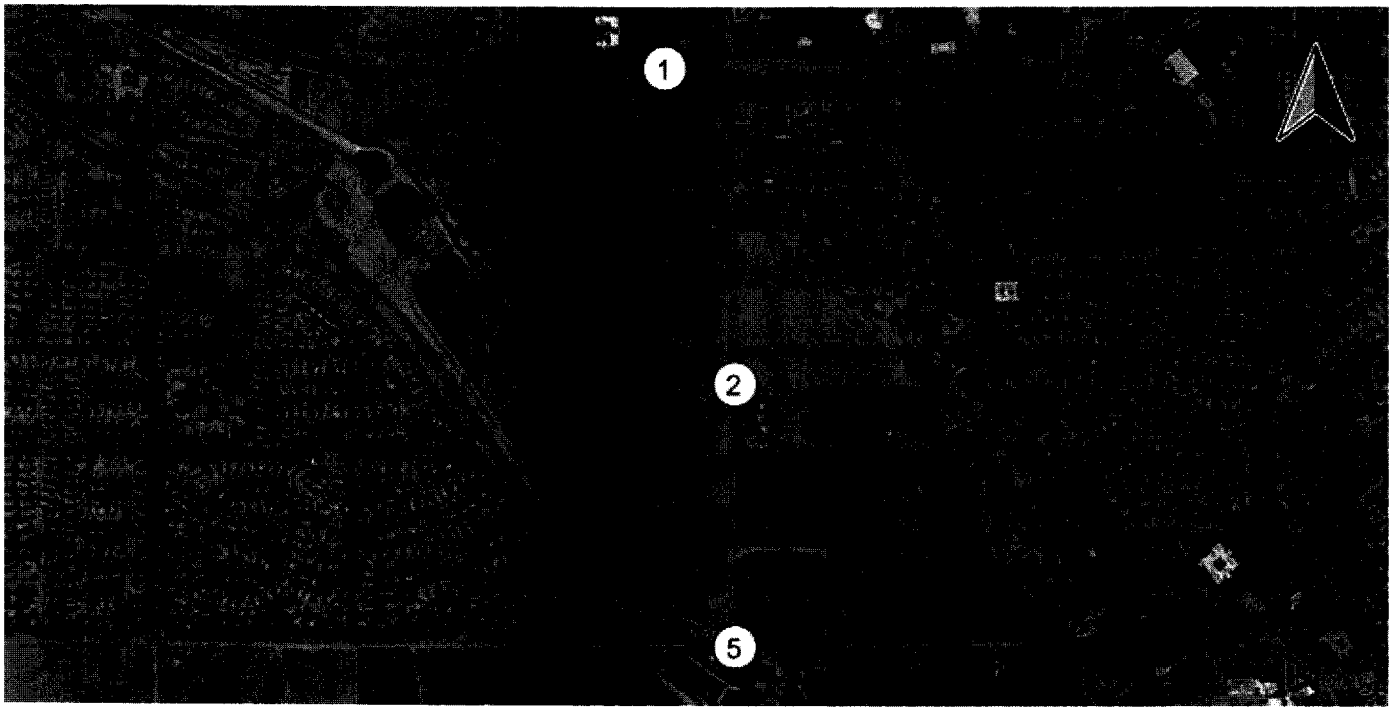


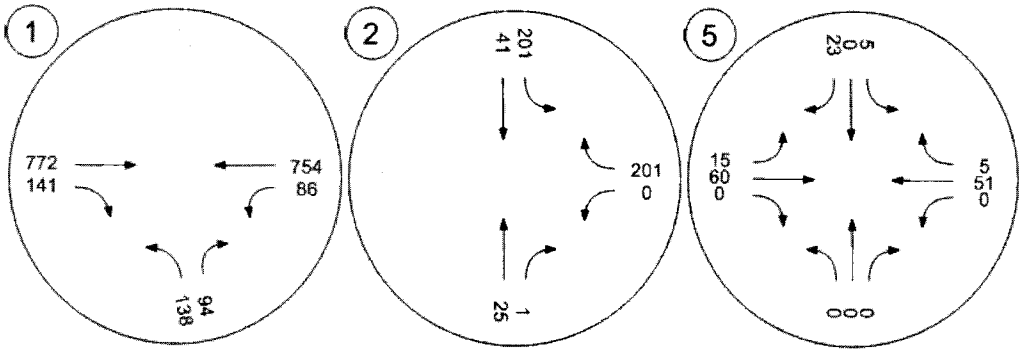
Traffic Volume - Other Volume



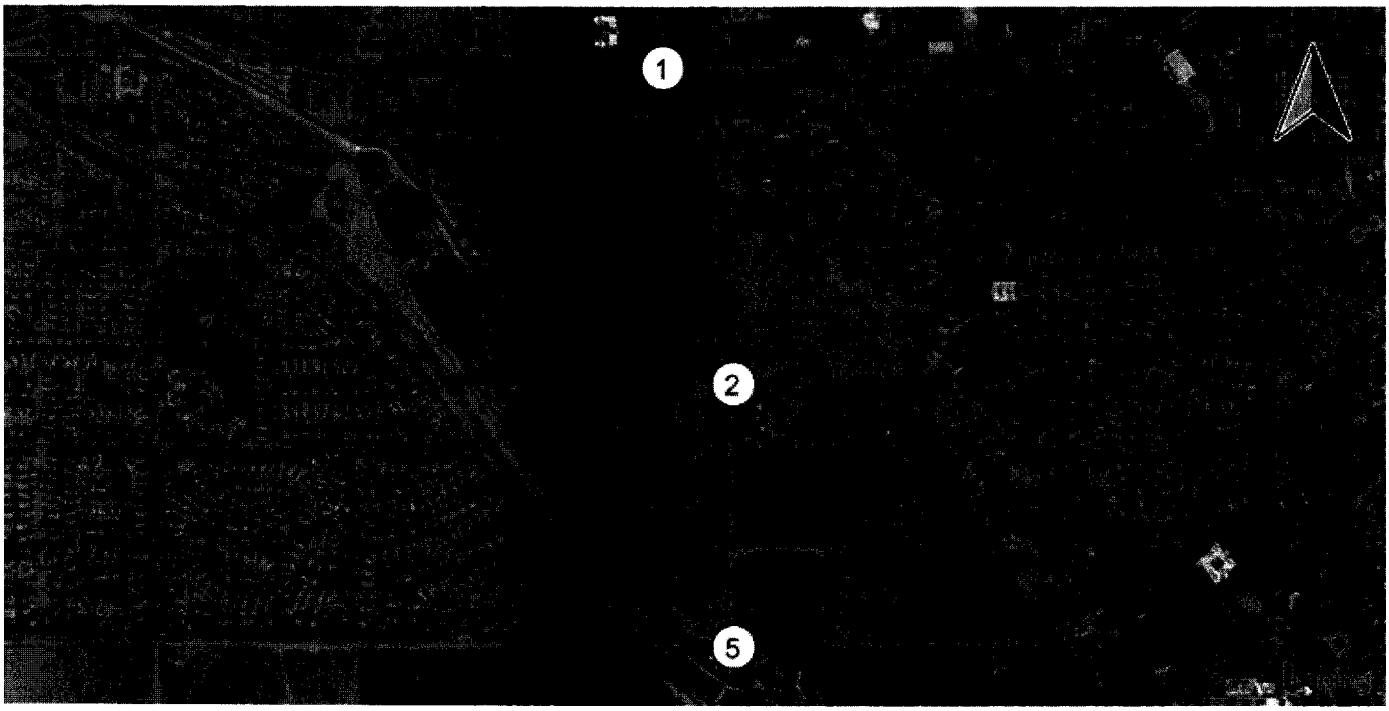


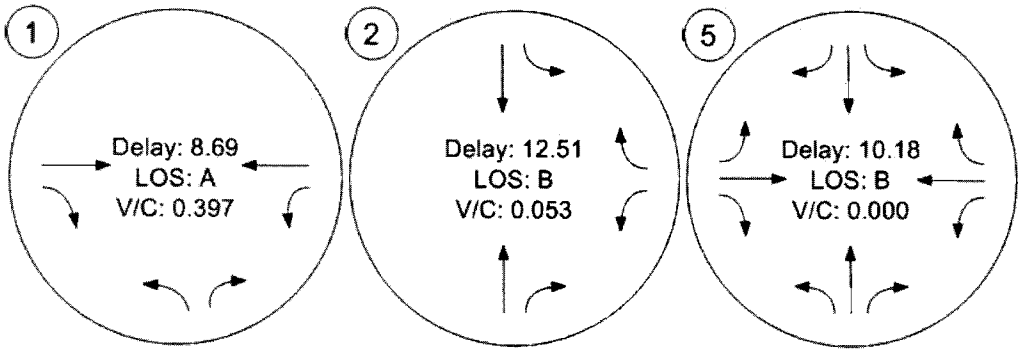
Traffic Volume - Future Total Volume





Traffic Conditions





Islamic Community Center of Redlands

Vistro File: J:\...\E Friday Evening.vistro
Report File: J:\...\E Friday Evening.pdf

Scenario 1: Existing - Friday Evening Peak Hour
6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.524	10.1	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.058	14.7	B
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	133	93	1089	277	146	674
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	93	1089	277	146	674
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	24	282	72	38	175
Total Analysis Volume [veh/h]	138	96	1128	287	151	698
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	33	0	12	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	35	35	6	46
g / C, Green / Cycle	0.11	0.11	0.58	0.58	0.11	0.76
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.31	0.18	0.08	0.19
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	200	178	2104	939	196	2737
d1, Uniform Delay [s]	25.77	25.31	7.65	6.40	26.09	2.21
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.22	2.51	0.98	0.84	6.23	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

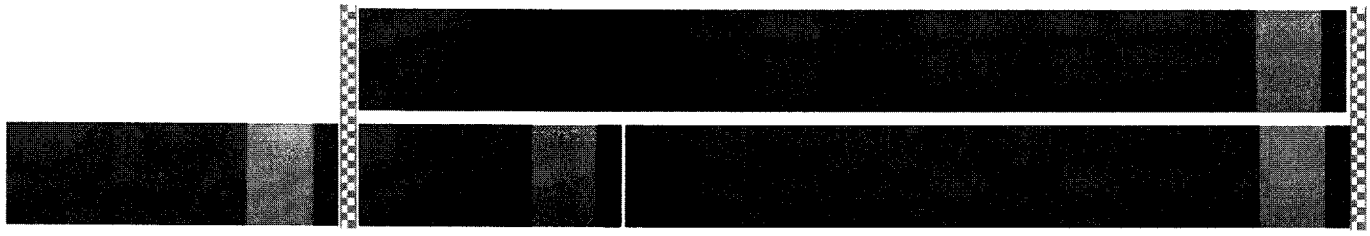
X, volume / capacity	0.69	0.54	0.54	0.31	0.77	0.26
d, Delay for Lane Group [s/veh]	29.99	27.82	8.63	7.24	32.32	2.43
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.02	1.35	3.63	1.64	2.32	0.59
50th-Percentile Queue Length [ft]	50.59	33.68	90.78	41.09	57.93	14.74
95th-Percentile Queue Length [veh]	3.64	2.42	6.54	2.96	4.17	1.06
95th-Percentile Queue Length [ft]	91.06	60.62	163.41	73.95	104.27	26.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.99	27.82	8.63	7.24	32.32	2.43
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	29.10		8.35		7.75	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	10.09					
Intersection LOS	B					
Intersection V/C	0.524					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.058

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	22	0	398	30	0	201
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	0	398	30	0	201
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	104	8	0	53
Total Analysis Volume [veh/h]	23	0	416	31	0	210
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.71	11.30	0.00	0.00	8.16	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.19	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	4.64	4.64	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.71		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	8	0	37	26	111	0	0	57	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	8	0	37	26	111	0	0	57	3
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	10	7	30	0	0	16	1
Total Analysis Volume [veh/h]	0	0	1	9	0	40	28	121	0	0	62	3
Pedestrian Volume [ped/h]	0			0			0			0		

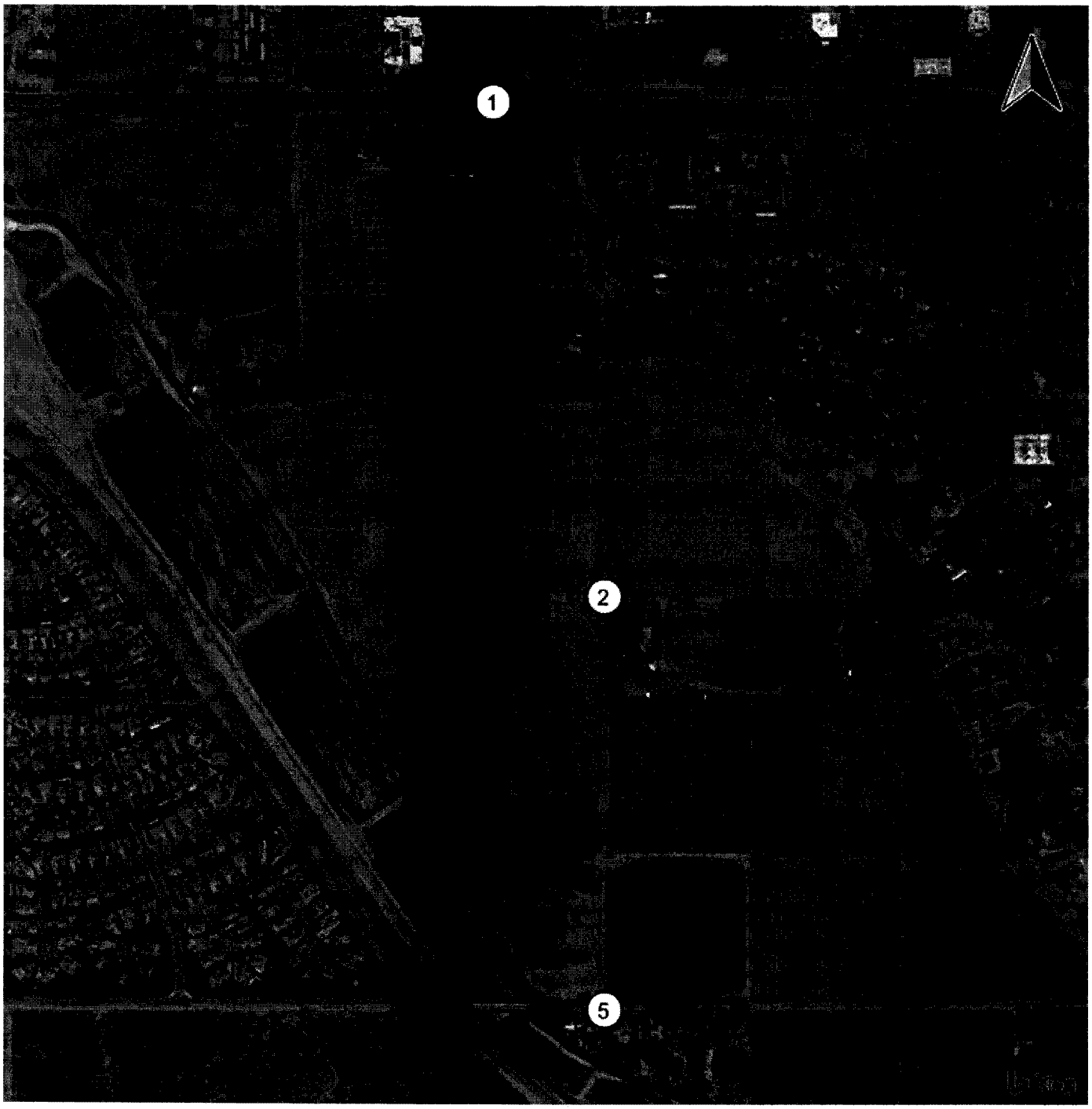
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

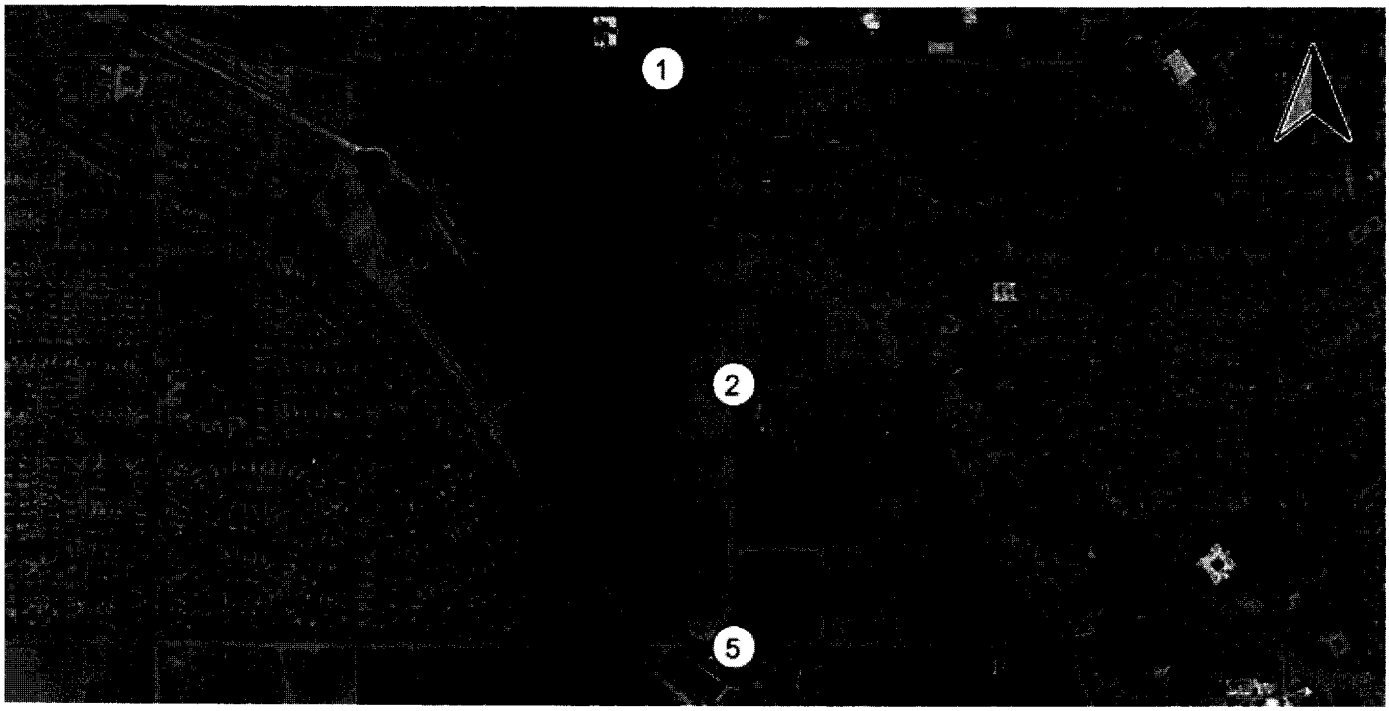
Movement, Approach, & Intersection Results

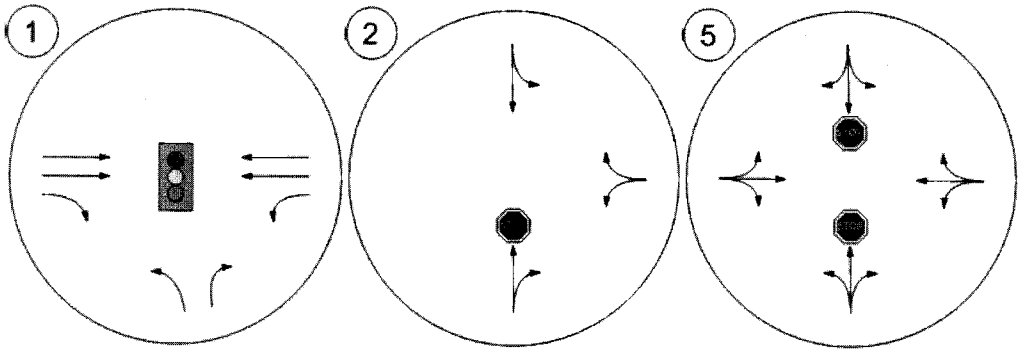
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.47	10.54	8.85	10.31	10.74	8.79	7.37	0.00	0.00	7.43	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.17	0.17	0.17	0.32	0.32	0.32	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	4.15	4.15	4.15	7.96	7.96	7.96	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.85			9.07			1.38			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.50											
Intersection LOS	B											

Study Intersections

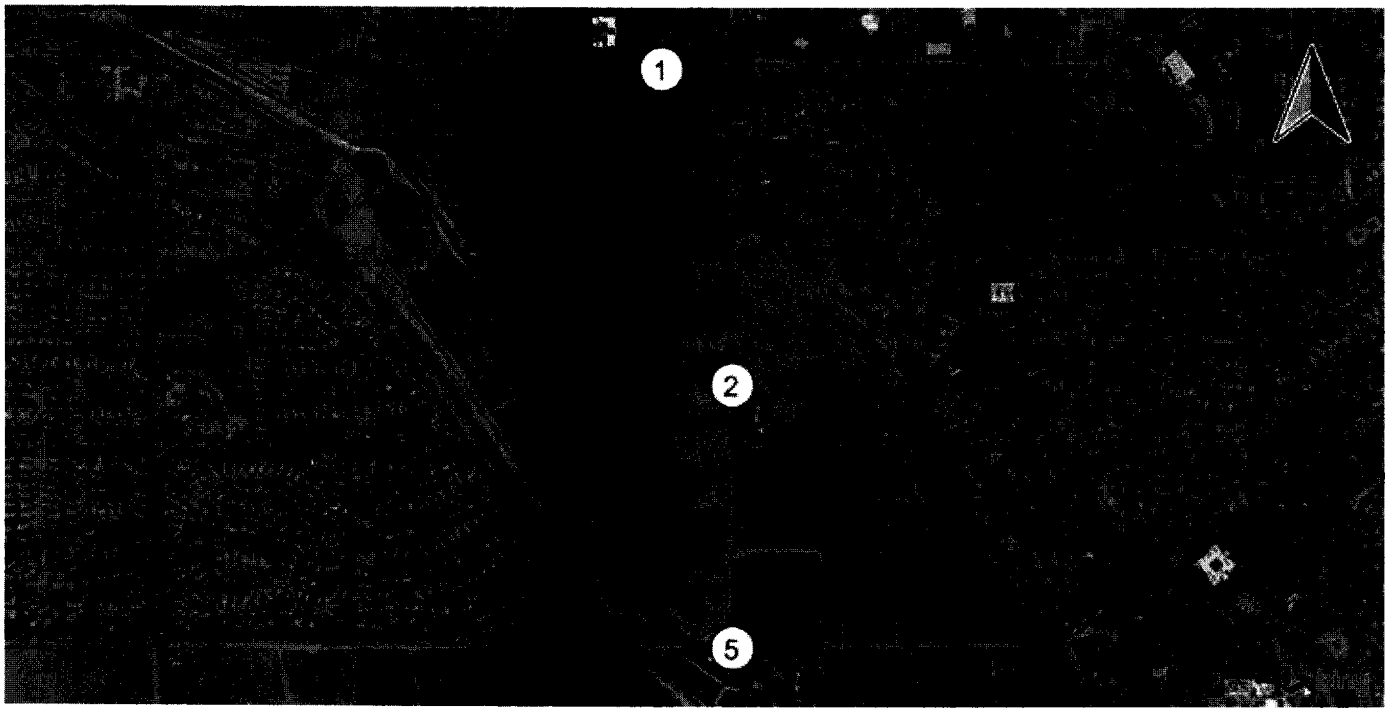


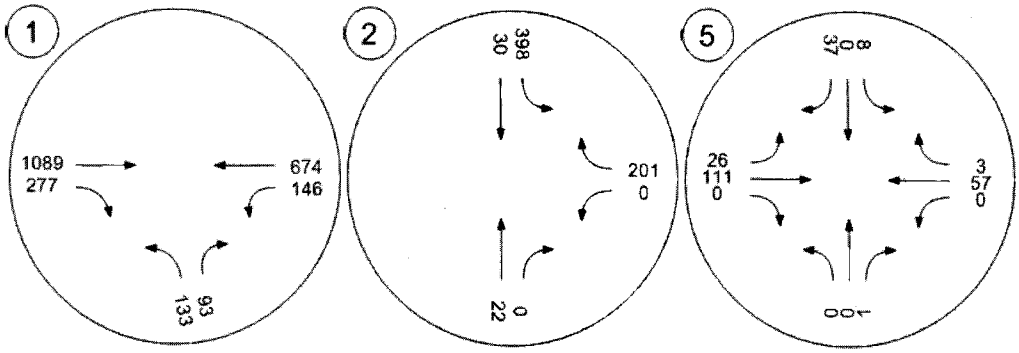
Lane Configuration and Traffic Control



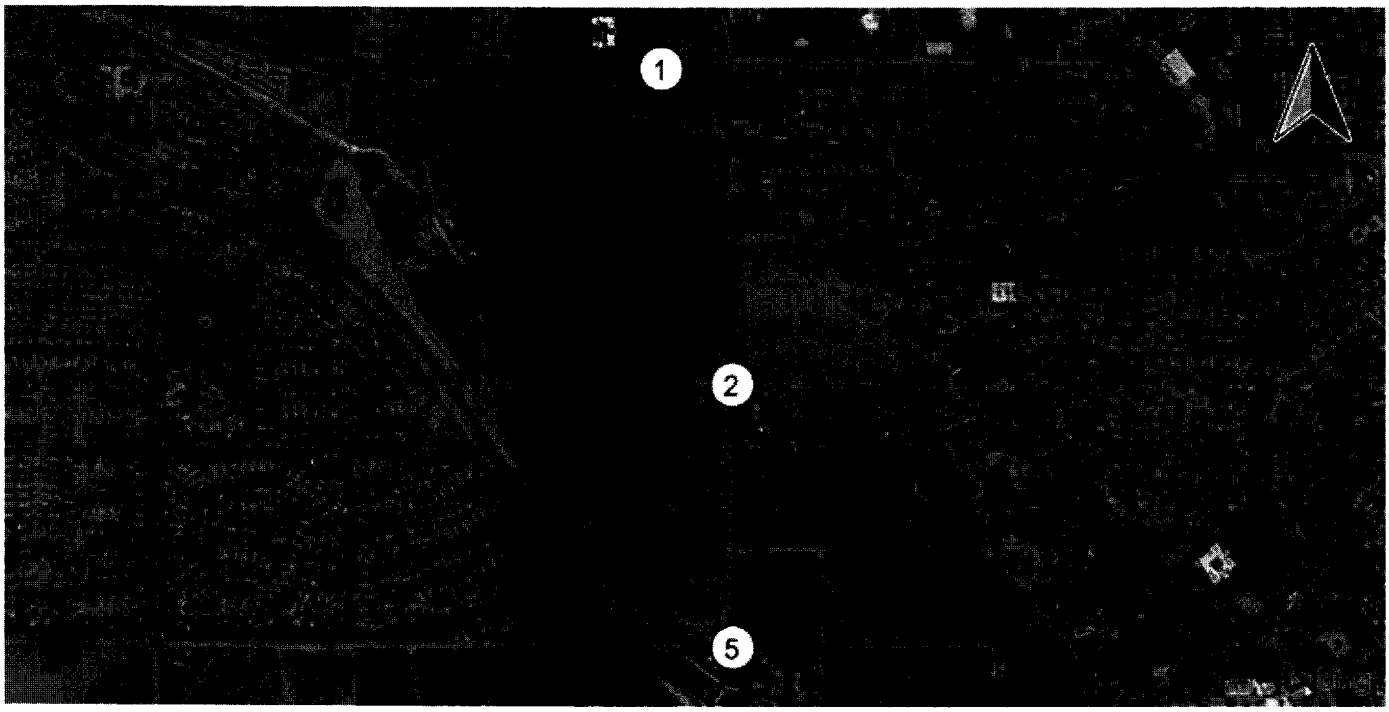


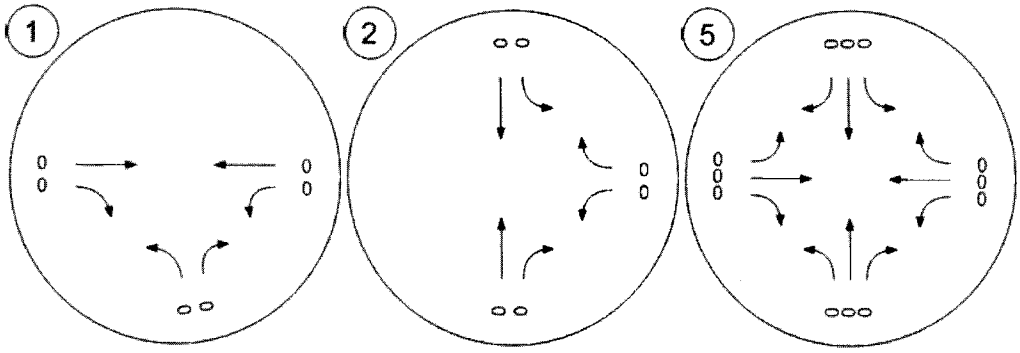
Traffic Volume - Base Volume



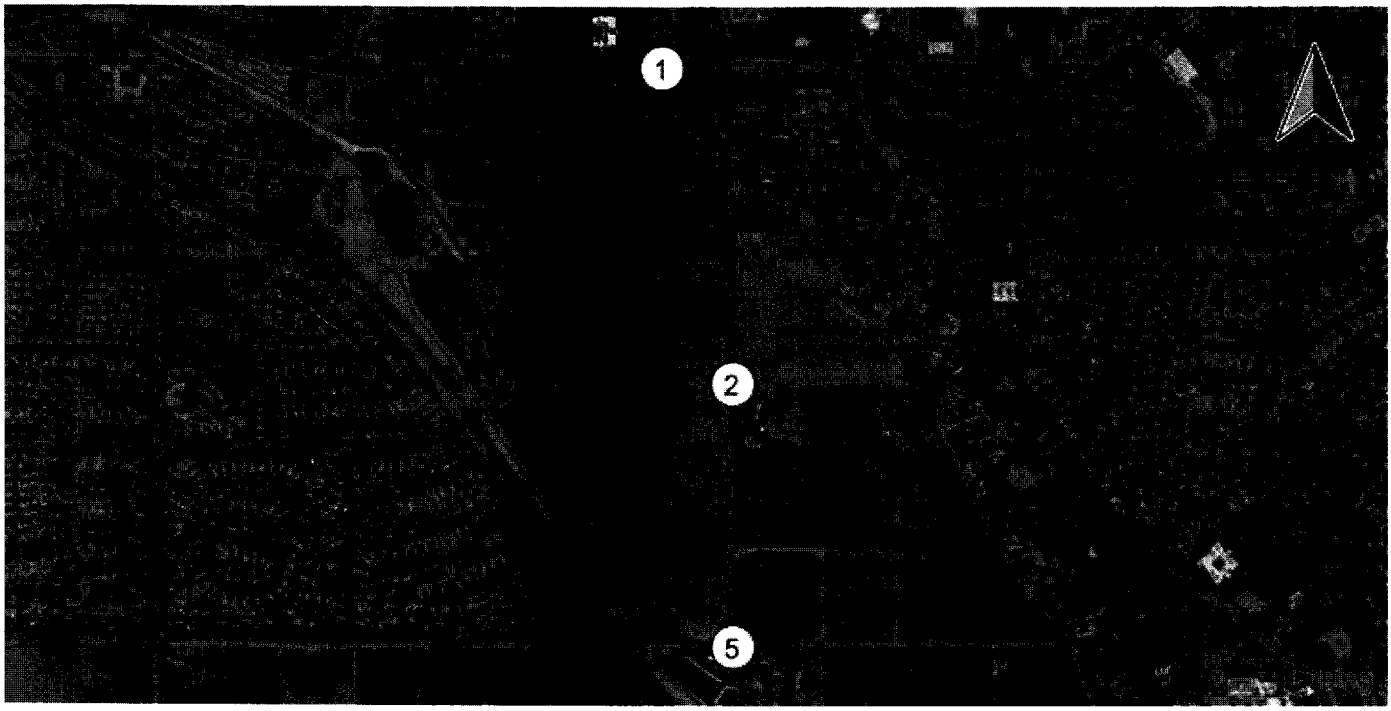


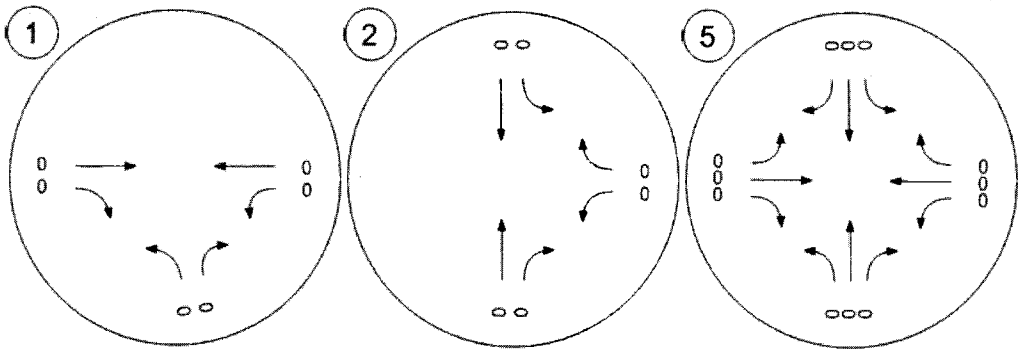
Traffic Volume - In-Process Volume



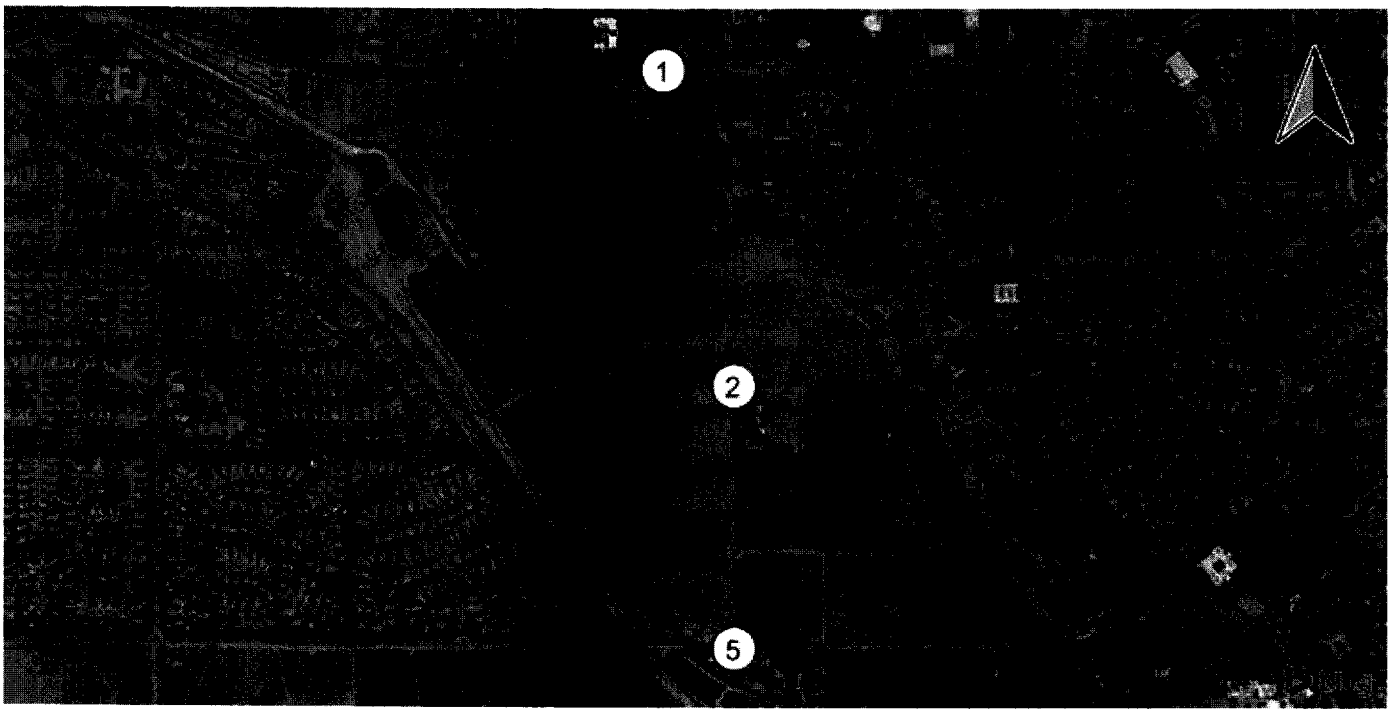


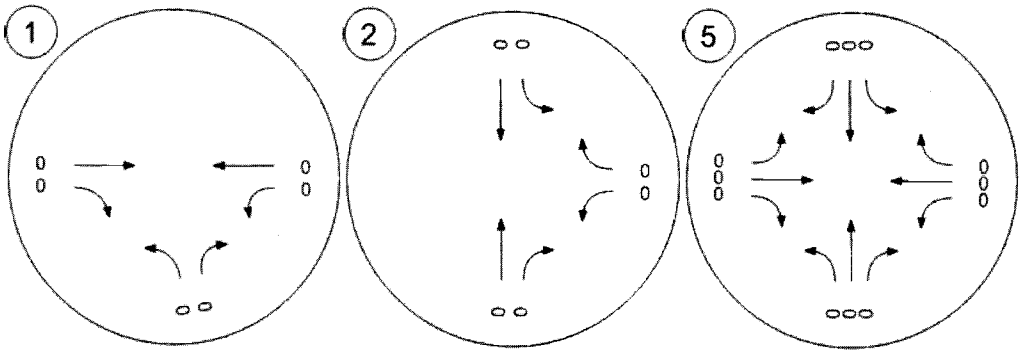
Traffic Volume - Net New Site Trips



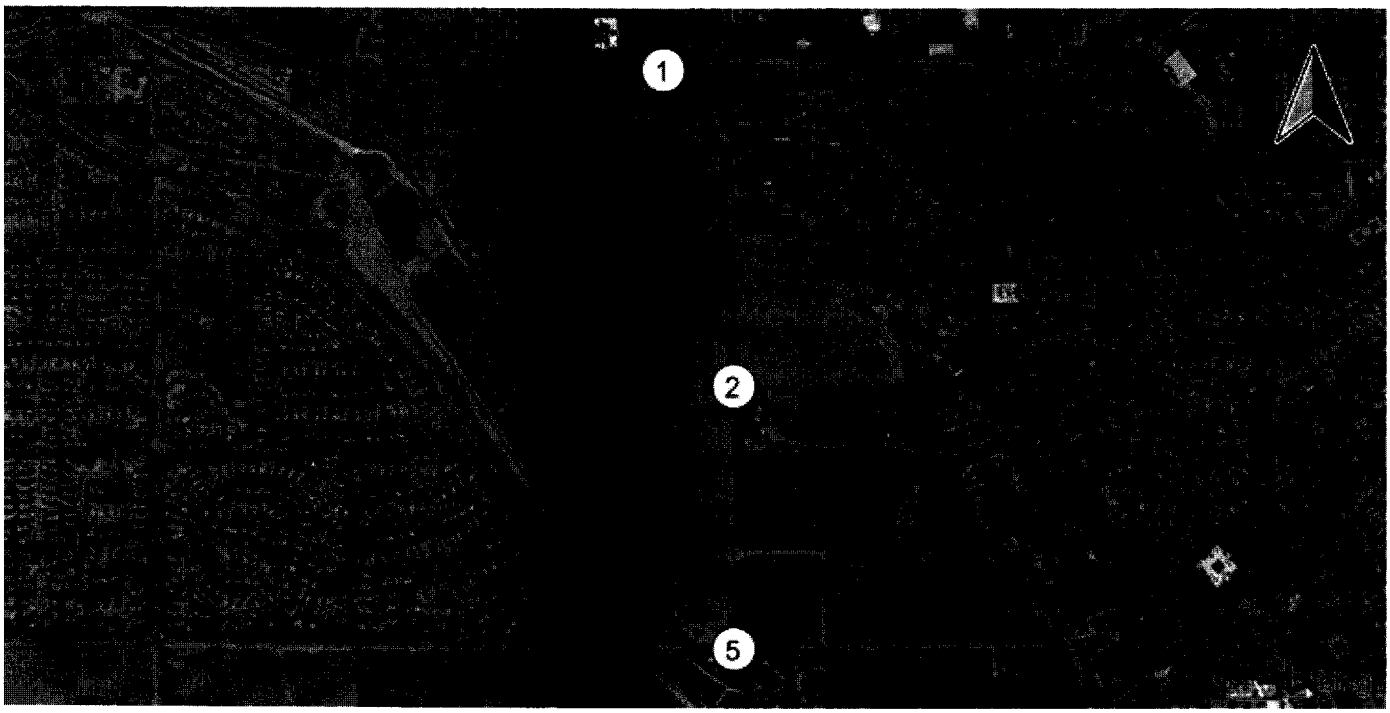


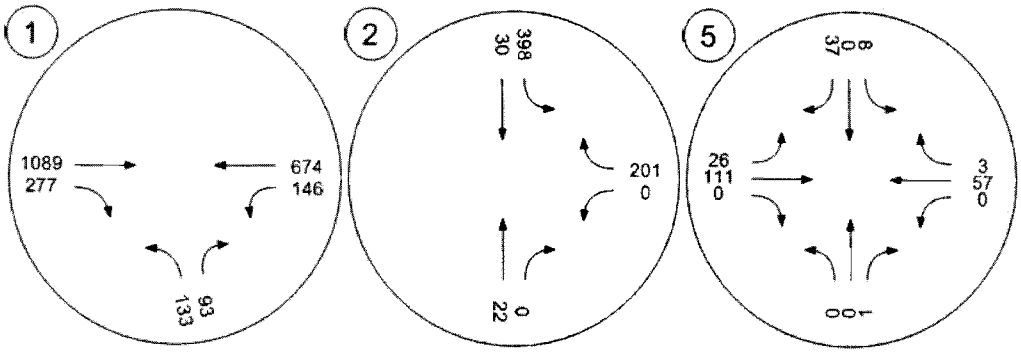
Traffic Volume - Other Volume



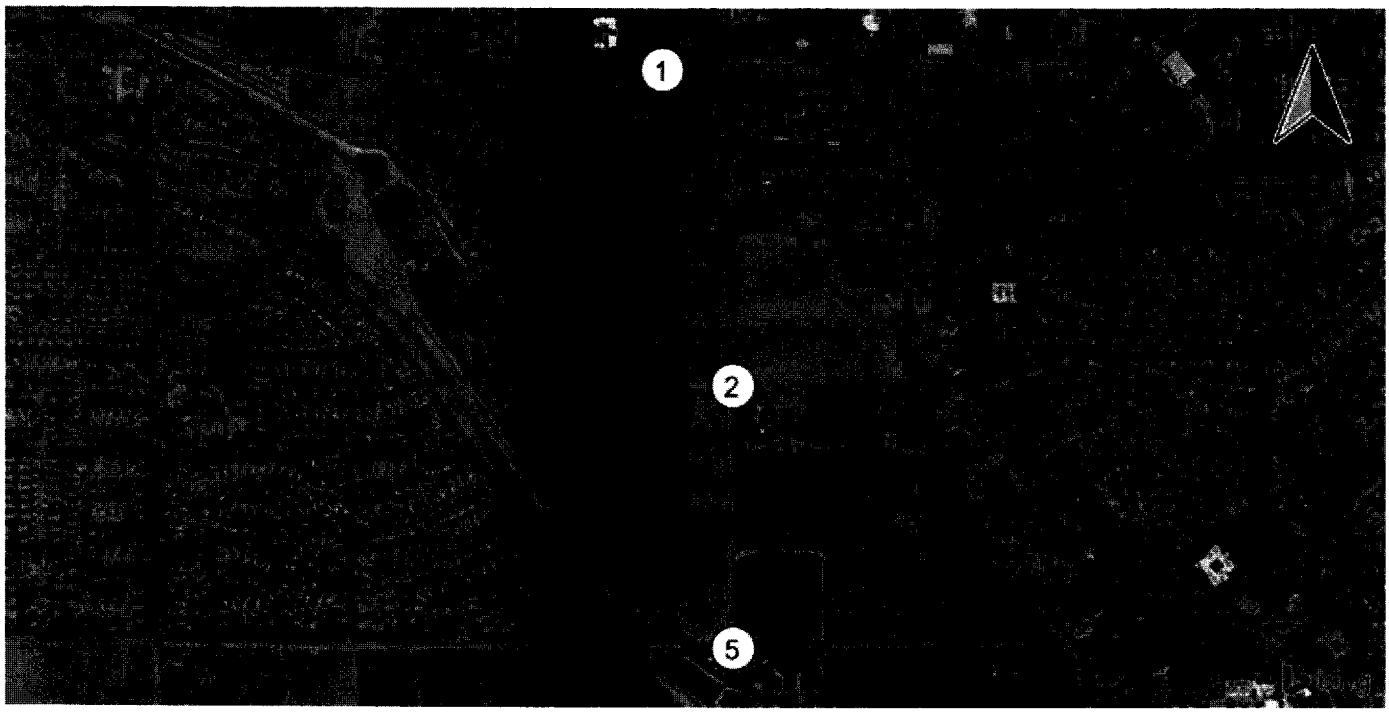


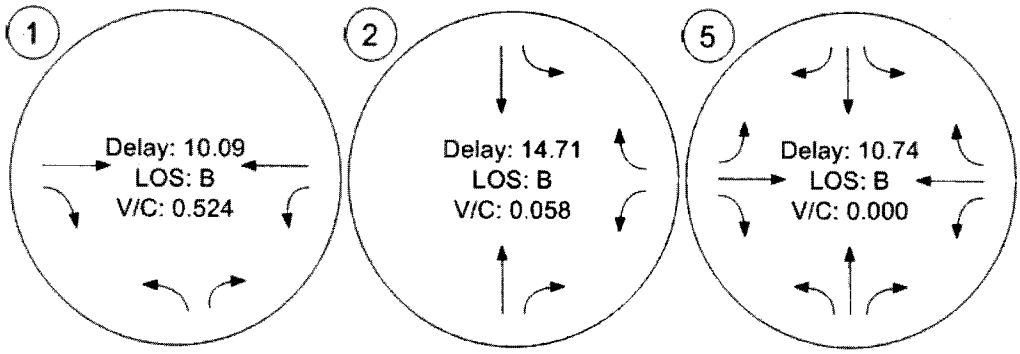
Traffic Volume - Future Total Volume





Traffic Conditions





Existing Plus Project

Islamic Community Center of Redlands

Vistro File: J:\...\E Friday Mid-Day.vistro

Scenario 2: Existing Plus Project - Friday Mid-Day Peak Hour

Report File: J:\...\EP Friday Mid-Day.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.418	9.3	A
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.070	12.9	B
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.004	9.1	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.003	9.1	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	9.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	138	94	772	141	86	754
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	27	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	97	772	168	113	754
Peak Hour Factor	0.9421	0.9421	0.9421	0.9421	0.9421	0.9421
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	26	205	45	30	200
Total Analysis Volume [veh/h]	151	103	819	178	120	800
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	15	0	30	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	36	36	5	45
g / C, Green / Cycle	0.12	0.12	0.59	0.59	0.09	0.75
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.23	0.11	0.07	0.22
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	213	191	2143	957	163	2710
d1, Uniform Delay [s]	25.53	25.00	6.46	5.62	26.66	2.43
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.27	2.38	0.52	0.43	6.26	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.54	0.38	0.19	0.73	0.30
d, Delay for Lane Group [s/veh]	29.80	27.37	6.98	6.05	32.92	2.71
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.21	1.43	2.22	0.89	1.87	0.77
50th-Percentile Queue Length [ft]	55.14	35.74	55.38	22.32	46.67	19.20
95th-Percentile Queue Length [veh]	3.97	2.57	3.99	1.61	3.36	1.38
95th-Percentile Queue Length [ft]	99.25	64.33	99.68	40.18	84.01	34.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.80	27.37	6.98	6.05	32.92	2.71
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	28.82		6.82		6.65	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.32					
Intersection LOS	A					
Intersection V/C	0.418					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.070

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	25	1	201	41	0	201
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	54	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	1	201	95	0	201
Peak Hour Factor	0.9381	0.9381	0.9381	0.9381	0.9381	0.9381
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	54	25	0	54
Total Analysis Volume [veh/h]	34	1	214	101	0	214
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.93	10.18	0.00	0.00	7.75	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.23	0.23	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	5.71	5.71	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.86		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	20	28	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	3	23	31	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	23	51	31	4	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	13	8	1	0
Total Analysis Volume [veh/h]	8	23	51	31	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	0.00	9.06	8.61
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.06	0.06	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	1.55	1.55	0.00	0.00	0.41	0.41
d_A, Approach Delay [s/veh]	1.90		0.00		8.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.88					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	20	28	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	8	1	23	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	28	29	23	3	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	7	6	1	1
Total Analysis Volume [veh/h]	16	28	29	23	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	0.00	9.05	8.50
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.17	2.17	0.00	0.00	0.47	0.47
d_A, Approach Delay [s/veh]	2.66		0.00		8.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.66					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	5	0	23	15	60	0	0	51	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	12	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	7	0	25	27	60	0	0	51	17
Peak Hour Factor	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	8	8	18	0	0	16	5
Total Analysis Volume [veh/h]	0	0	0	9	0	31	33	73	0	0	62	21
Pedestrian Volume [ped/h]	0			0			0			0		

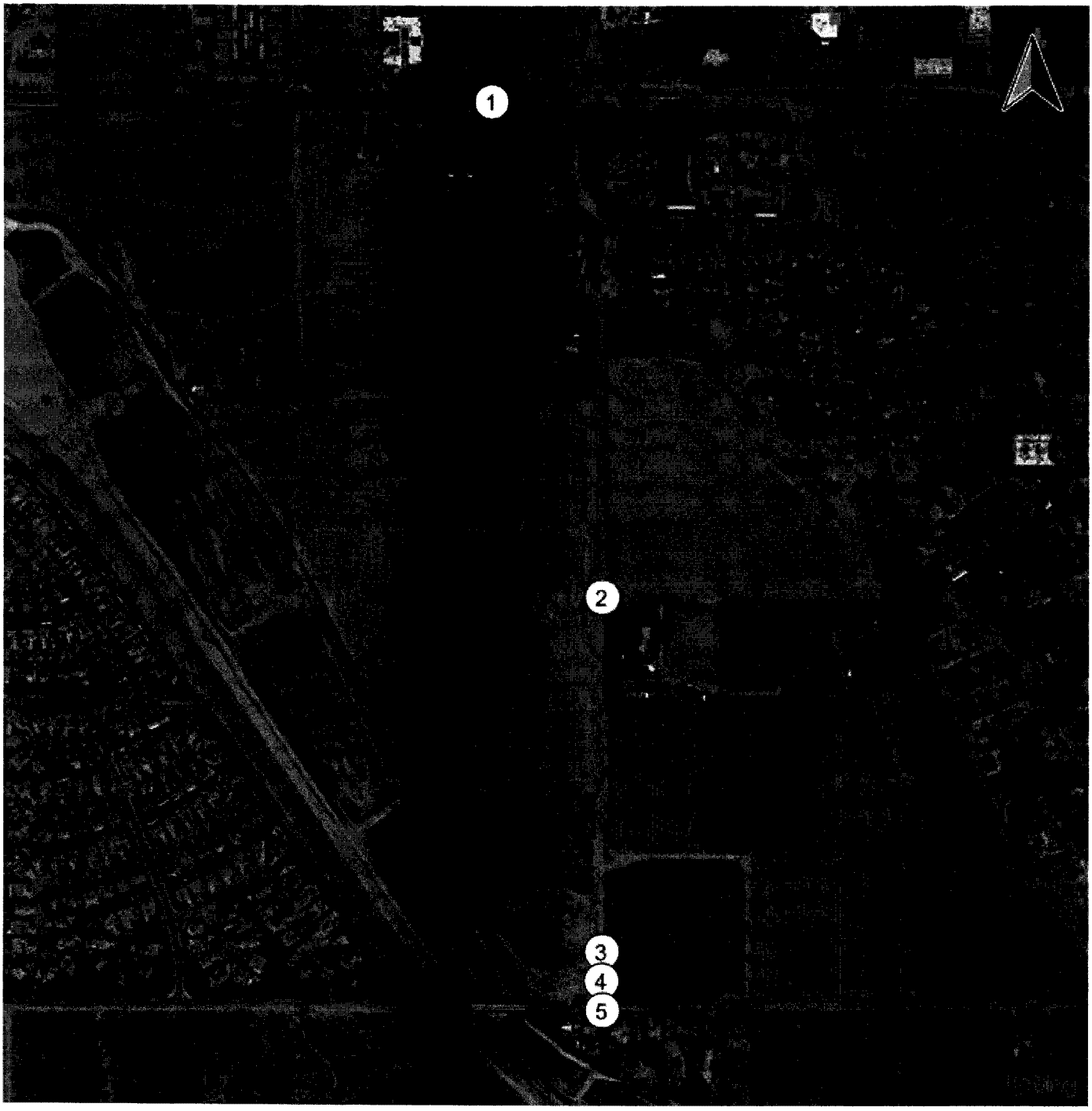
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

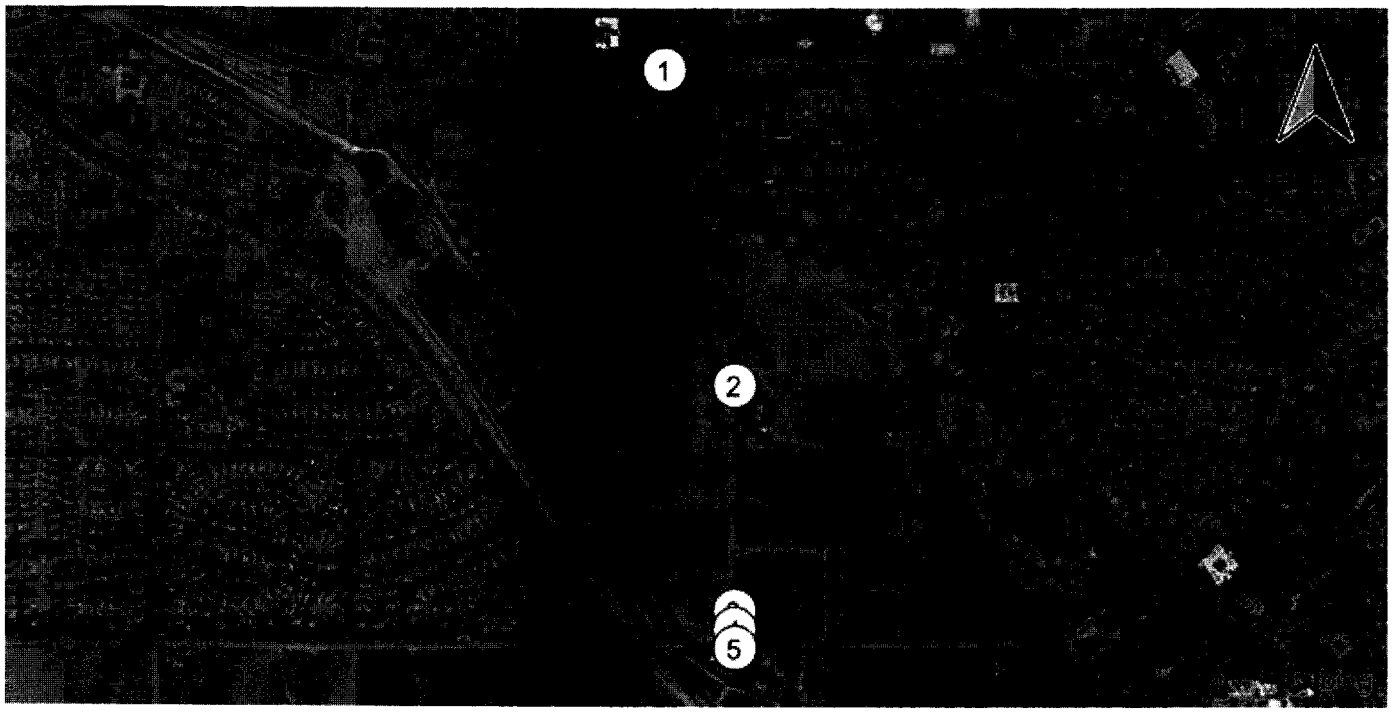
Movement, Approach, & Intersection Results

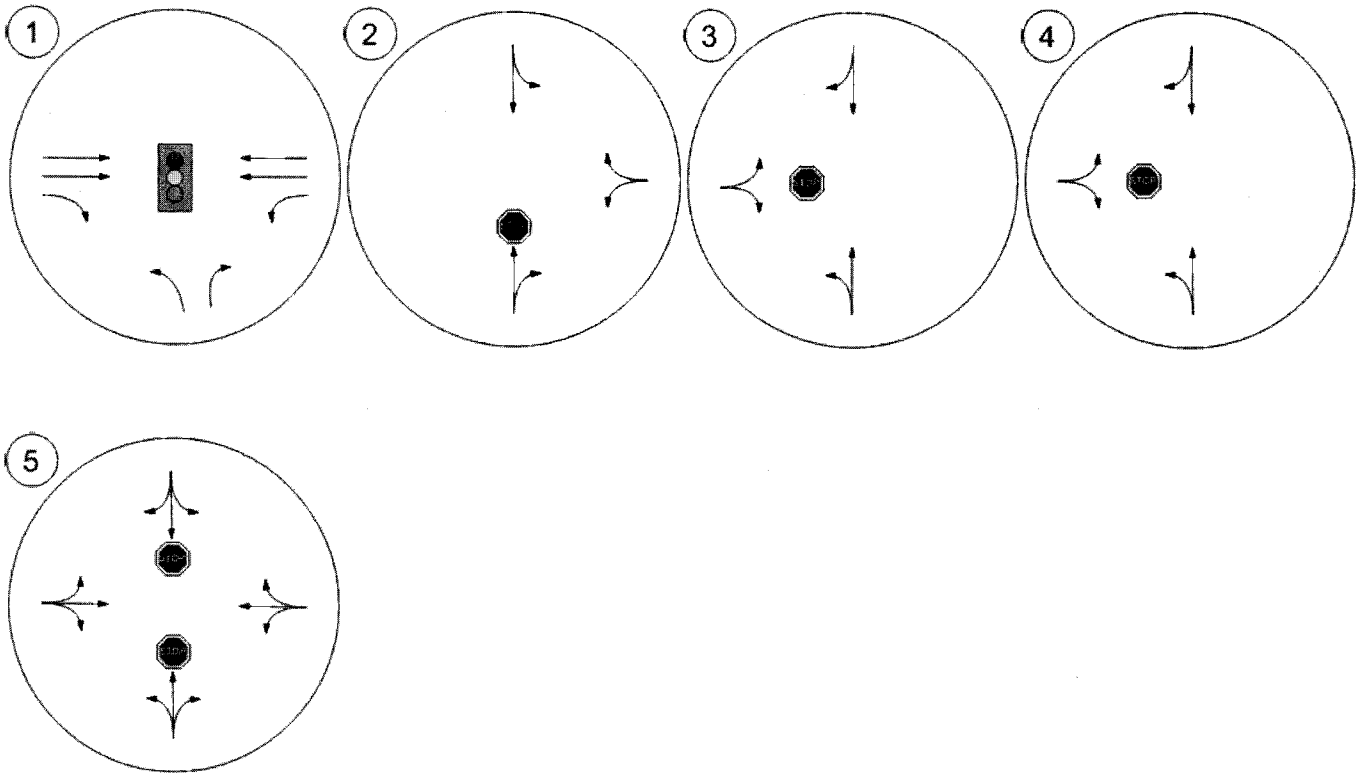
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.16	10.41	8.62	10.06	10.52	8.79	7.41	0.00	0.00	7.34	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.14	0.14	0.14	0.22	0.22	0.22	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	3.40	3.40	3.40	5.59	5.59	5.59	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.73			9.08			2.31			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.65											
Intersection LOS	B											

Study Intersections

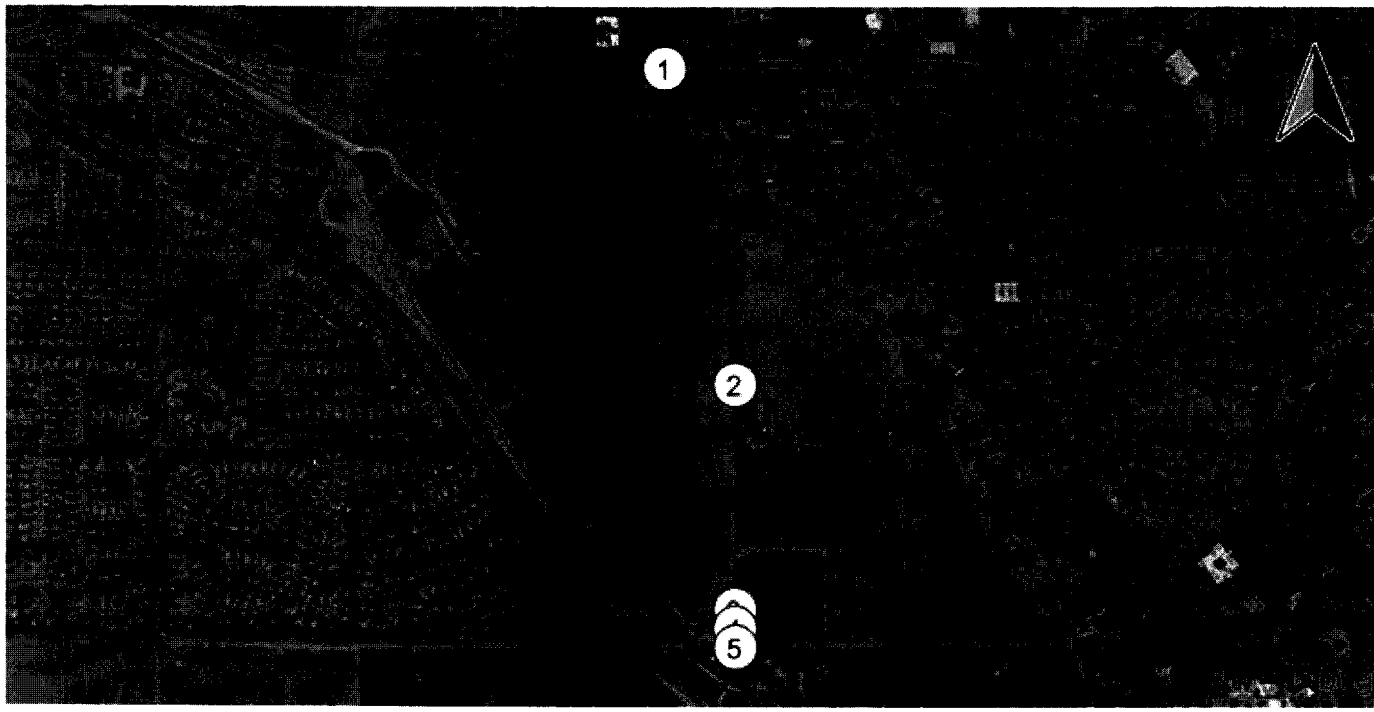


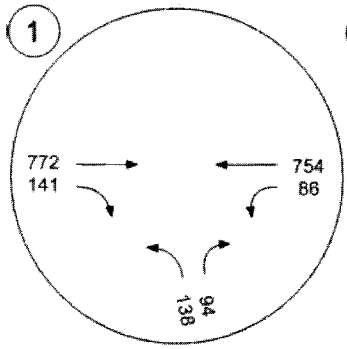
Lane Configuration and Traffic Control

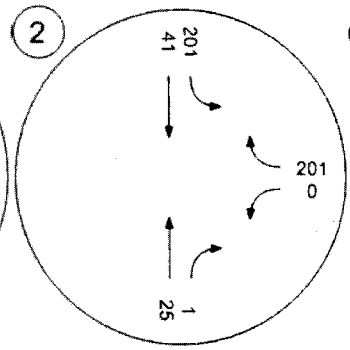


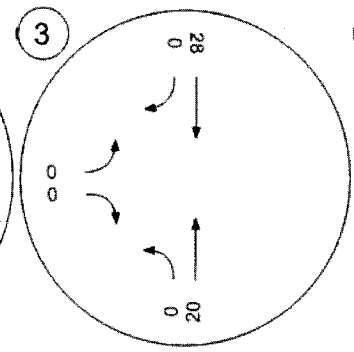


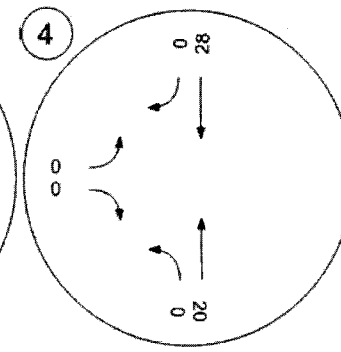
Traffic Volume - Base Volume

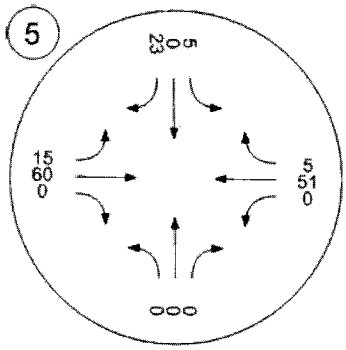




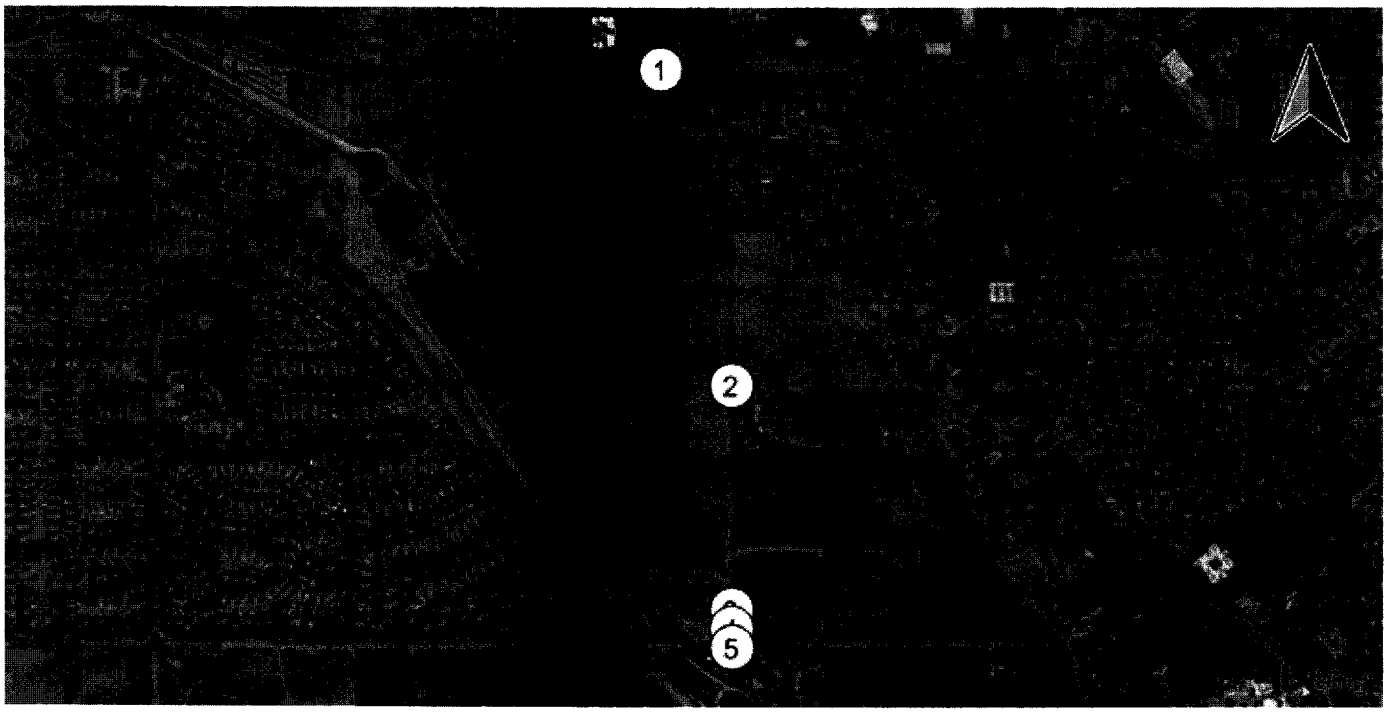


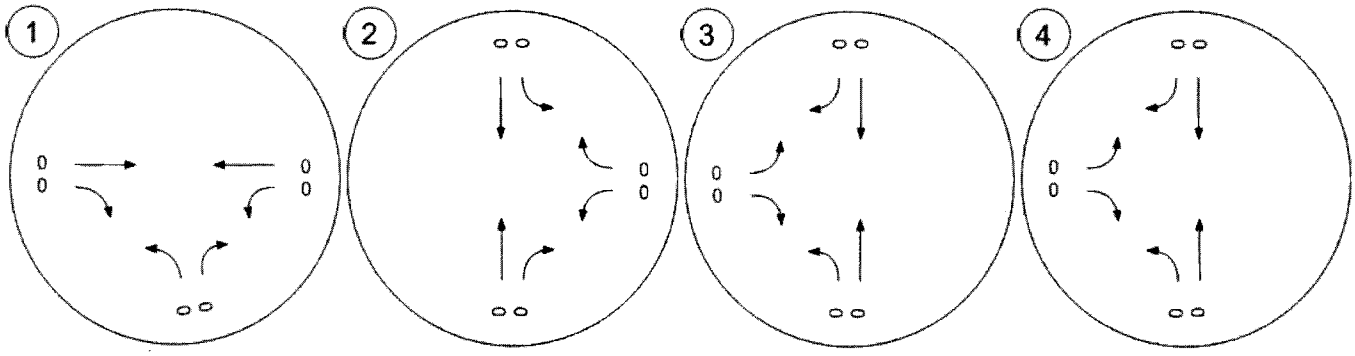


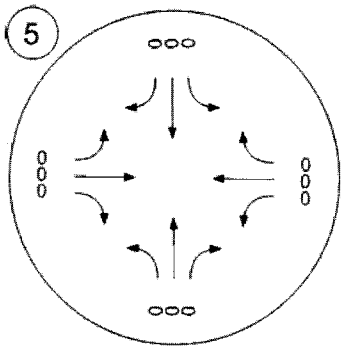




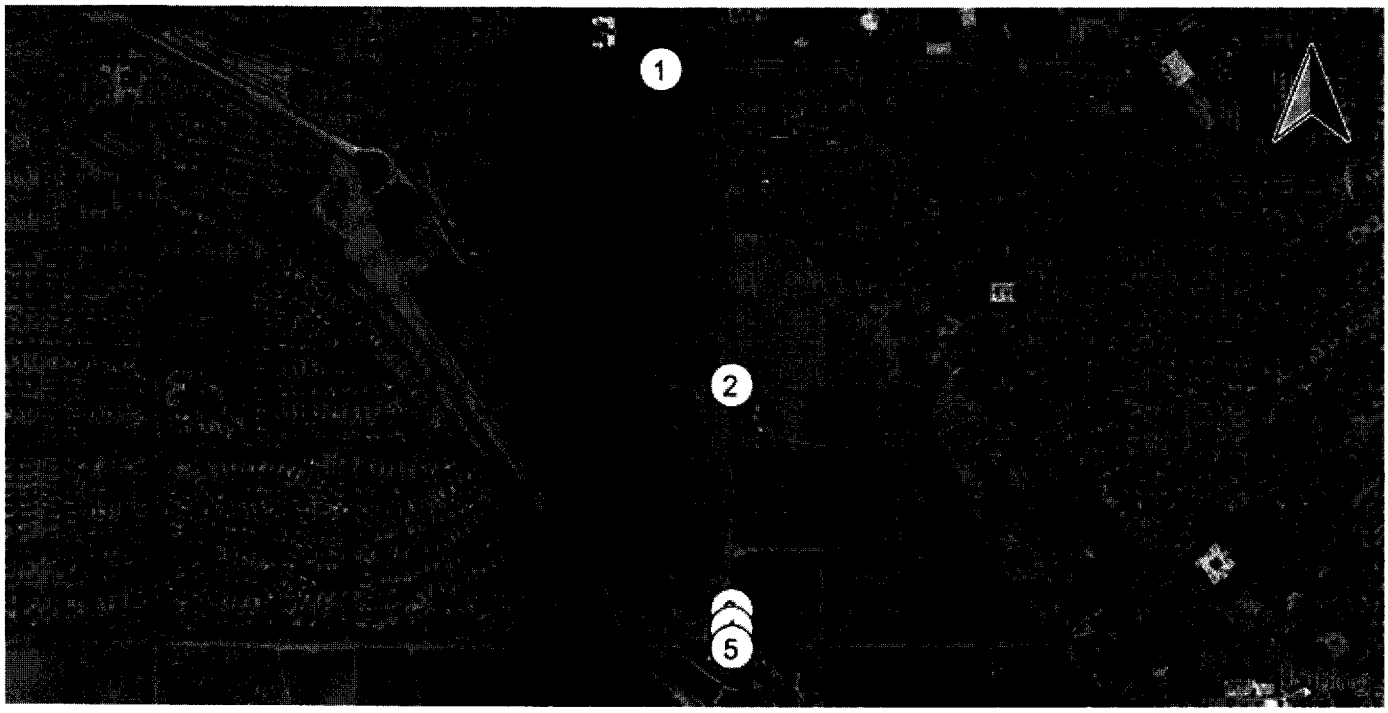
Traffic Volume - In-Process Volume

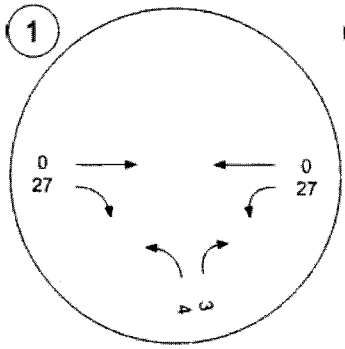


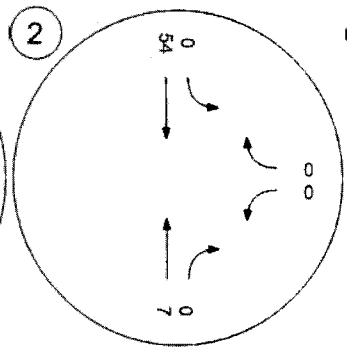


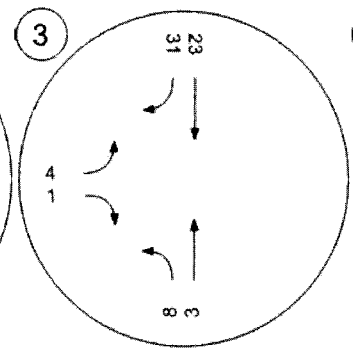


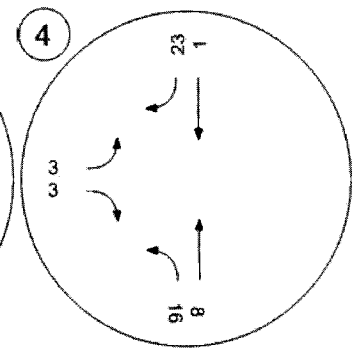
Traffic Volume - Net New Site Trips

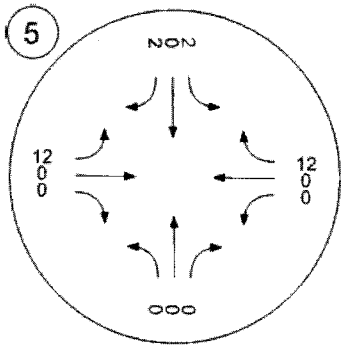




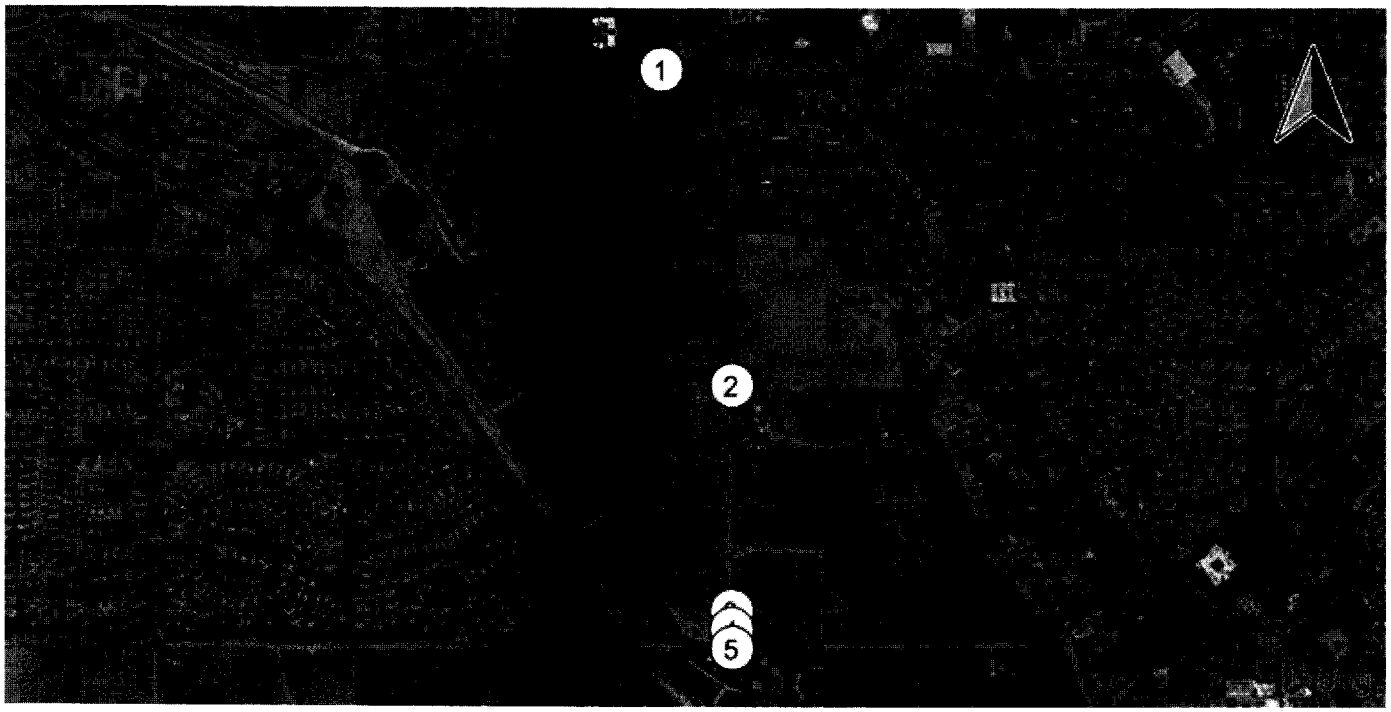


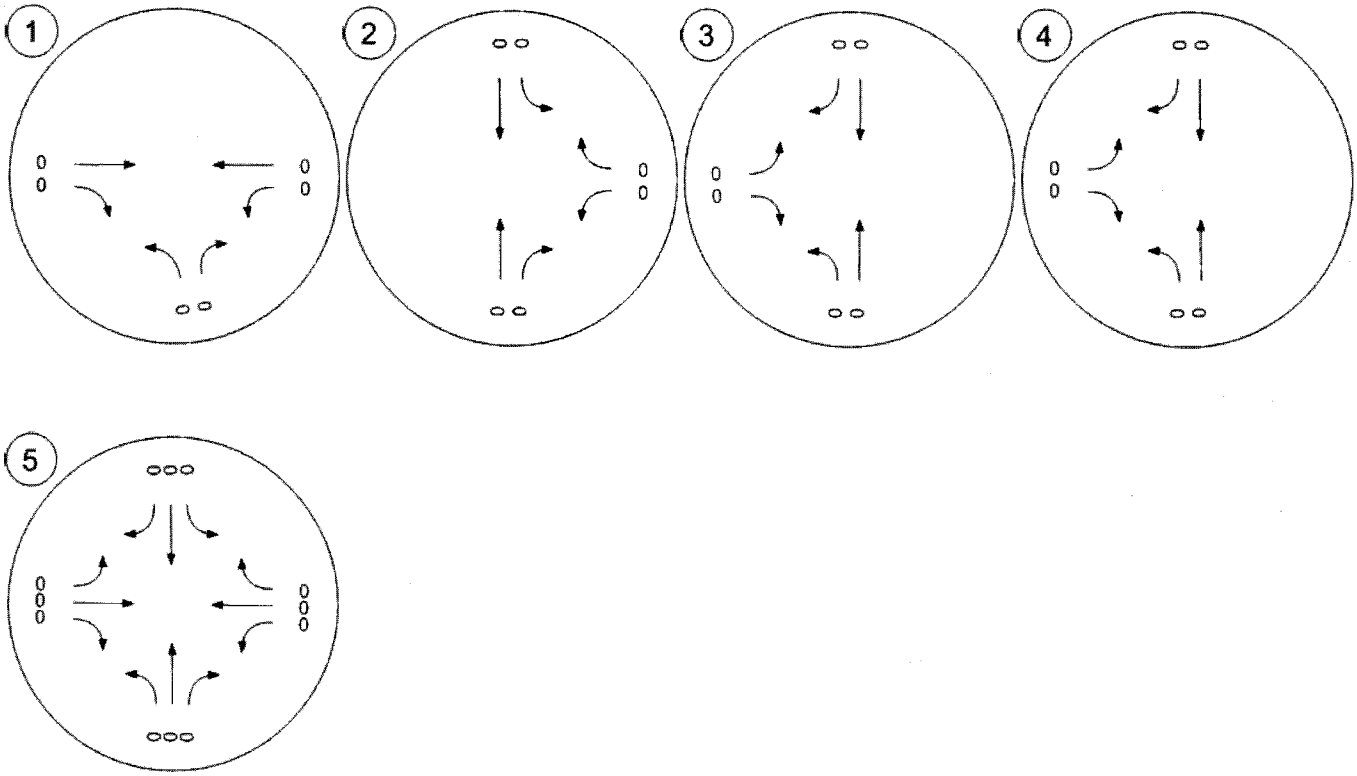




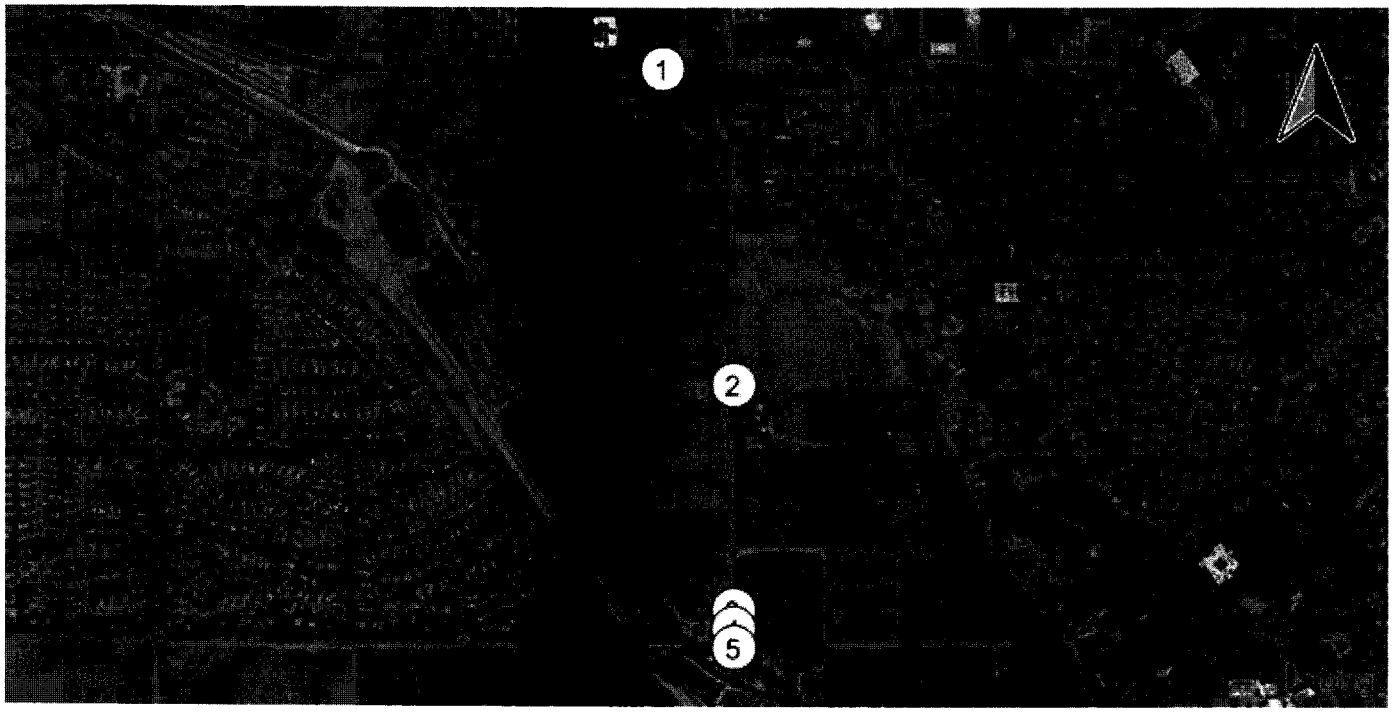


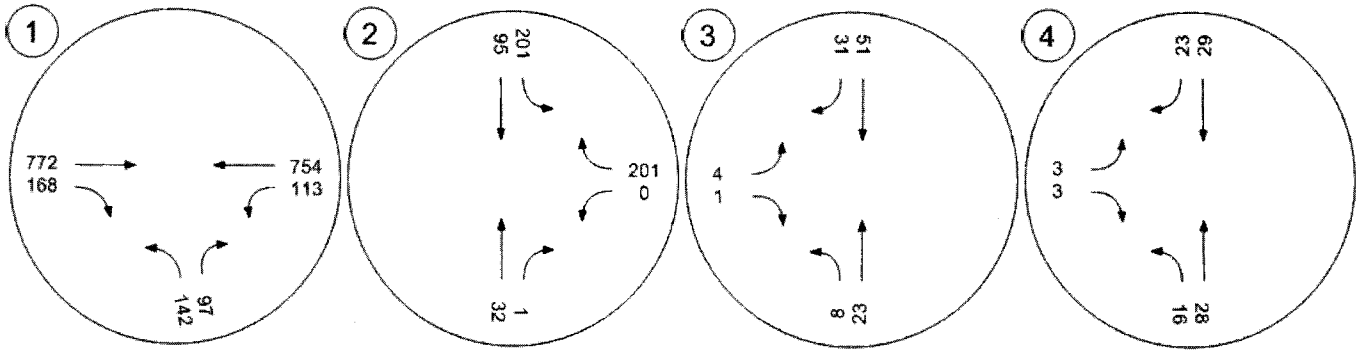
Traffic Volume - Other Volume

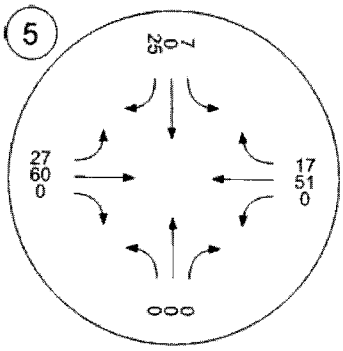




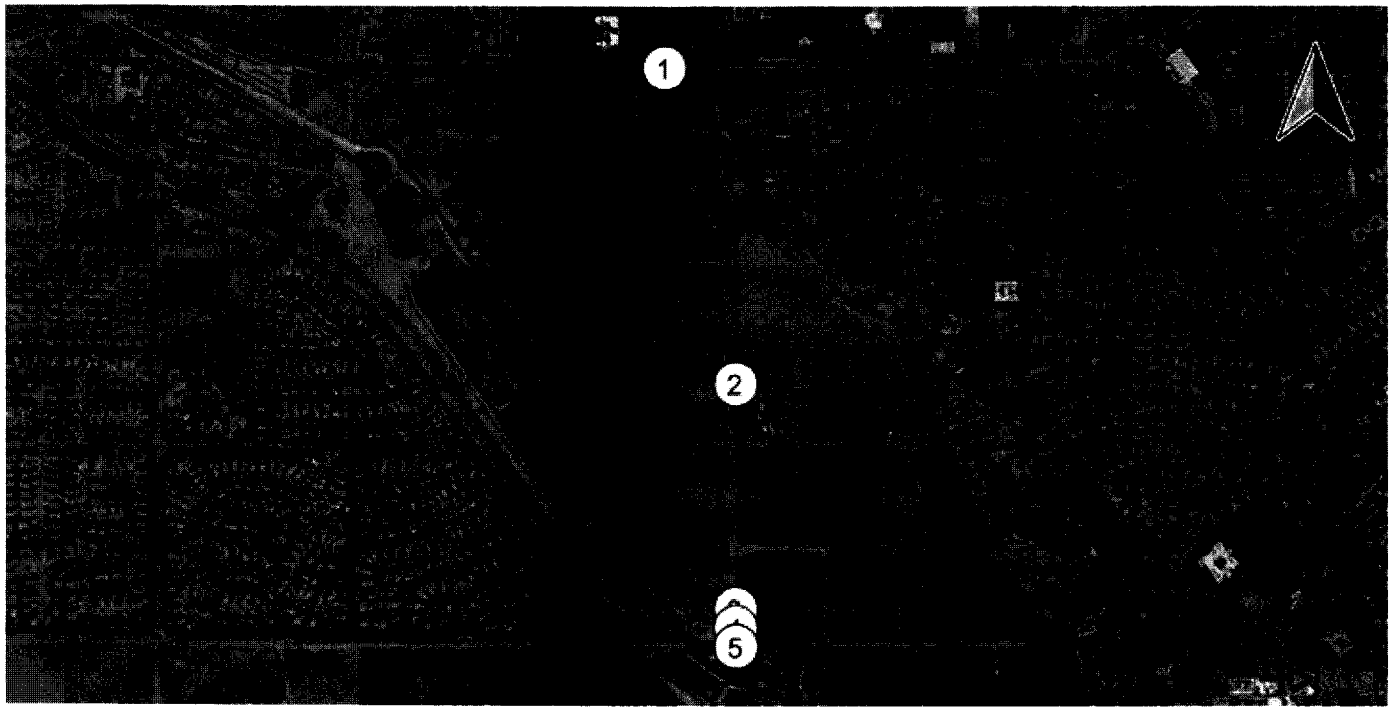
Traffic Volume - Future Total Volume

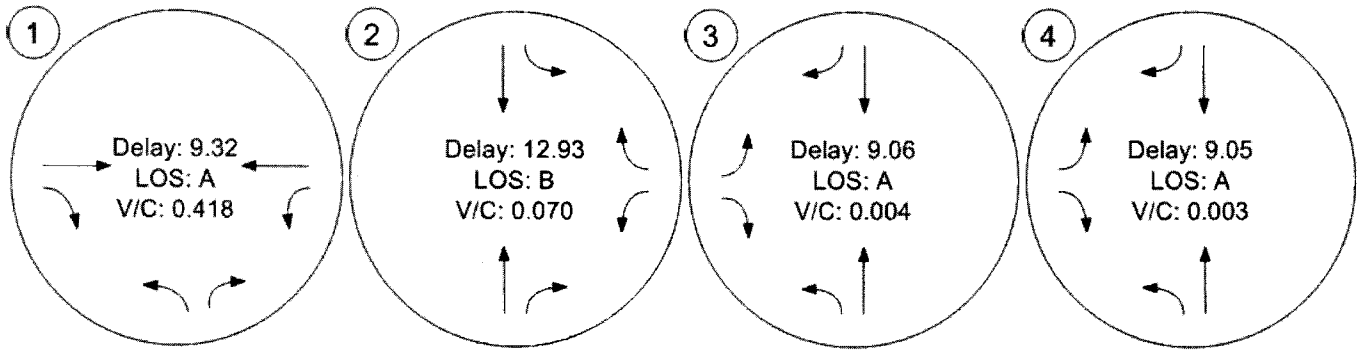


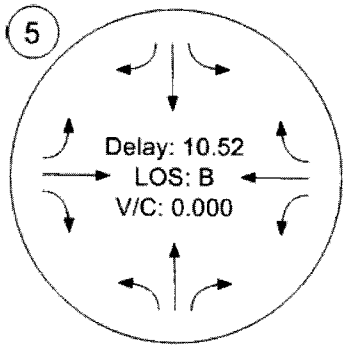




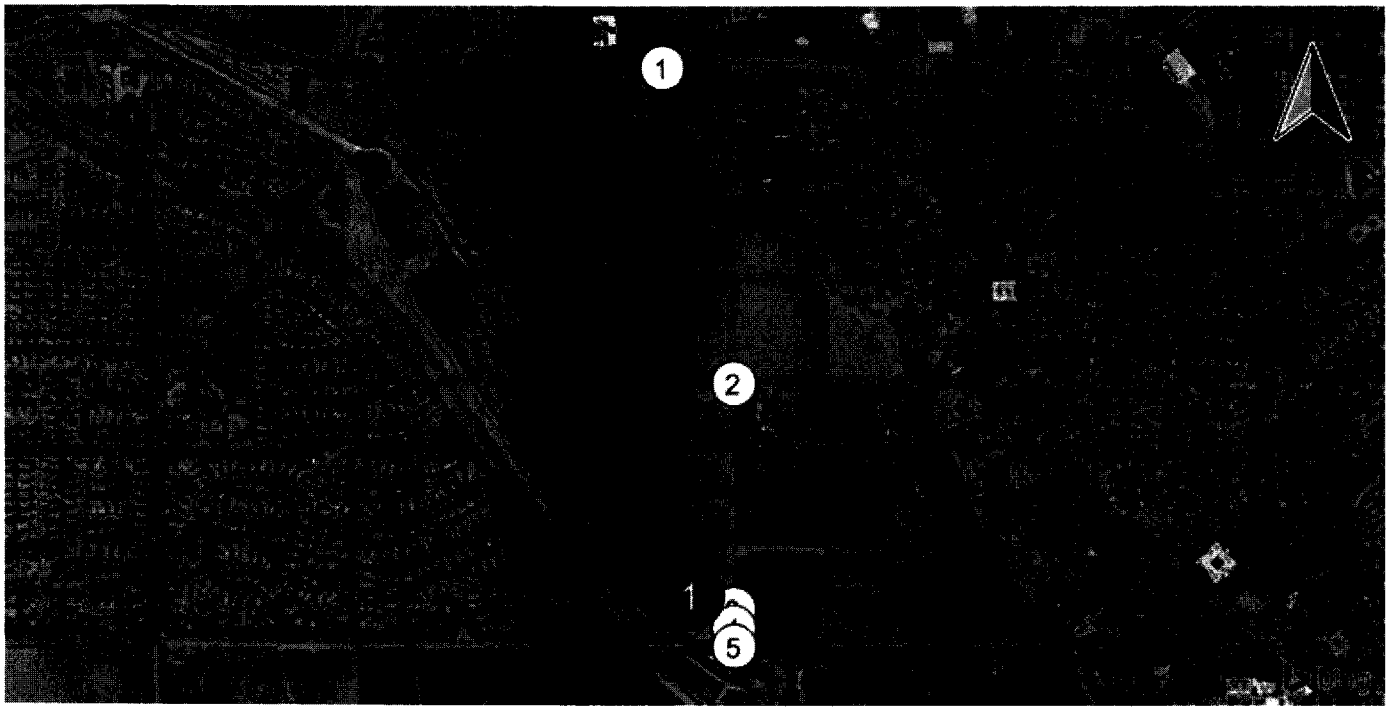
Traffic Conditions

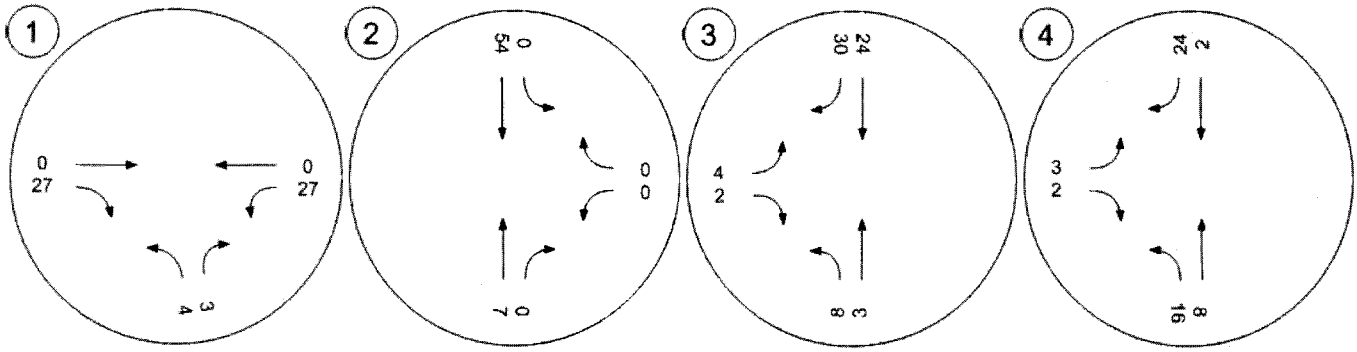


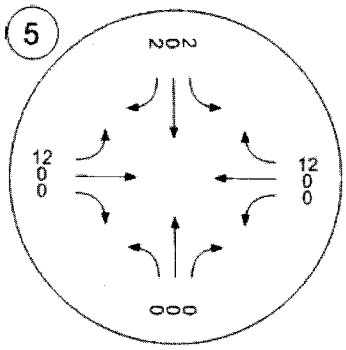




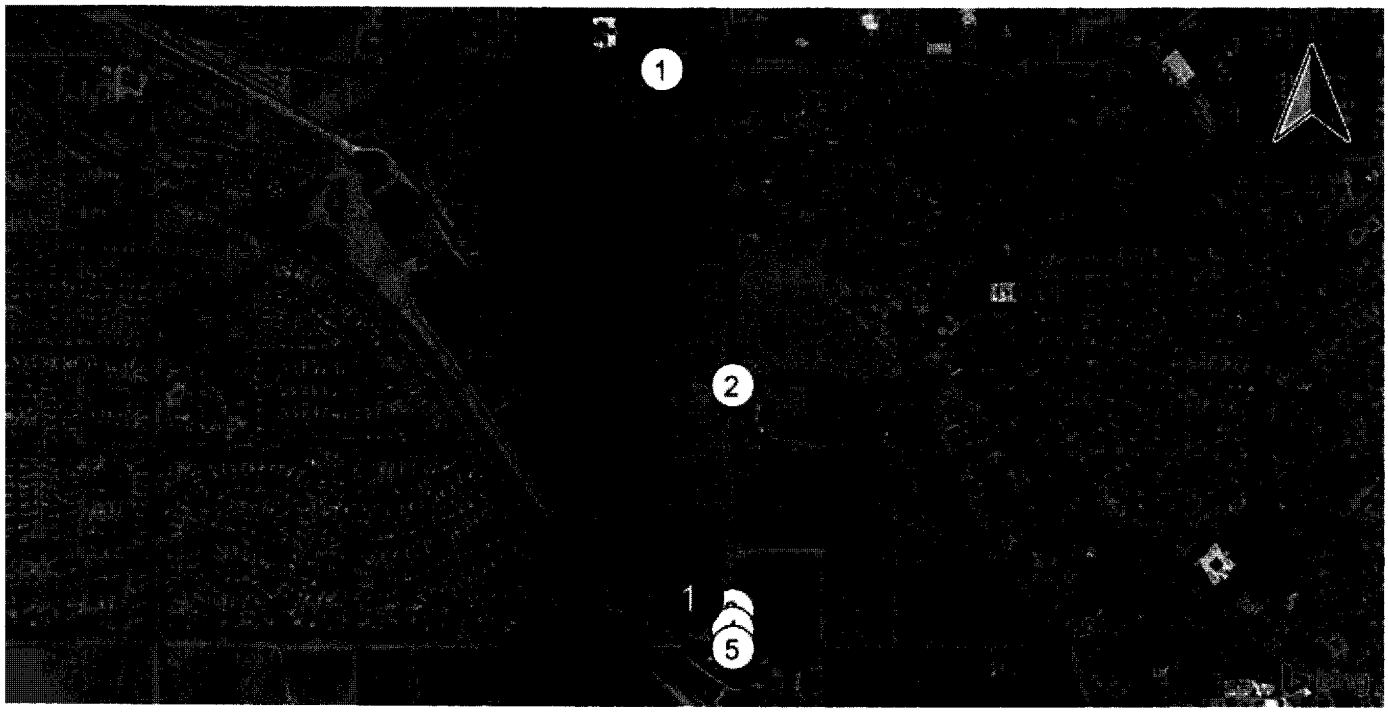
Fair Share - Fair Share Volumes - Zone 1: Project

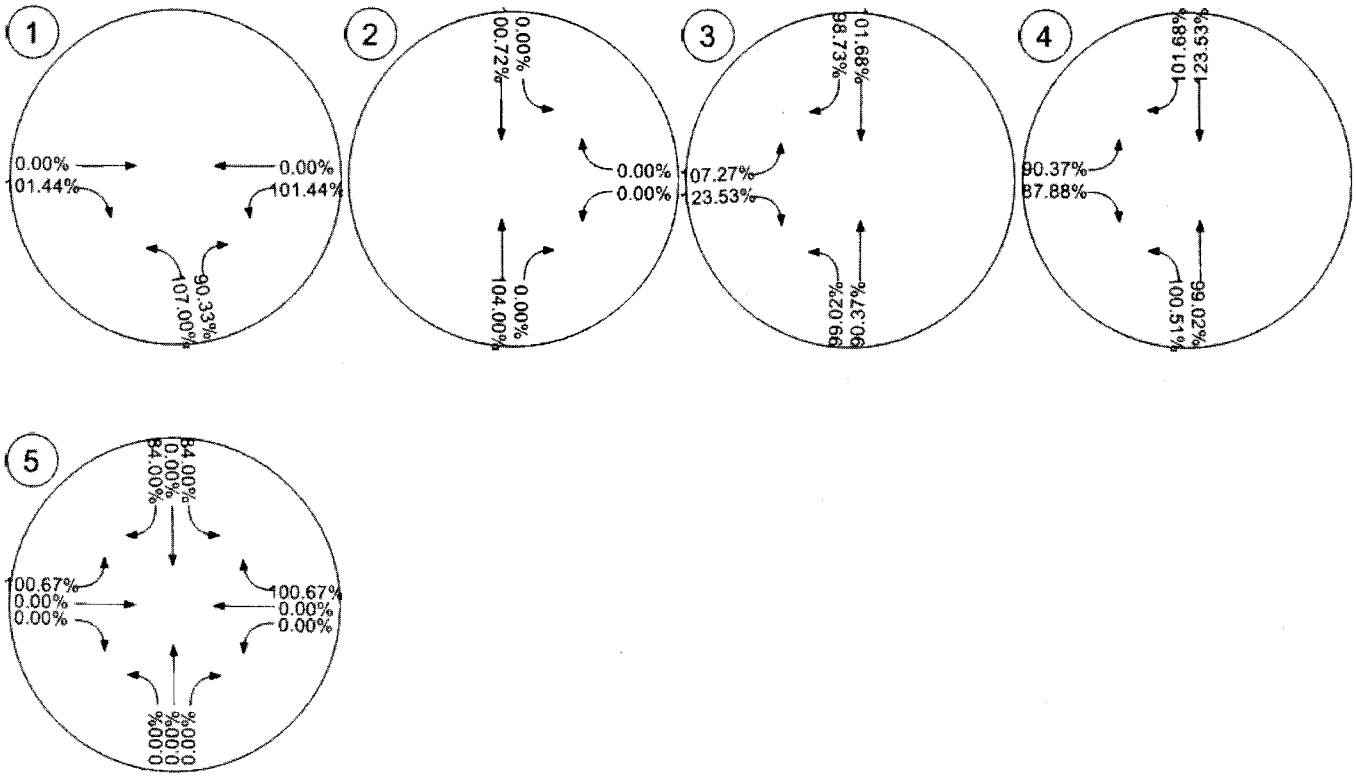




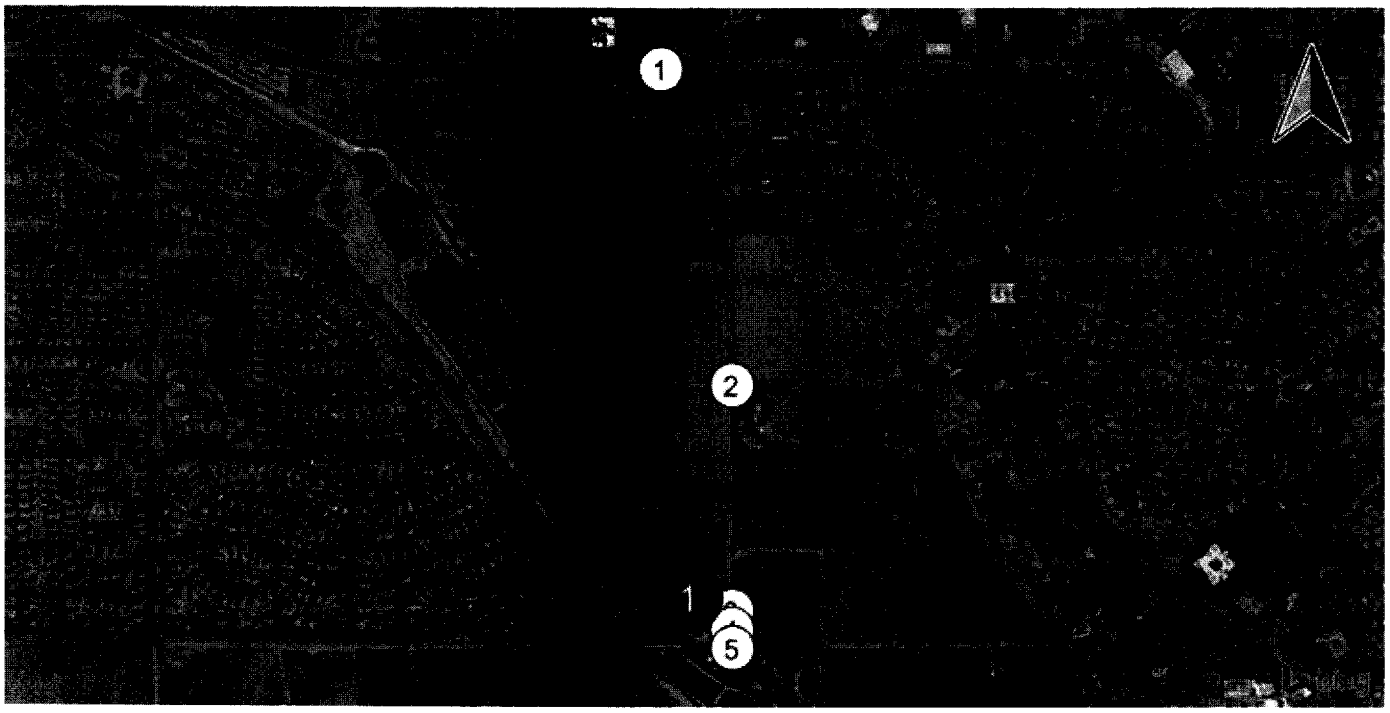


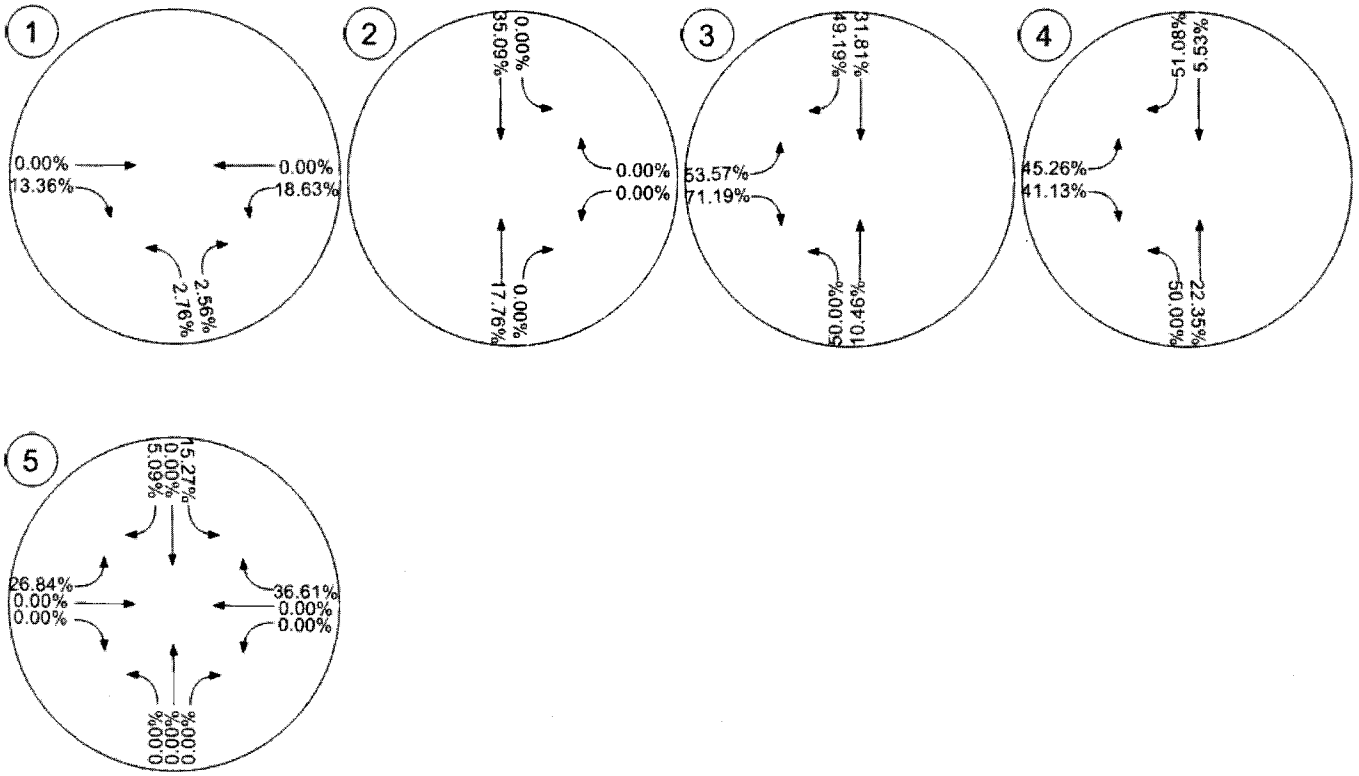
Fair Share - Fair Share % of Net New Site - Zone 1: Project





Fair Share - Fair Share % of Total Analysis - Zone 1: Project





Islamic Community Center of Redlands

Vistro File: J:\...\E Friday Evening.vistro

Scenario 2: Existing Plus Project - Friday Evening Peak Hour

Report File: J:\...\EP Friday Evening.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.542	10.8	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.079	15.3	C
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.005	9.2	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.003	9.1	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	133	93	1089	277	146	674
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	24	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	96	1089	301	170	674
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	25	282	78	44	175
Total Analysis Volume [veh/h]	142	99	1128	312	176	698
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	21	0	19	0	20	39
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	34	34	8	45
g / C, Green / Cycle	0.11	0.11	0.56	0.56	0.13	0.75
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.31	0.19	0.10	0.19
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	209	186	2016	900	232	2719
d1, Uniform Delay [s]	25.54	25.07	8.57	7.31	25.34	2.30
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.85	2.34	1.13	1.06	5.09	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.53	0.56	0.35	0.76	0.26
d, Delay for Lane Group [s/veh]	29.39	27.41	9.70	8.37	30.43	2.53
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.06	1.38	3.99	2.00	2.61	0.63
50th-Percentile Queue Length [ft]	51.40	34.38	99.72	49.94	65.13	15.67
95th-Percentile Queue Length [veh]	3.70	2.48	7.18	3.60	4.69	1.13
95th-Percentile Queue Length [ft]	92.52	61.89	179.50	89.89	117.23	28.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.39	27.41	9.70	8.37	30.43	2.53
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	28.58		9.41		8.15	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	10.79					
Intersection LOS	B					
Intersection V/C	0.542					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	22	0	398	30	0	201
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	48	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	0	398	78	0	201
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	104	20	0	53
Total Analysis Volume [veh/h]	30	0	416	82	0	210
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.27	11.73	0.00	0.00	8.23	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.26	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.38	6.38	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.27		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	29	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	3	21	27	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	32	66	27	4	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	8	17	7	1	0
Total Analysis Volume [veh/h]	7	32	66	27	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.39	0.00	0.00	0.00	9.16	8.67
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	1.98	1.98	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	1.33		0.00		9.06	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	29	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	7	1	21	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	36	46	21	3	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	9	12	5	1	1
Total Analysis Volume [veh/h]	13	36	46	21	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.14	8.57
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.45	2.45	0.00	0.00	0.48	0.48
d_A, Approach Delay [s/veh]	1.95		0.00		8.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.22					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	8	0	37	26	111	0	0	57	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	10	0	39	36	111	0	0	57	13
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	11	10	30	0	0	16	4
Total Analysis Volume [veh/h]	0	0	1	11	0	42	39	121	0	0	62	14
Pedestrian Volume [ped/h]	0			0			0			0		

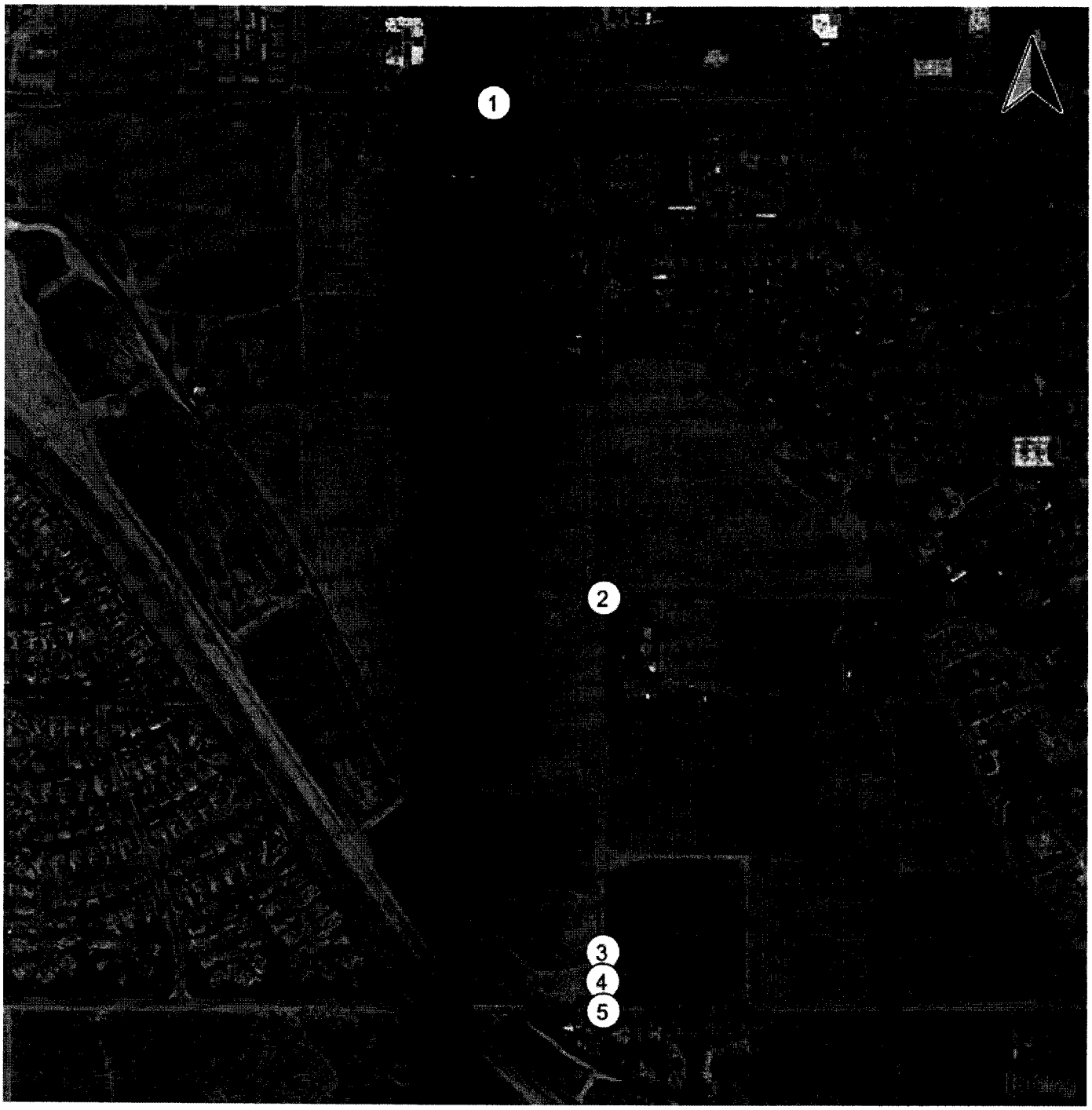
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

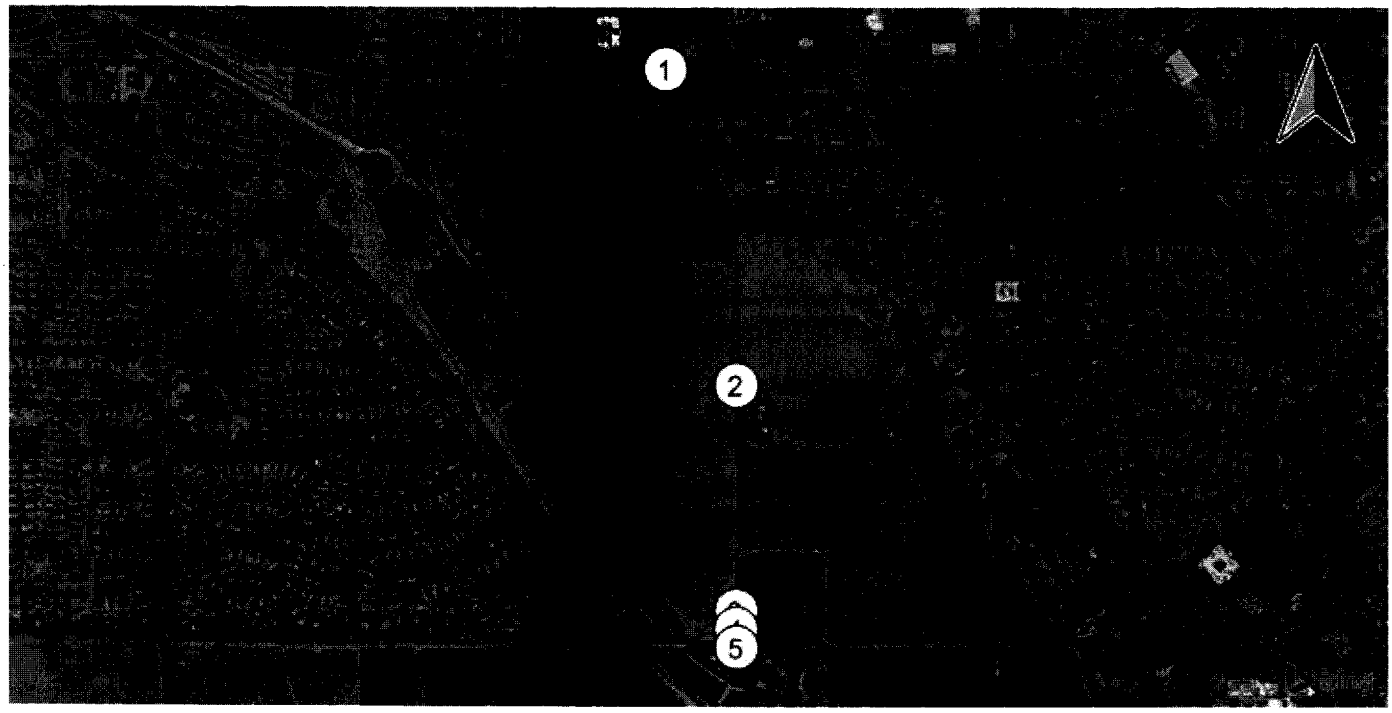
Movement, Approach, & Intersection Results

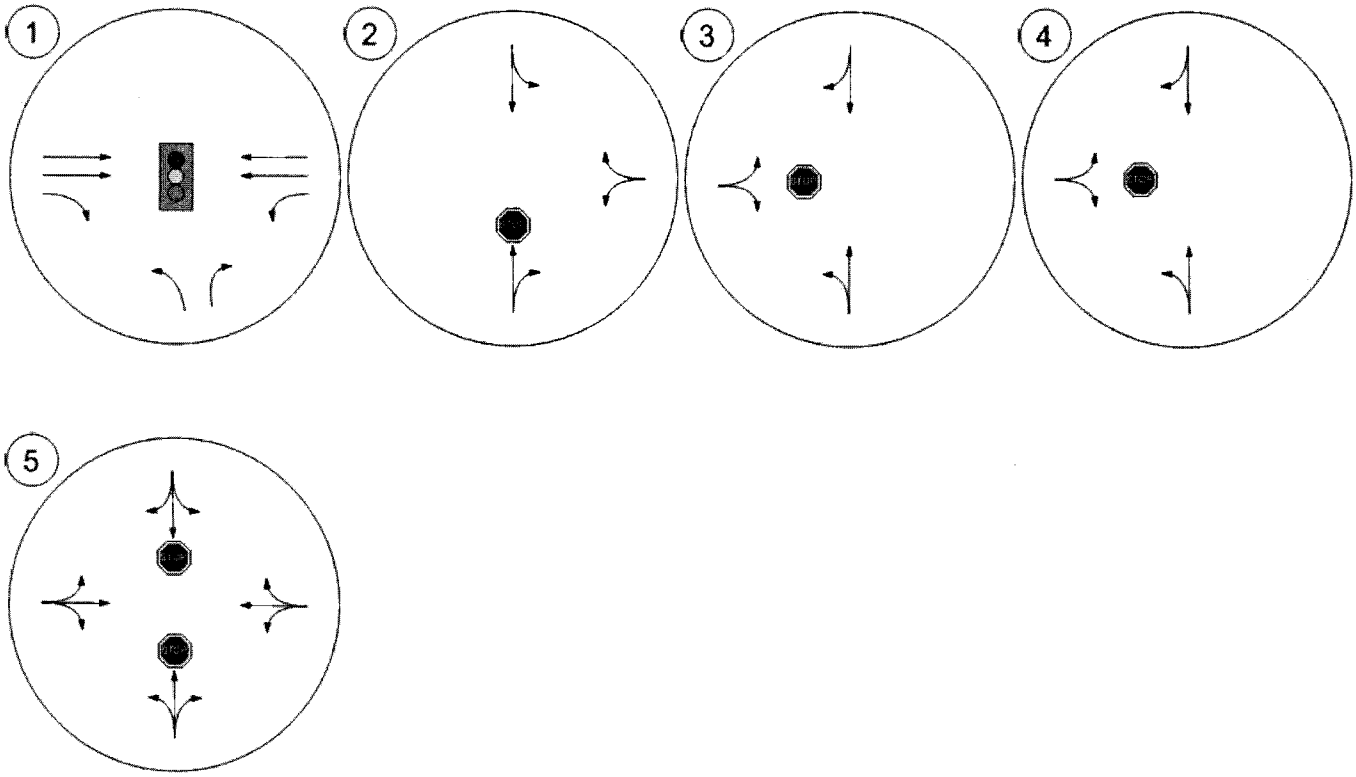
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.76	10.83	8.85	10.59	11.02	8.85	7.41	0.00	0.00	7.43	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.19	0.19	0.19	0.35	0.35	0.35	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	4.64	4.64	4.64	8.70	8.70	8.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.85			9.21			1.80			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.71											
Intersection LOS	B											

Study Intersections

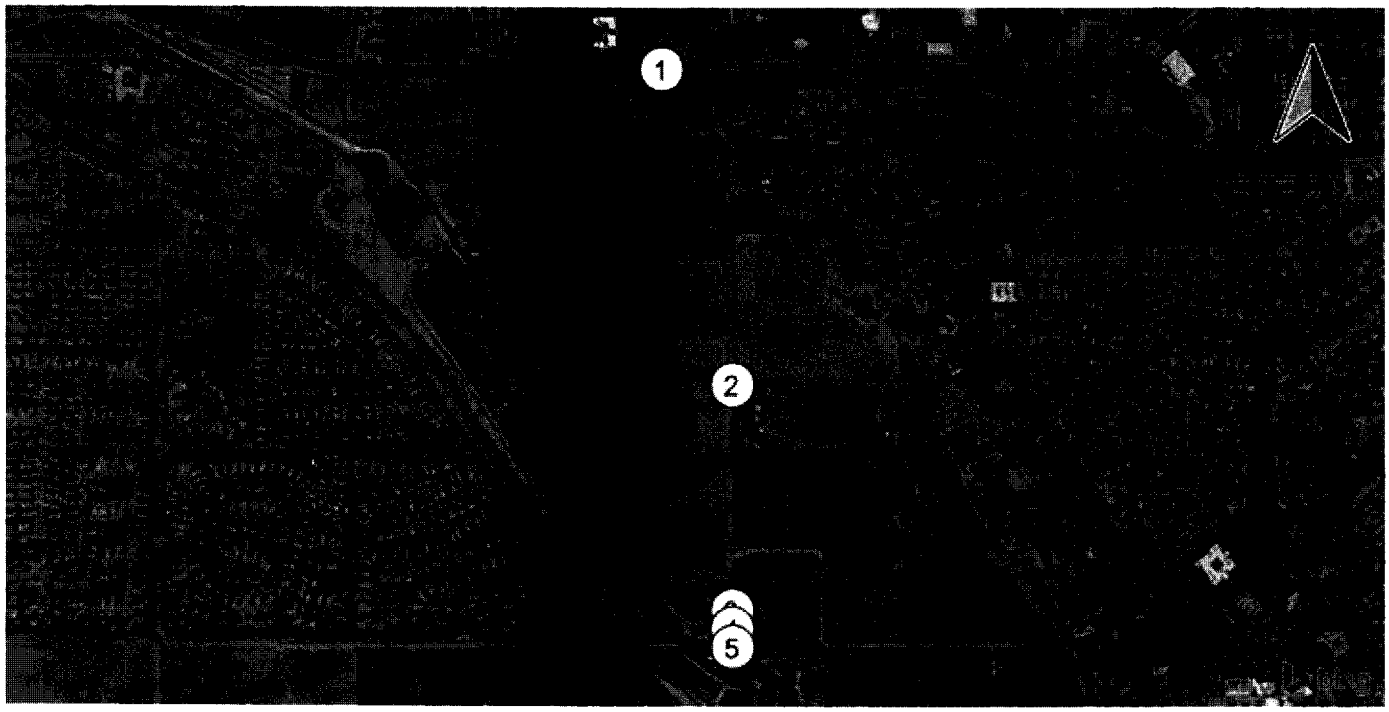


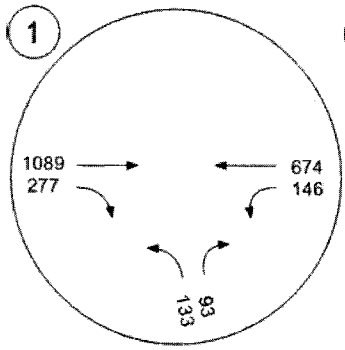
Lane Configuration and Traffic Control

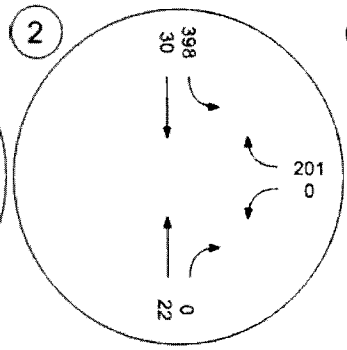


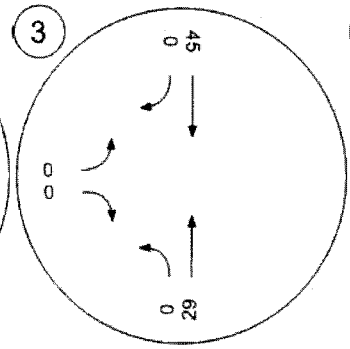


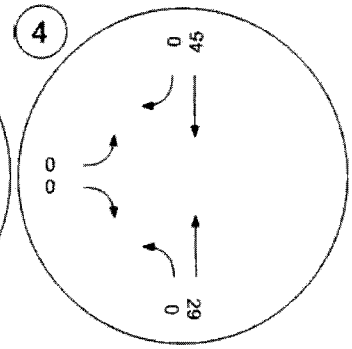
Traffic Volume - Base Volume

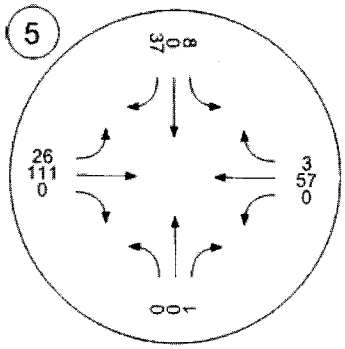




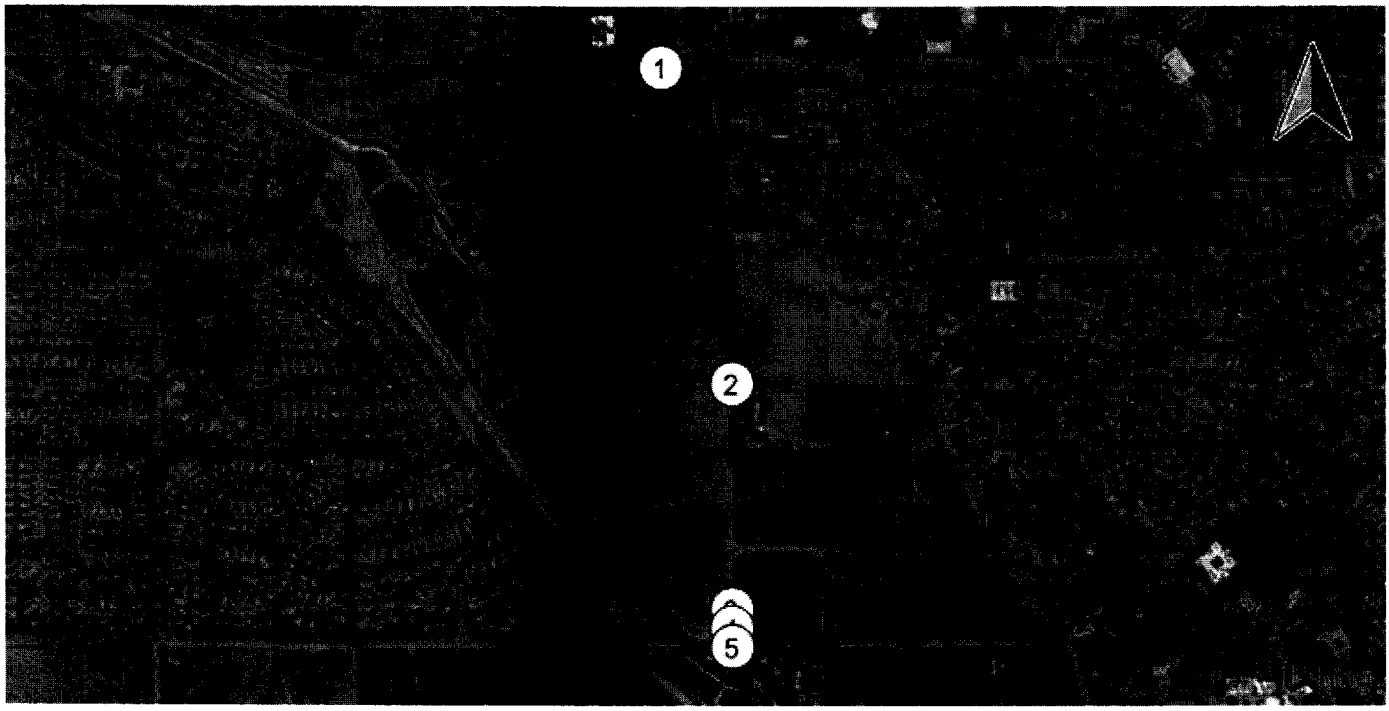


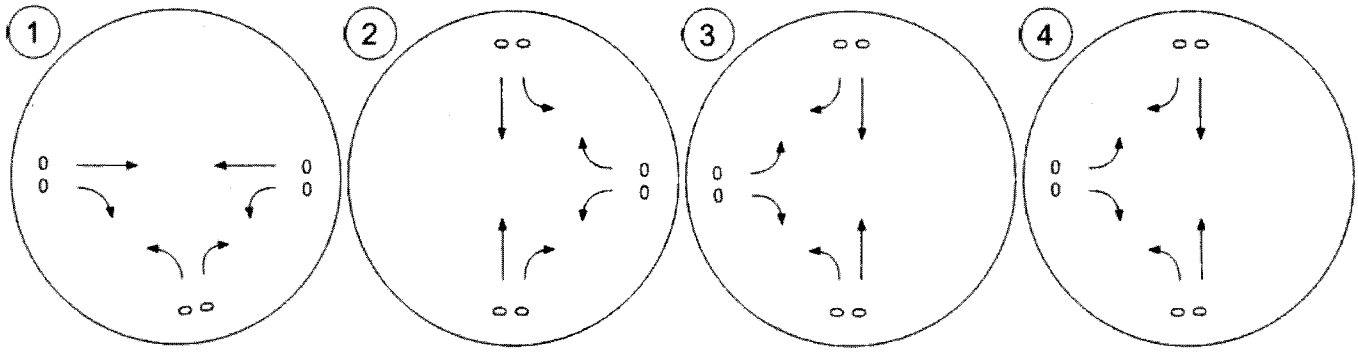


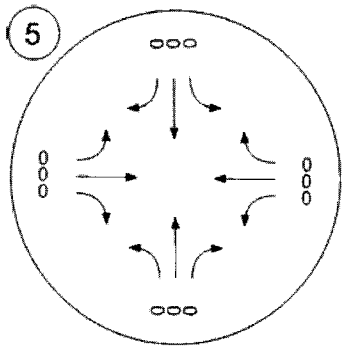




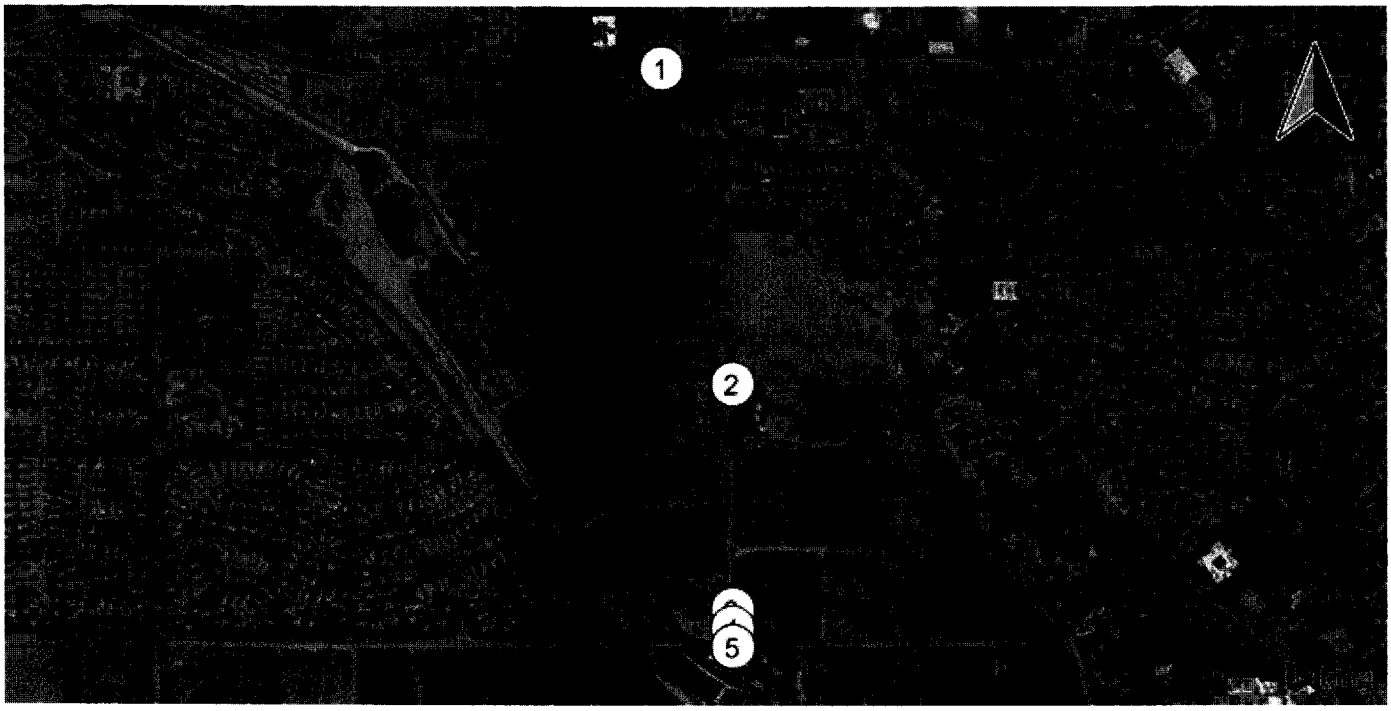
Traffic Volume - In-Process Volume

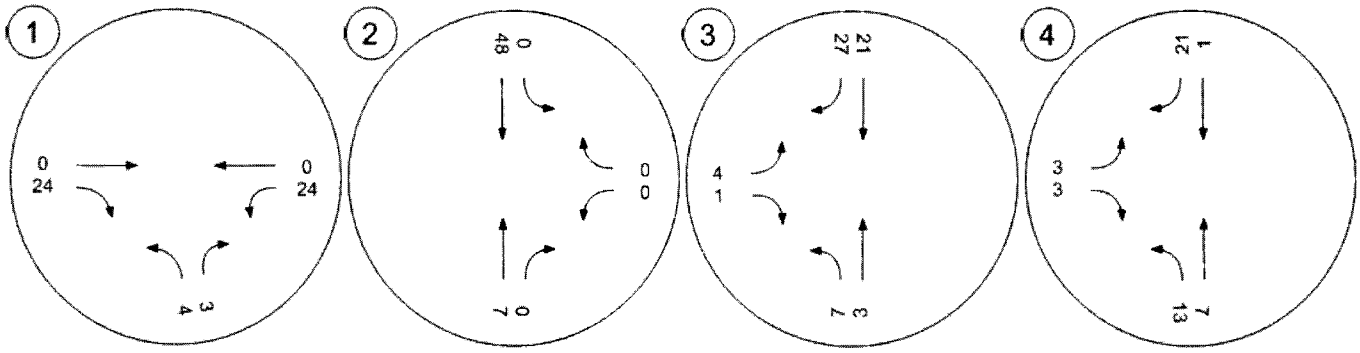


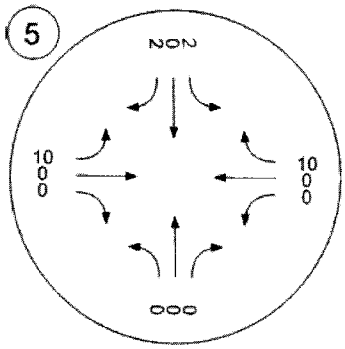




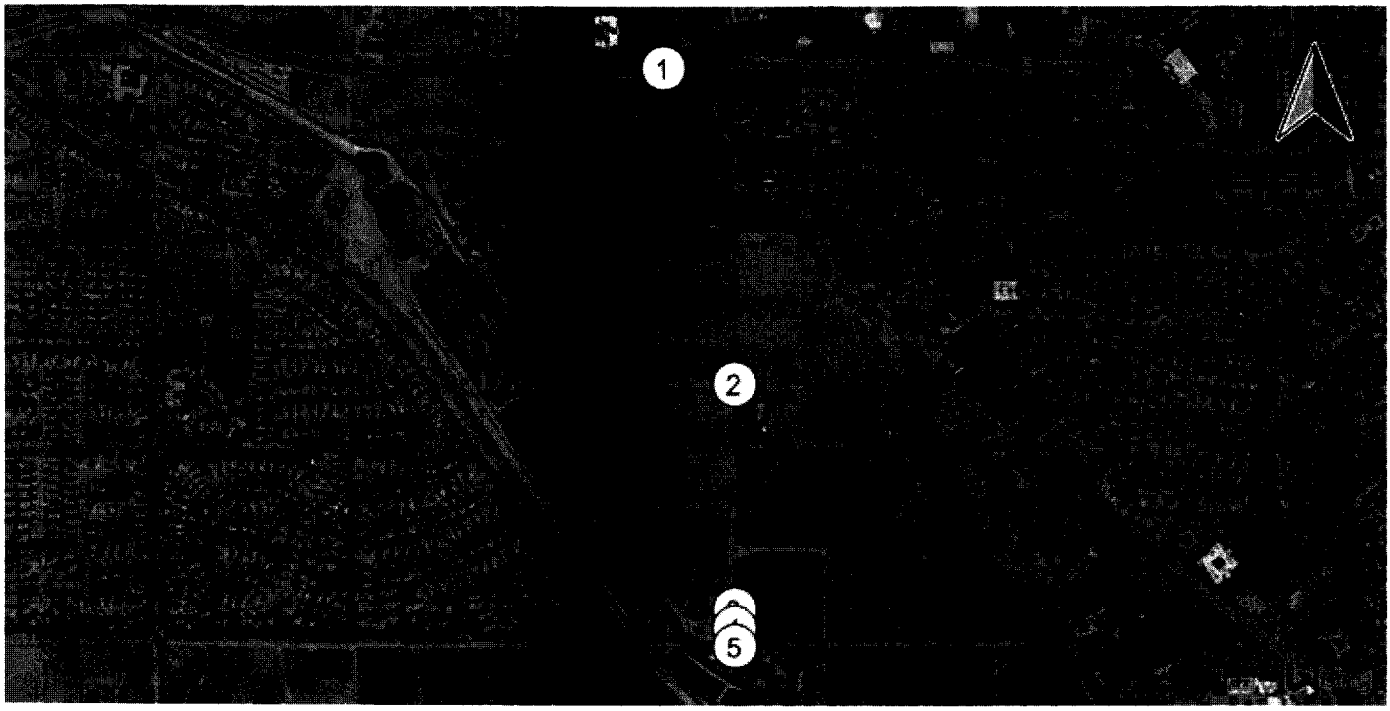
Traffic Volume - Net New Site Trips

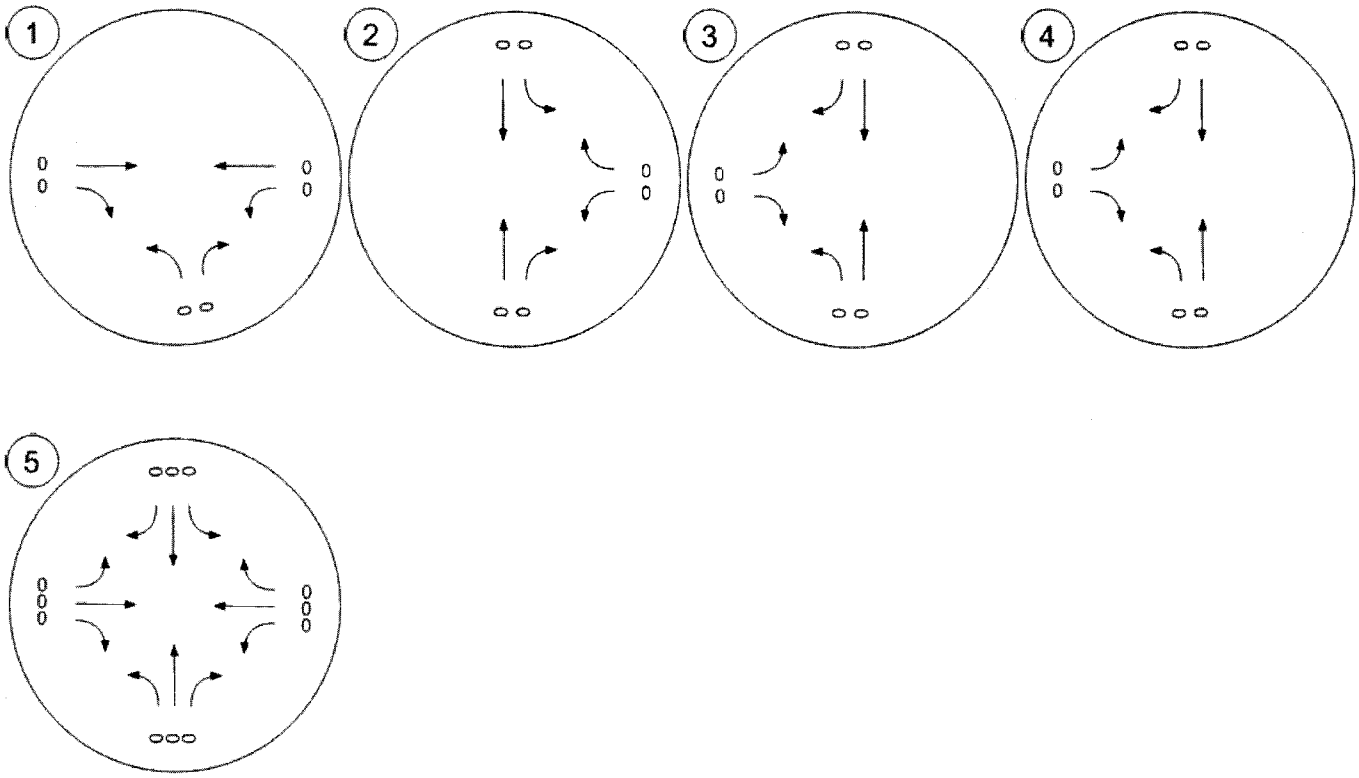




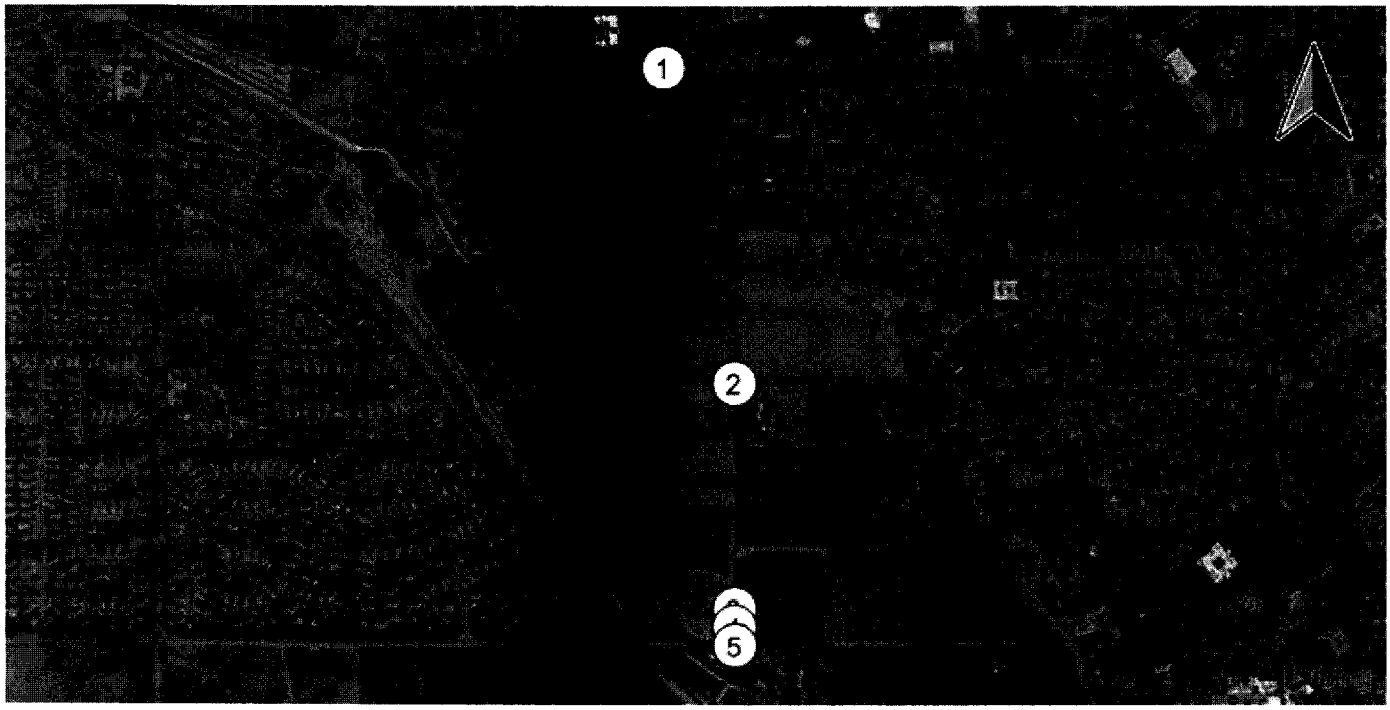


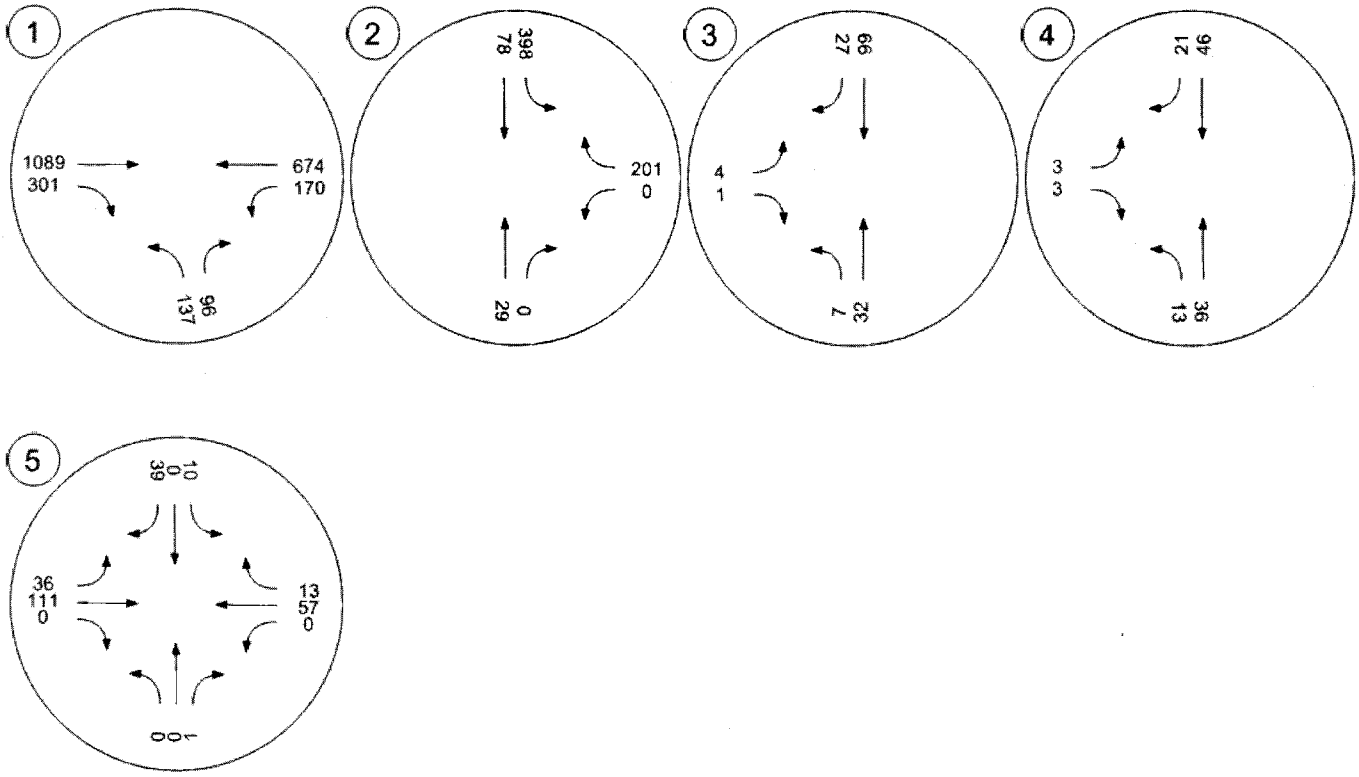
Traffic Volume - Other Volume



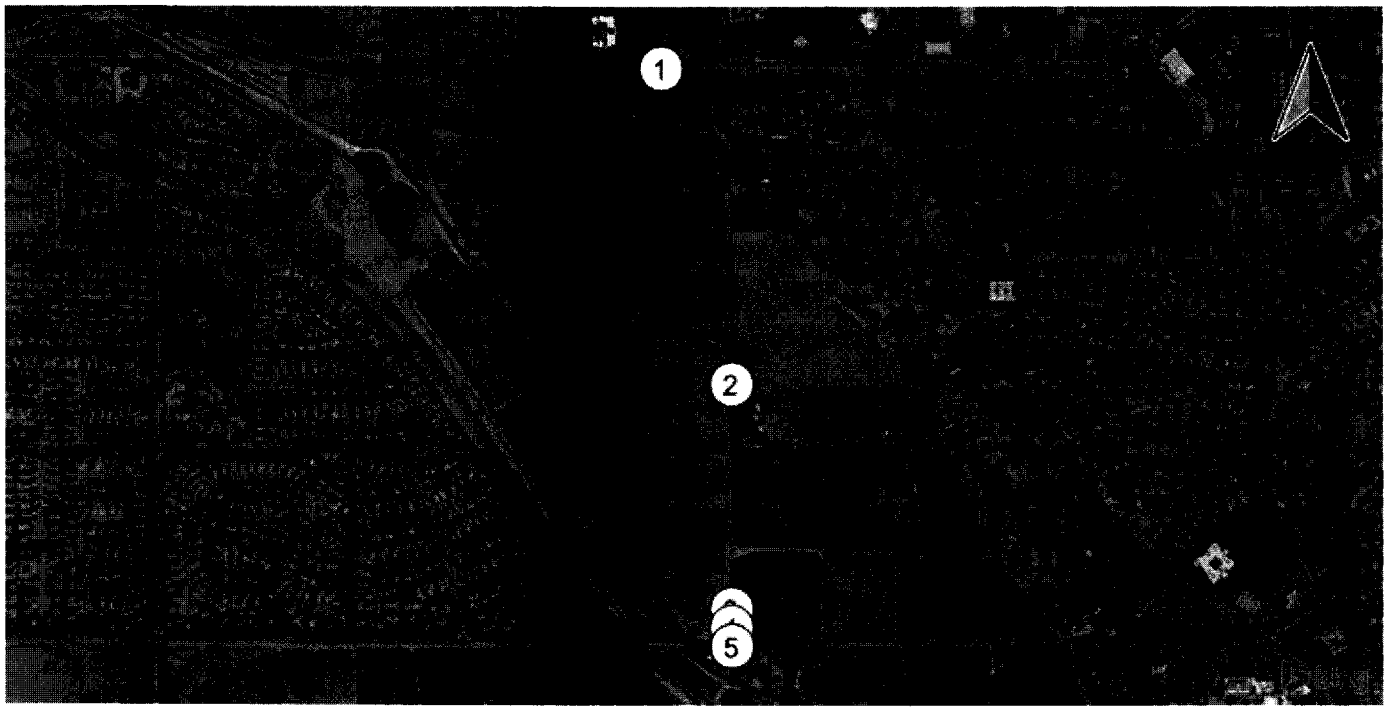


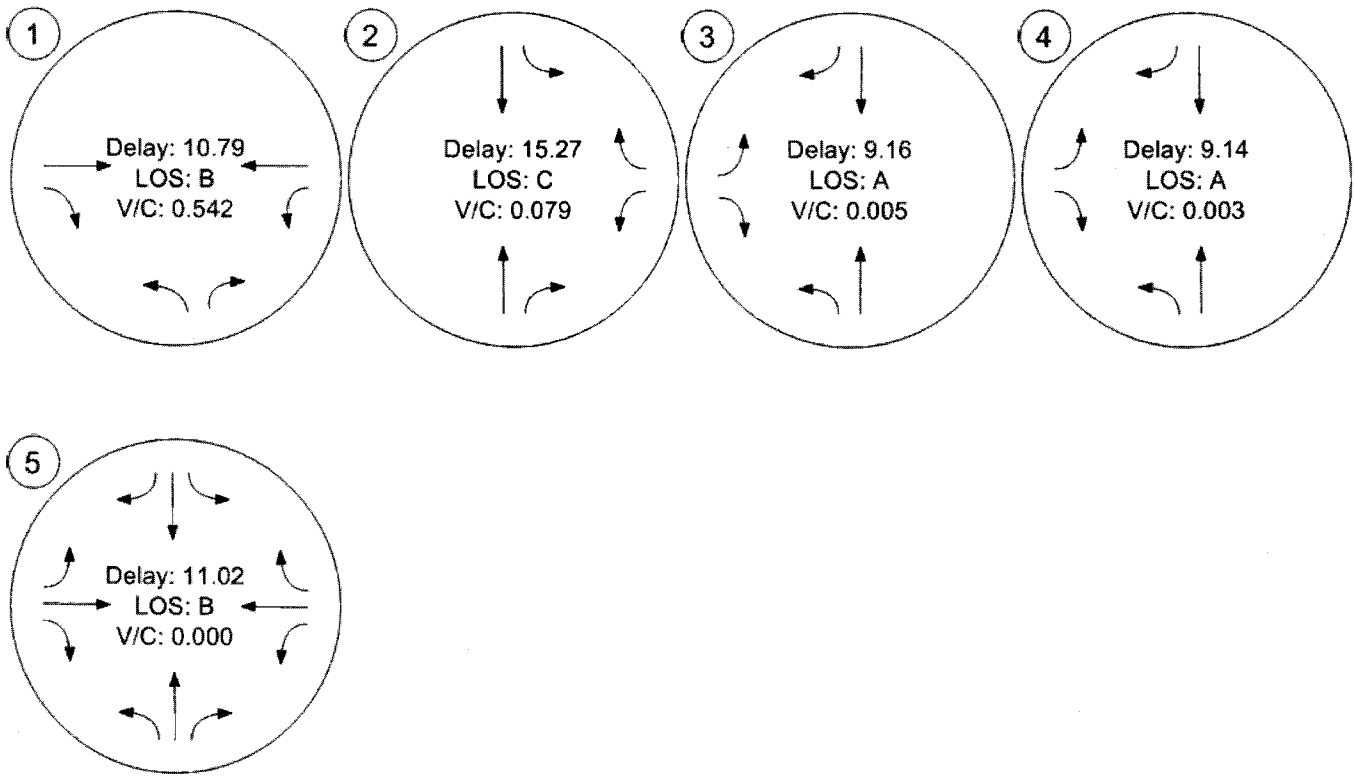
Traffic Volume - Future Total Volume



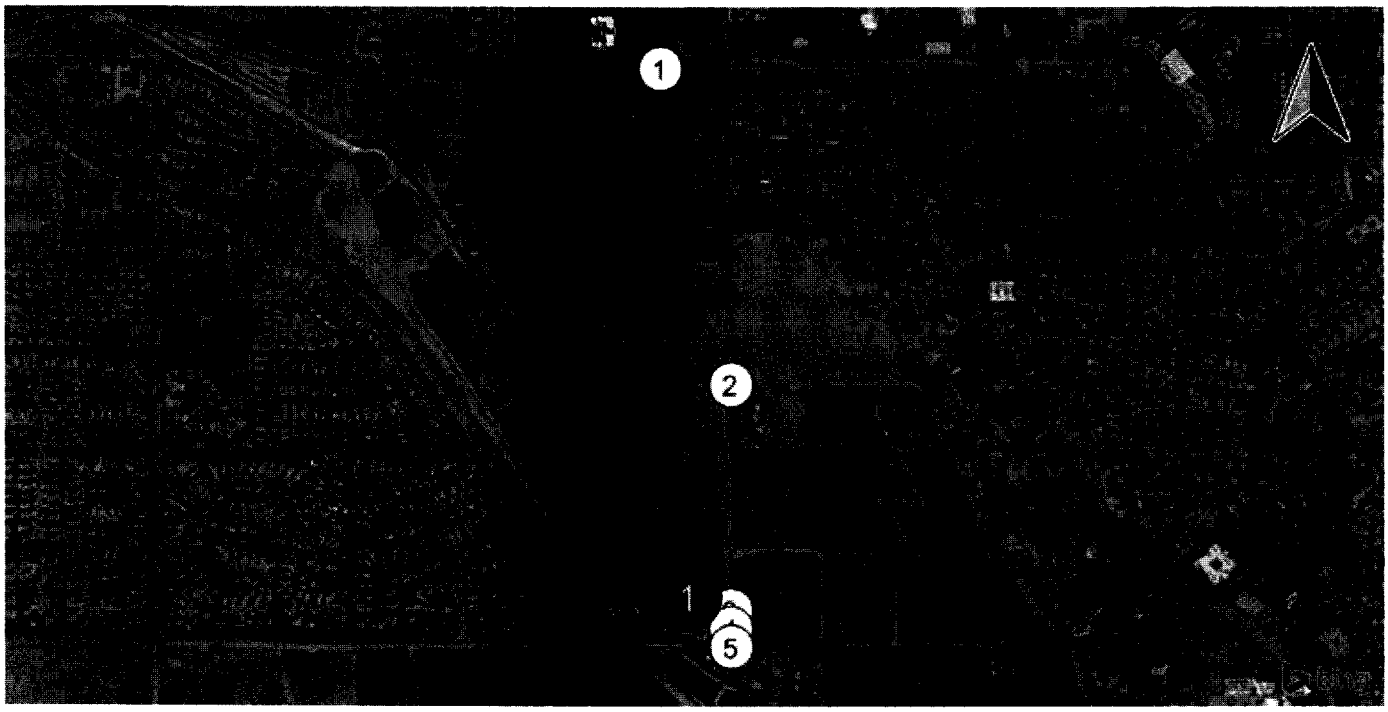


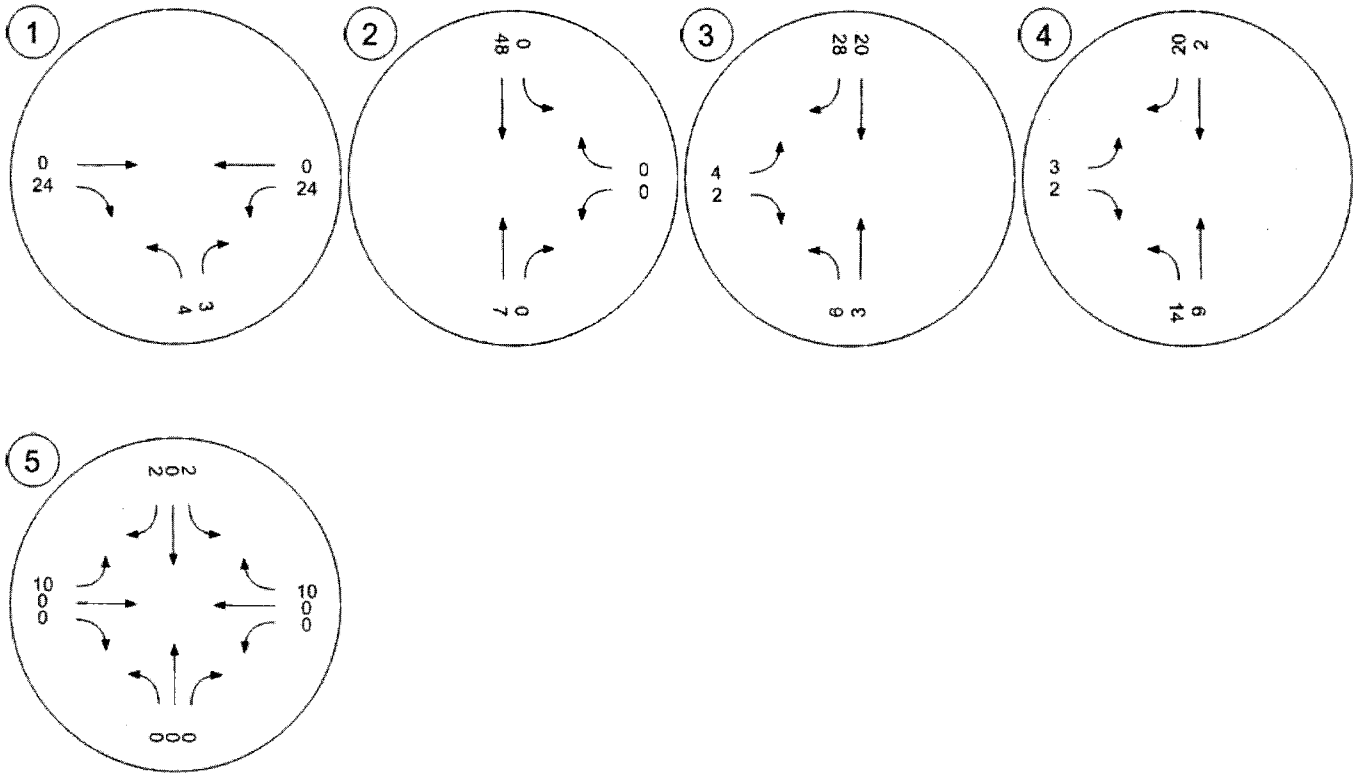
Traffic Conditions



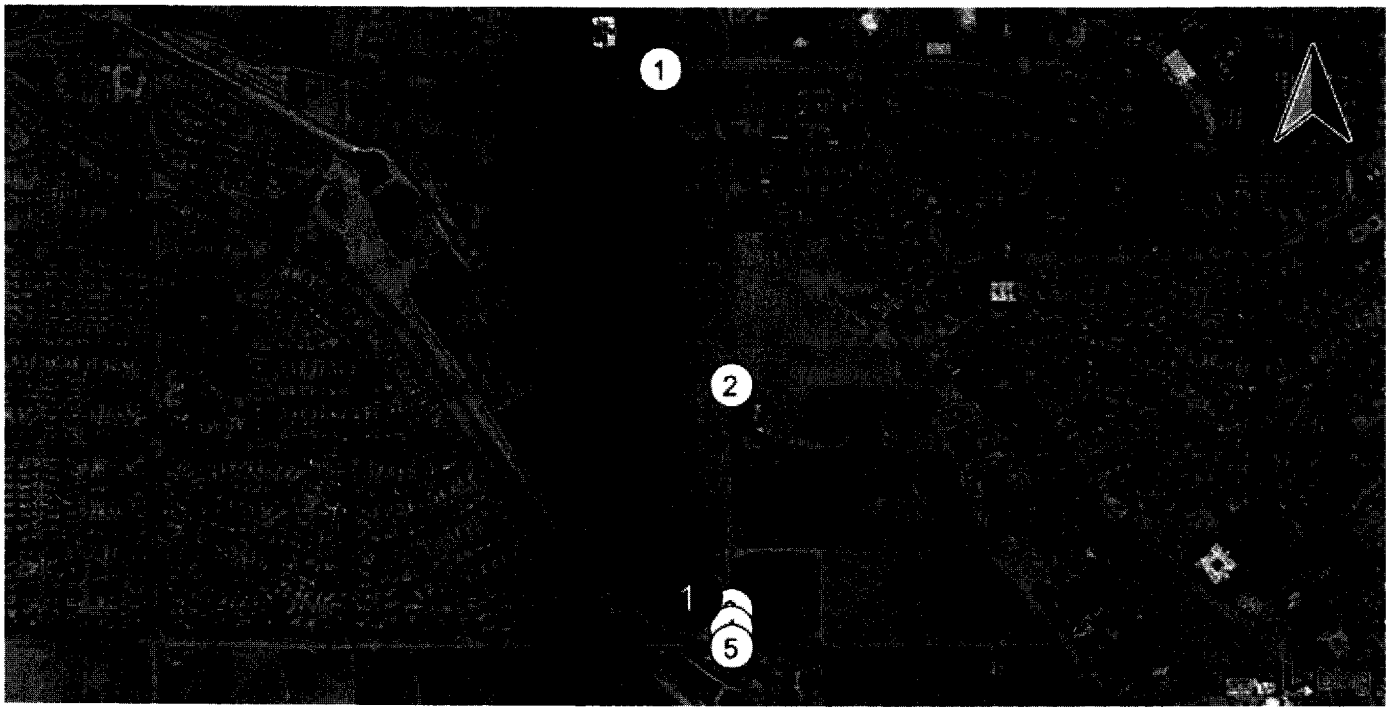


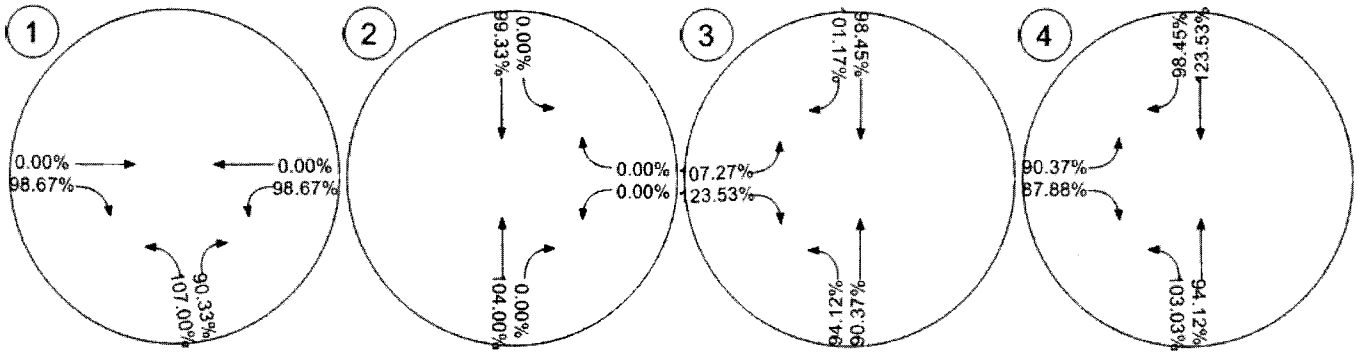
Fair Share - Fair Share Volumes - Zone 1: Project

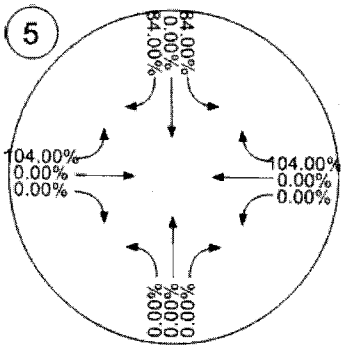




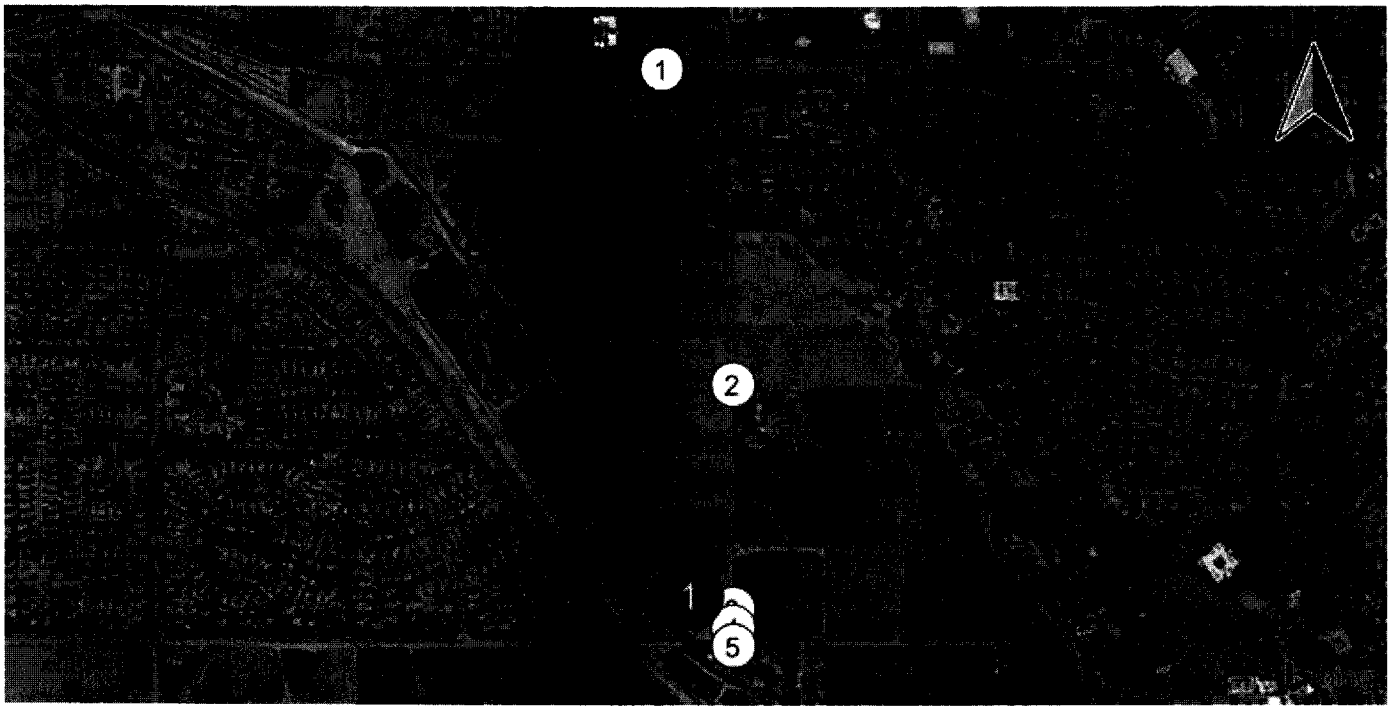
Fair Share - Fair Share % of Net New Site - Zone 1: Project

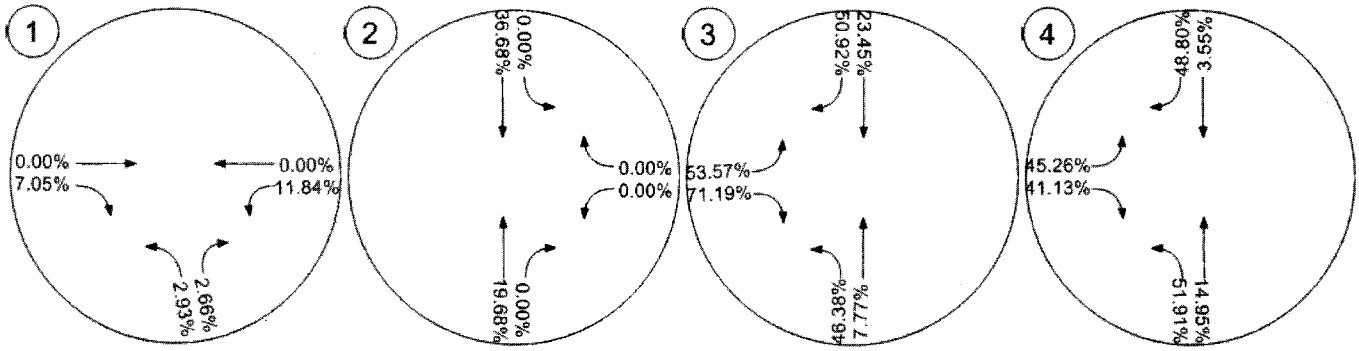


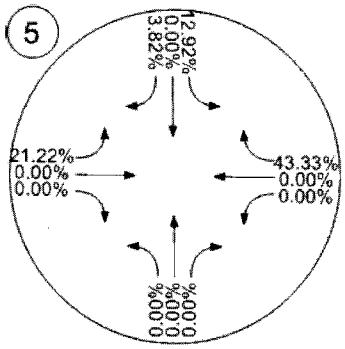




Fair Share - Fair Share % of Total Analysis - Zone 1: Project







Opening Year (2018) Without Project

Islamic Community Center of Redlands

Vistro File: J:\...\OY Friday Mid-Day.vistro

Scenario 1: Opening Year (2018) Without Project - Friday Mid-Day Peak Hour

Report File: J:\...\OY Friday Mid-Day.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.423	8.8	A
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.063	12.8	B
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.423

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	144	97	833	152	88	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	97	833	152	88	776
Peak Hour Factor	0.9421	0.9421	0.9421	0.9421	0.9421	0.9421
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	26	221	40	23	206
Total Analysis Volume [veh/h]	153	103	884	161	93	824
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	15	0	30	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	37	37	4	45
g / C, Green / Cycle	0.12	0.12	0.61	0.61	0.07	0.75
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.24	0.10	0.05	0.23
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	215	192	2210	987	128	2706
d1, Uniform Delay [s]	25.50	24.94	6.02	5.06	27.40	2.47
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.28	2.31	0.54	0.36	7.73	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.54	0.40	0.16	0.73	0.30
d, Delay for Lane Group [s/veh]	29.79	27.24	6.57	5.41	35.13	2.77
Lane Group LOS	C	C	A	A	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.23	1.43	2.26	0.74	1.51	0.81
50th-Percentile Queue Length [ft]	55.85	35.63	56.51	18.44	37.84	20.21
95th-Percentile Queue Length [veh]	4.02	2.57	4.07	1.33	2.72	1.46
95th-Percentile Queue Length [ft]	100.53	64.13	101.72	33.19	68.11	36.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.79	27.24	6.57	5.41	35.13	2.77
Movement LOS	C	C	A	A	D	A
d_A, Approach Delay [s/veh]	28.76		6.39		6.05	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	8.83					
Intersection LOS	A					
Intersection V/C	0.423					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	29	1	209	41	0	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	1	209	41	0	211
Peak Hour Factor	0.9381	0.9381	0.9381	0.9381	0.9381	0.9381
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	56	11	0	56
Total Analysis Volume [veh/h]	31	1	223	44	0	225
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.79	10.00	0.00	0.00	7.70	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.20	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	5.12	5.12	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.70		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.78					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	8	0	23	15	72	0	0	51	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	8	0	23	15	72	0	0	51	6
Peak Hour Factor	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	7	5	22	0	0	16	2
Total Analysis Volume [veh/h]	0	0	0	10	0	28	18	88	0	0	62	7
Pedestrian Volume [ped/h]	0			0			0			0		

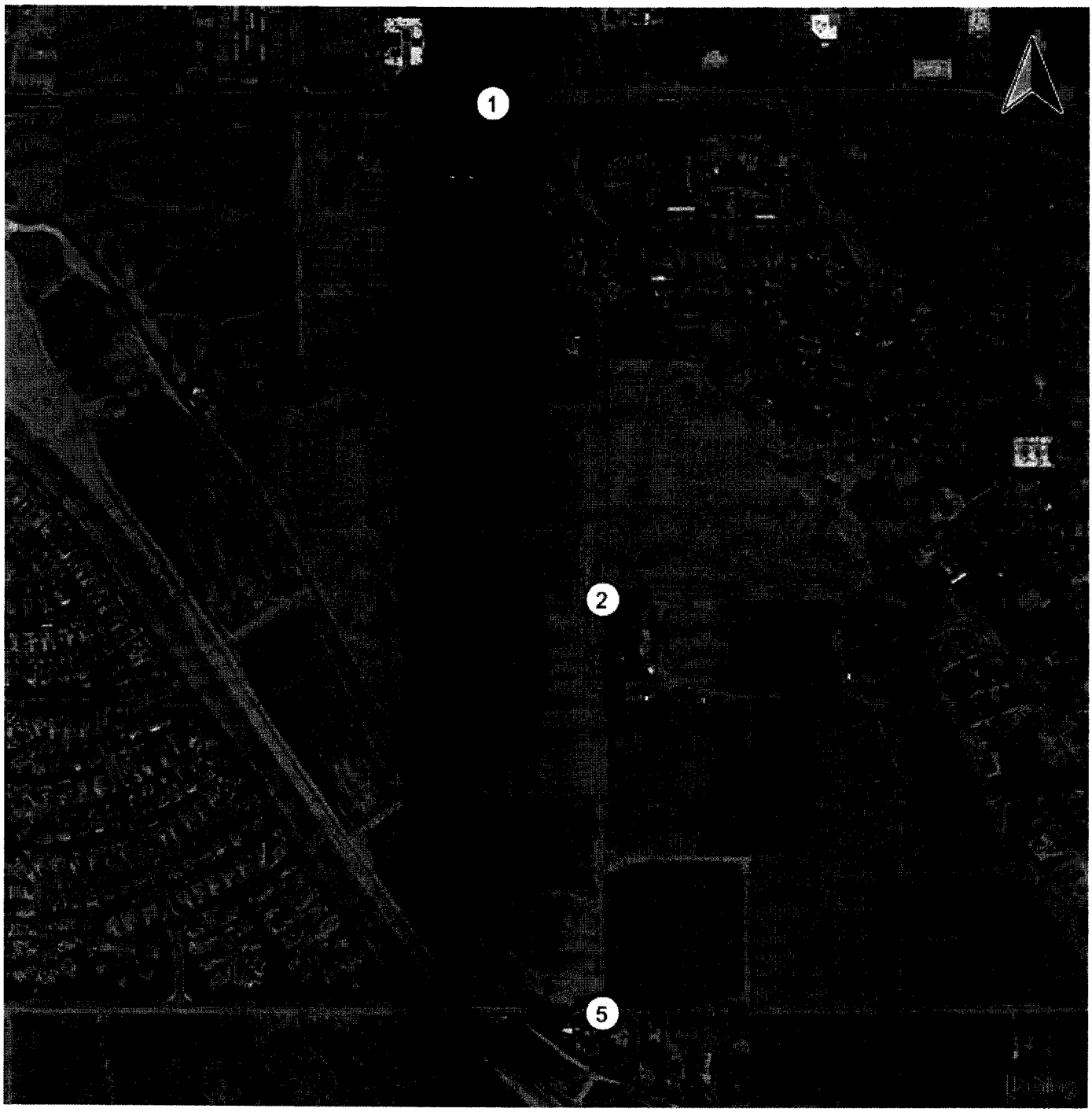
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

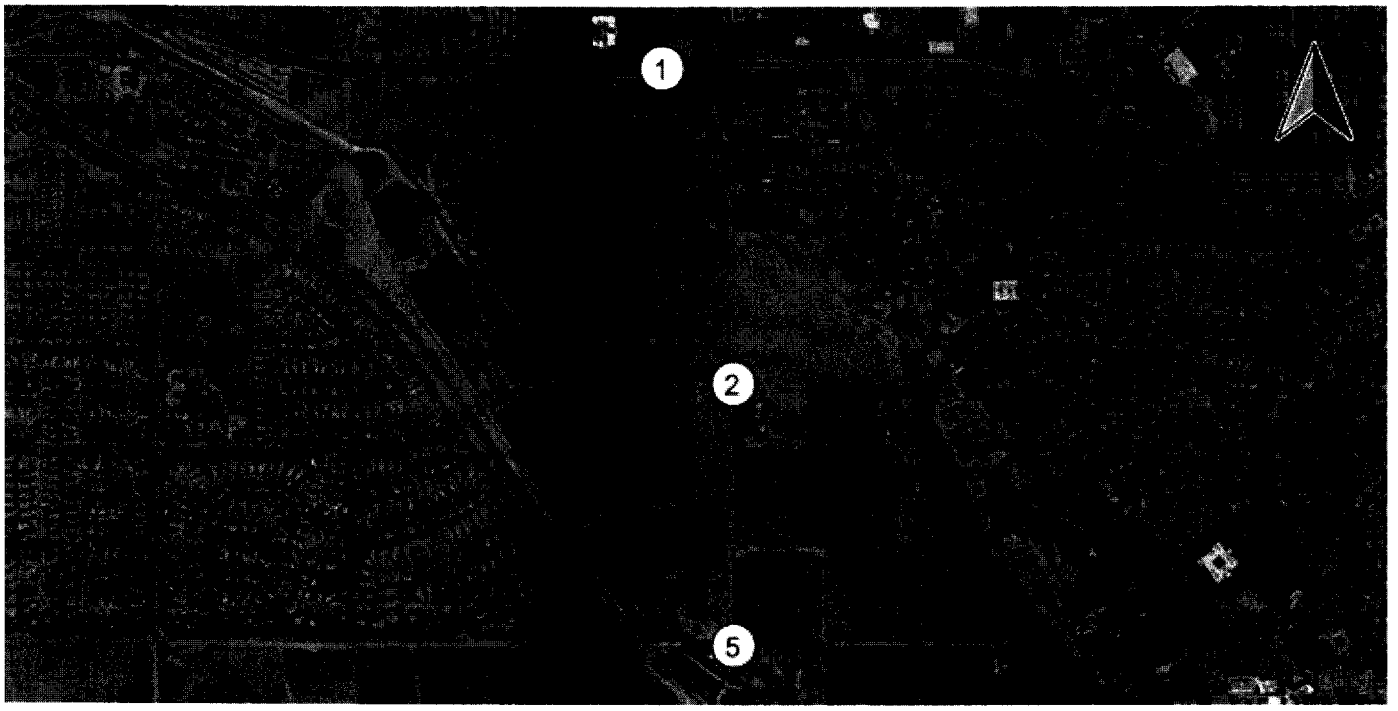
Movement, Approach, & Intersection Results

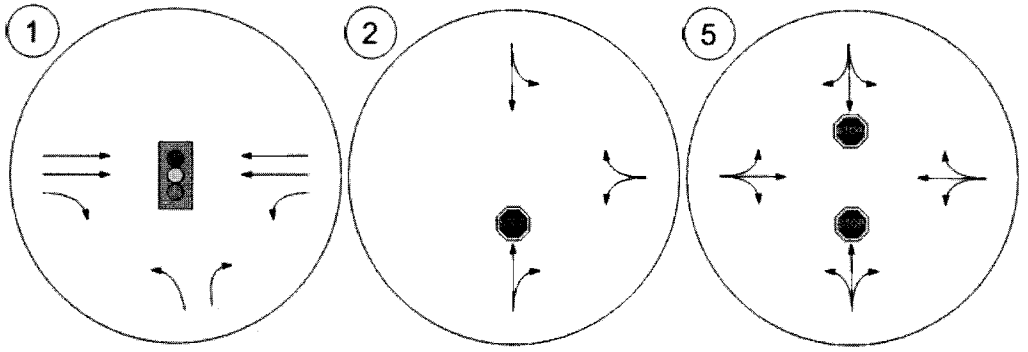
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.93	10.16	8.69	9.85	10.31	8.75	7.36	0.00	0.00	7.37	0.00	0.00
Movement LOS	A	B	A	A	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.13	0.13	0.13	0.22	0.22	0.22	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	3.20	3.20	3.20	5.52	5.52	5.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.59			9.04			1.25			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.23											
Intersection LOS	B											

Study Intersections

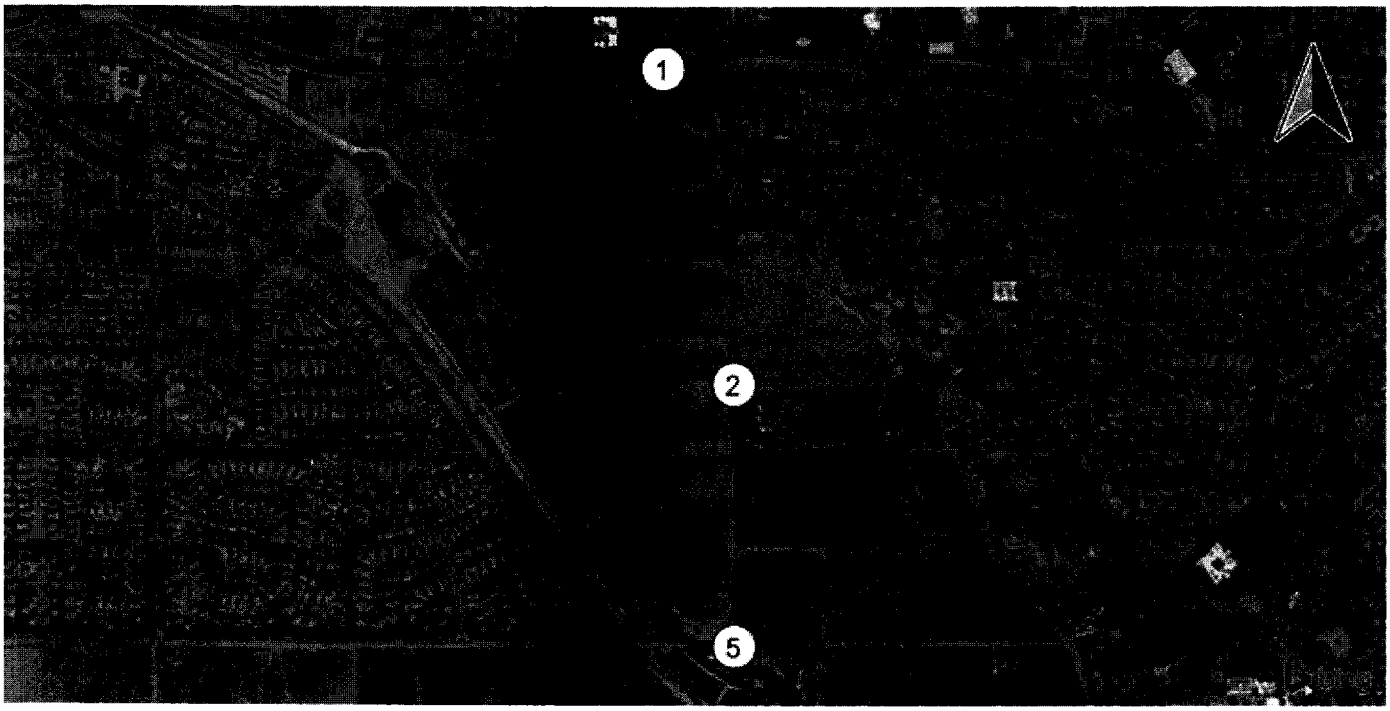


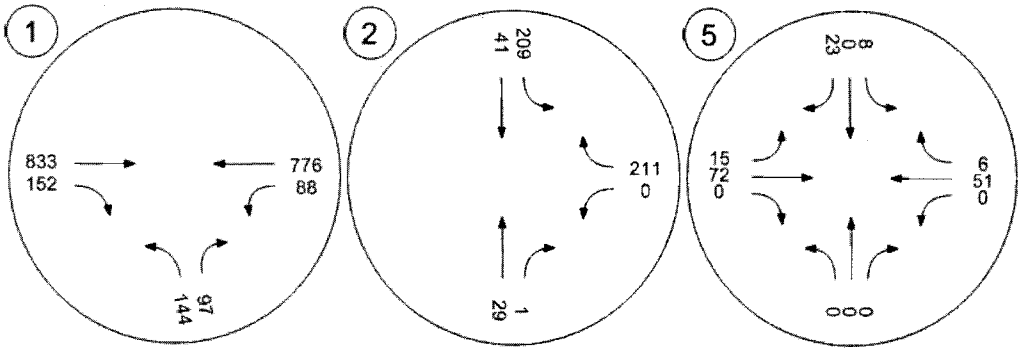
Lane Configuration and Traffic Control



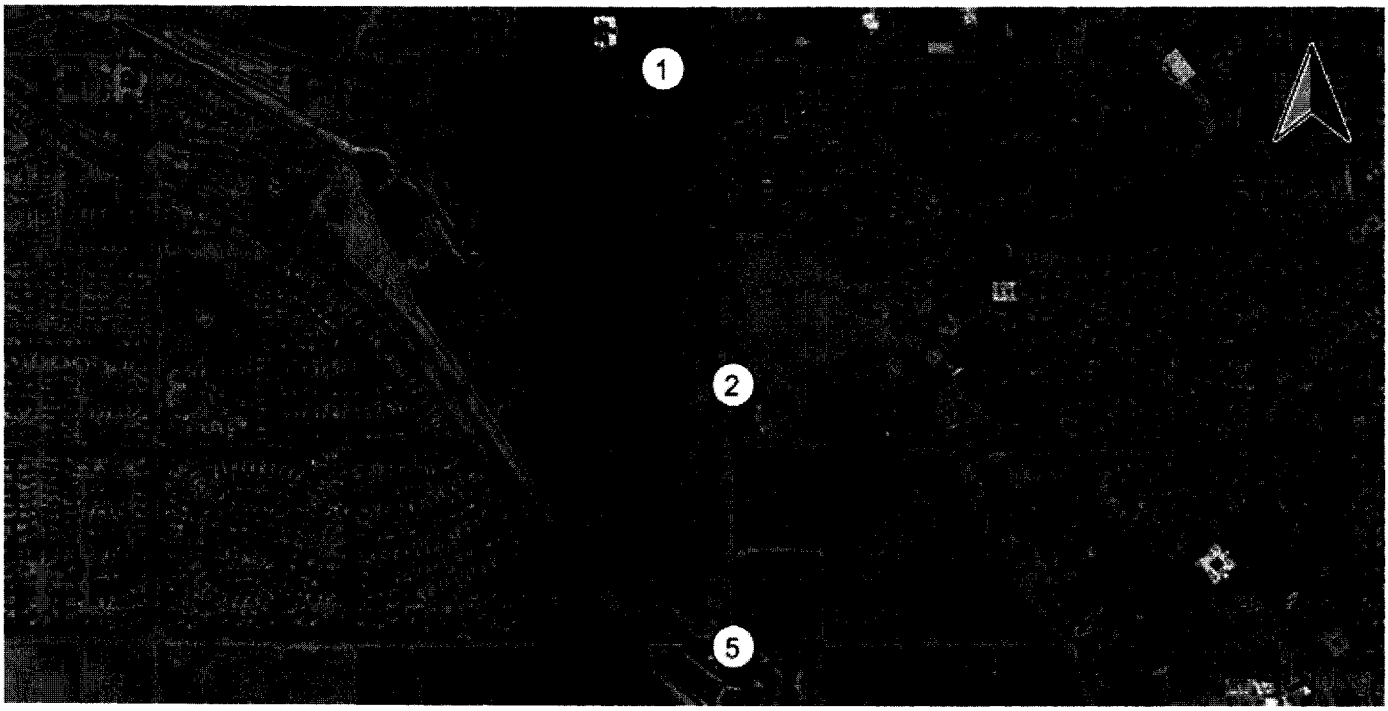


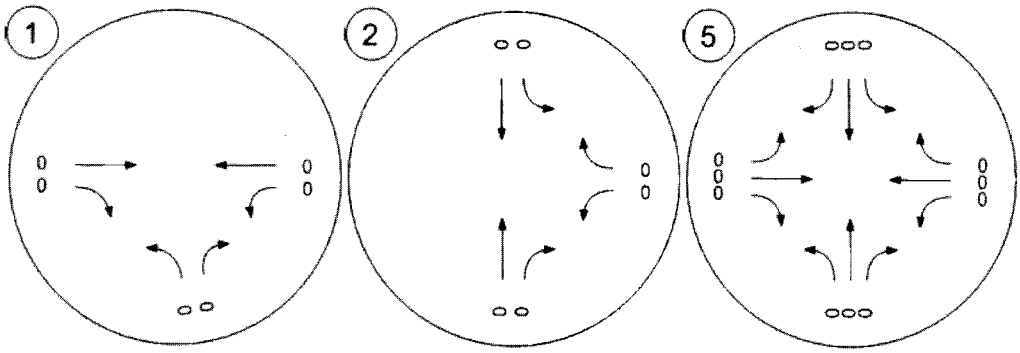
Traffic Volume - Base Volume



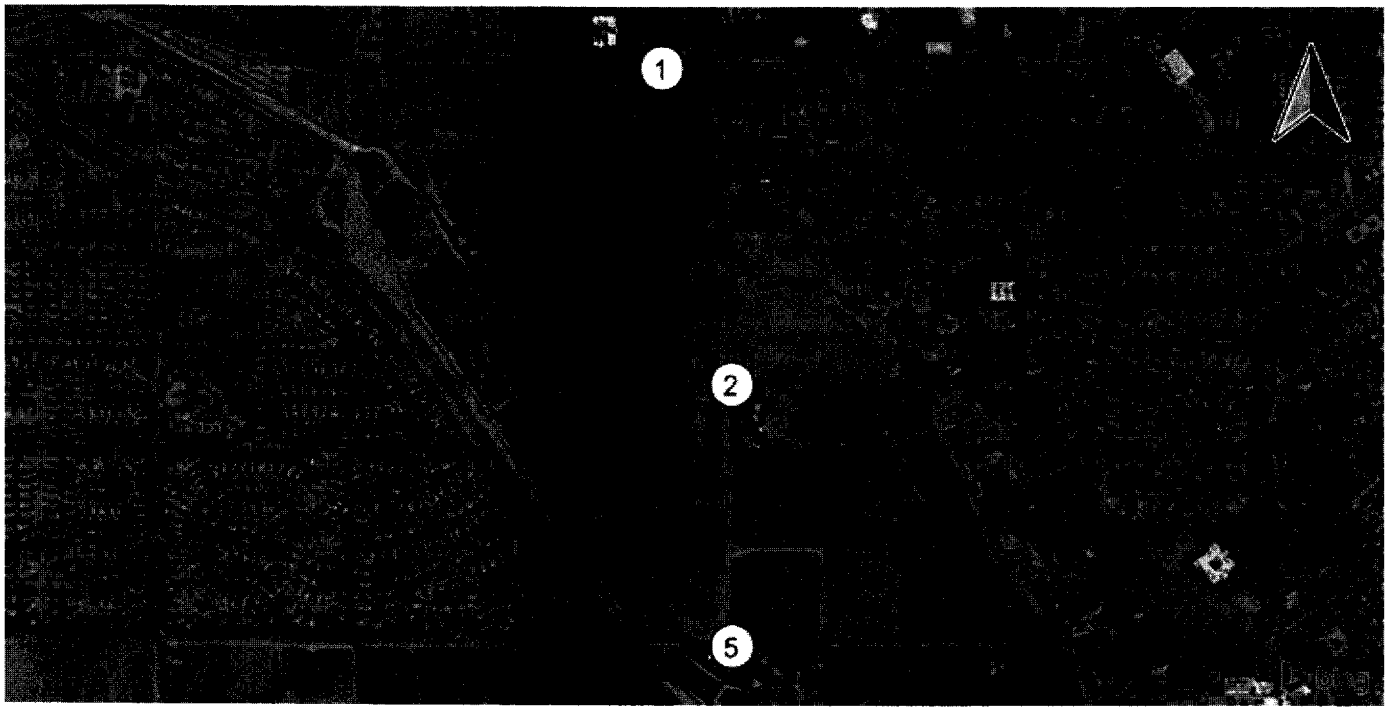


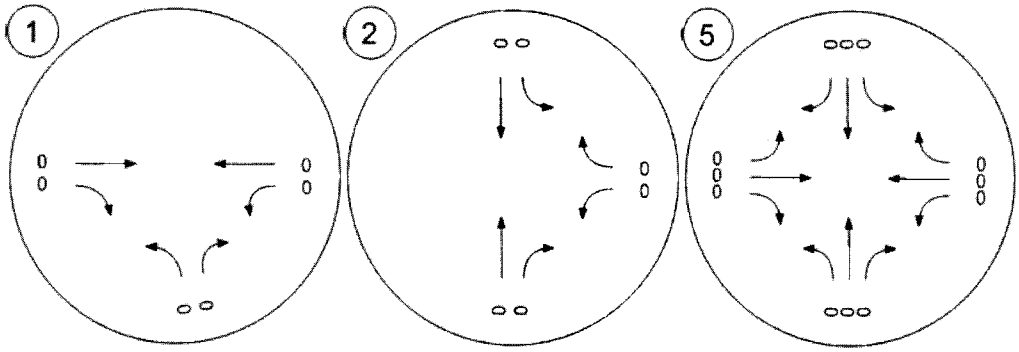
Traffic Volume - In-Process Volume



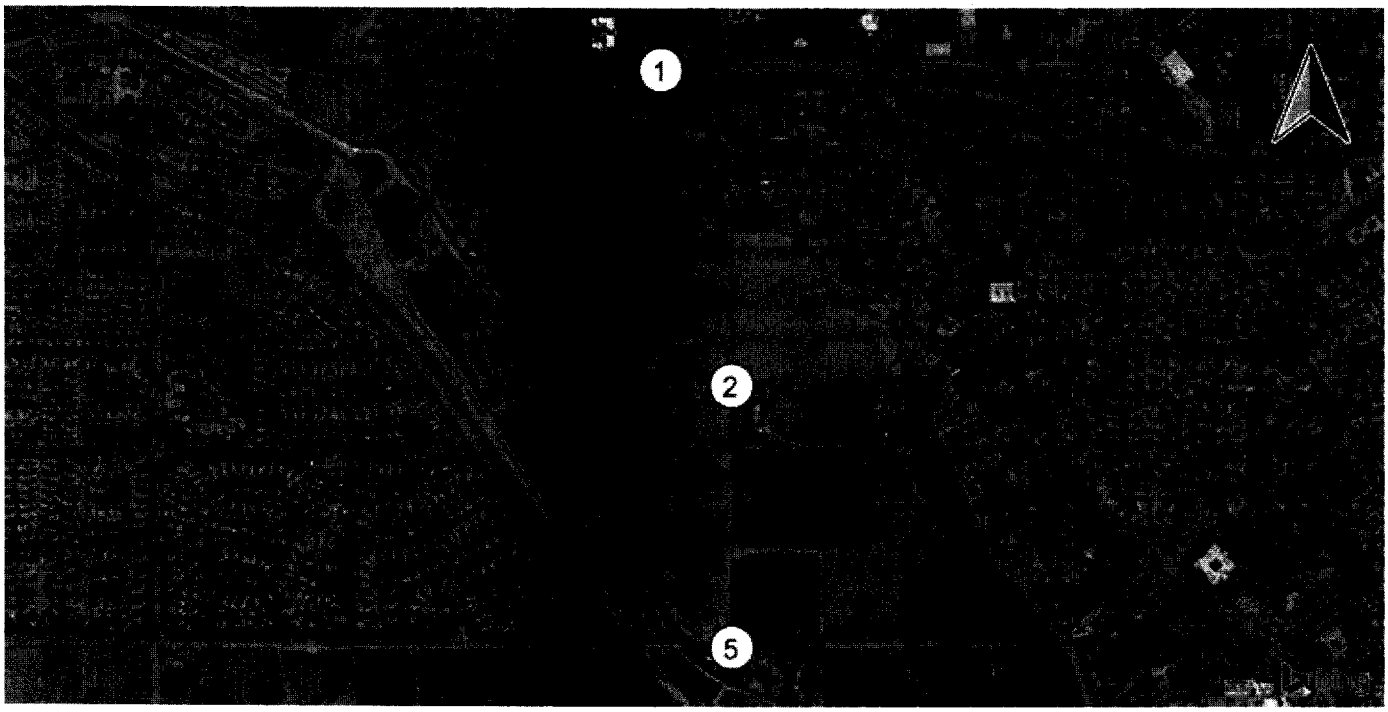


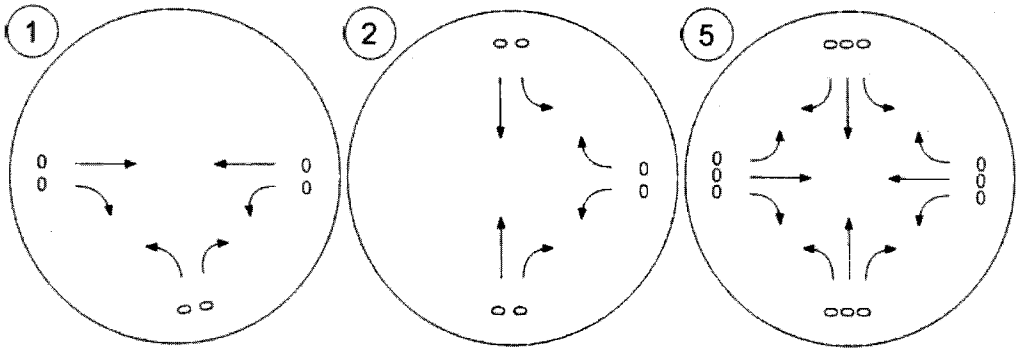
Traffic Volume - Net New Site Trips



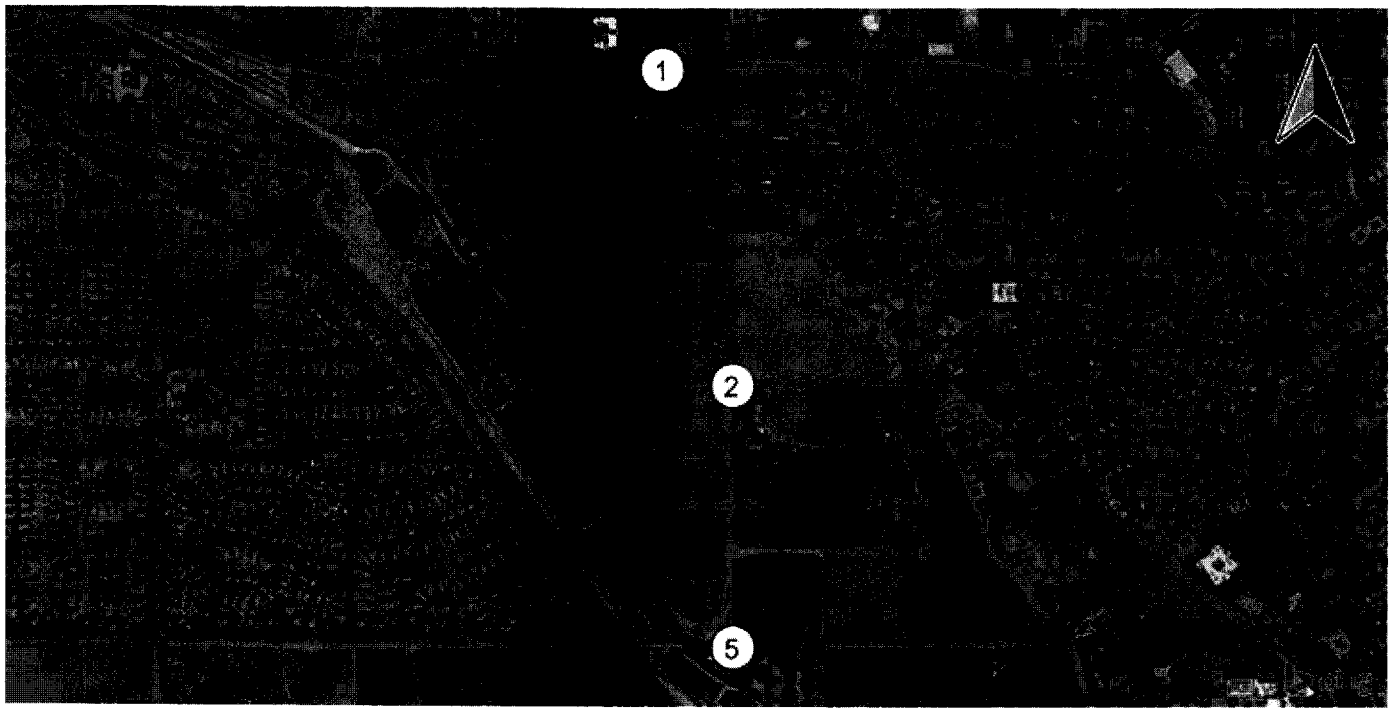


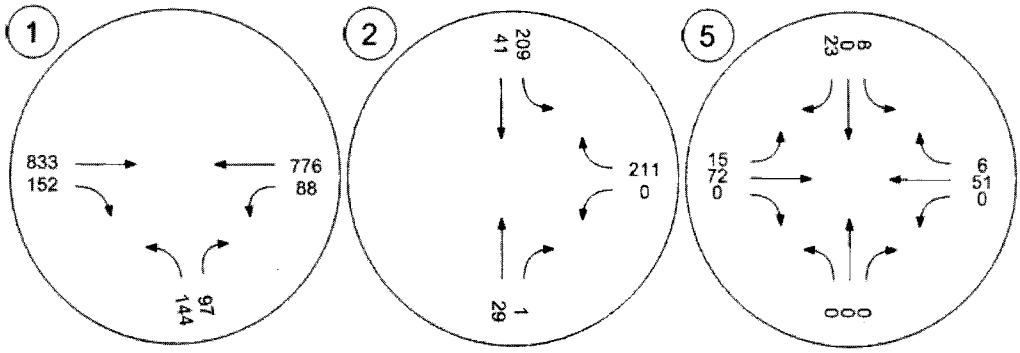
Traffic Volume - Other Volume



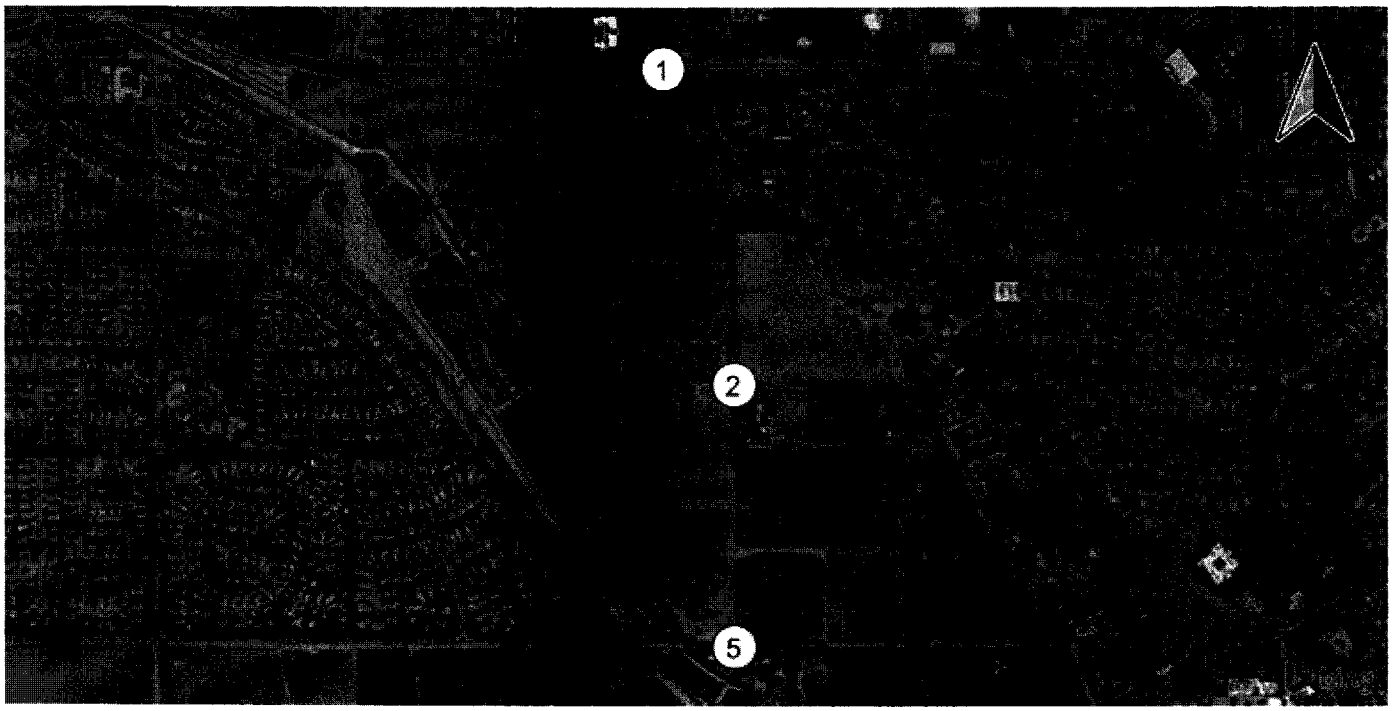


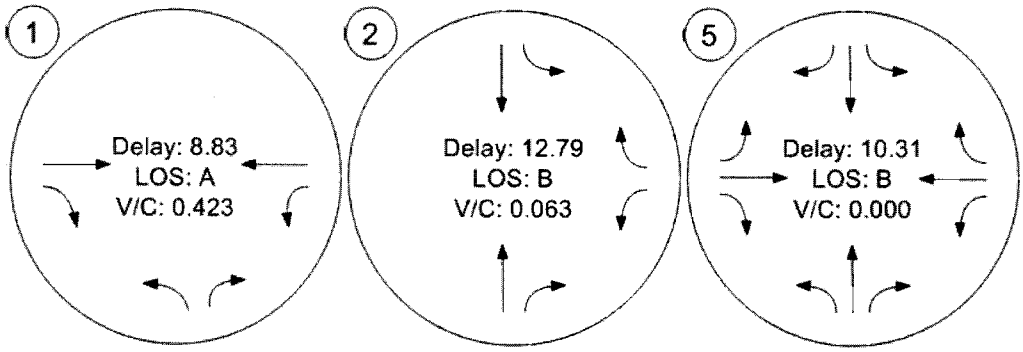
Traffic Volume - Future Total Volume





Traffic Conditions





Islamic Community Center of Redlands

Vistro File: J:\...\OY Friday Evening.vistro

Scenario 1: Opening Year (2018) Without Project - Friday Evening Peak Hour

Report File: J:\...\OY Friday Evening.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.539	10.2	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.060	14.9	B
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	137	94	1128	285	147	703
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	94	1128	285	147	703
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	24	292	74	38	182
Total Analysis Volume [veh/h]	142	97	1169	295	152	728
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	33	0	12	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	35	35	7	45
g / C, Green / Cycle	0.11	0.11	0.58	0.58	0.11	0.76
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.32	0.18	0.08	0.20
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	204	182	2094	935	197	2729
d1, Uniform Delay [s]	25.70	25.20	7.88	6.53	26.07	2.27
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.24	2.41	1.08	0.89	6.23	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

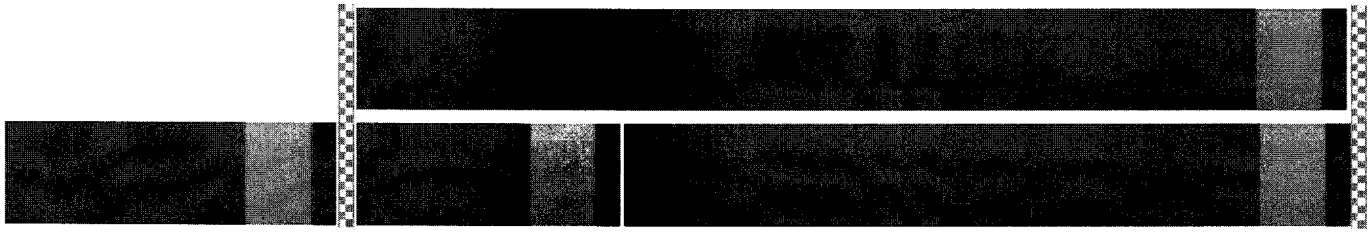
X, volume / capacity	0.70	0.53	0.56	0.32	0.77	0.27
d, Delay for Lane Group [s/veh]	29.94	27.61	8.97	7.41	32.30	2.51
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.08	1.35	3.88	1.72	2.33	0.64
50th-Percentile Queue Length [ft]	52.00	33.85	96.98	43.00	58.29	15.99
95th-Percentile Queue Length [veh]	3.74	2.44	6.98	3.10	4.20	1.15
95th-Percentile Queue Length [ft]	93.60	60.93	174.56	77.39	104.92	28.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.94	27.61	8.97	7.41	32.30	2.51
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	29.00		8.65		7.66	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	10.20					
Intersection LOS	B					
Intersection V/C	0.539					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.060

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	22	0	410	30	0	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	0	410	30	0	203
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	107	8	0	53
Total Analysis Volume [veh/h]	23	0	429	31	0	212
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.92	11.42	0.00	0.00	8.20	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.19	0.19	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	4.73	4.73	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.92		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	8	0	37	26	116	0	0	57	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	8	0	37	26	116	0	0	57	3
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	10	7	32	0	0	16	1
Total Analysis Volume [veh/h]	0	0	1	9	0	40	28	126	0	0	62	3
Pedestrian Volume [ped/h]	0			0			0			0		

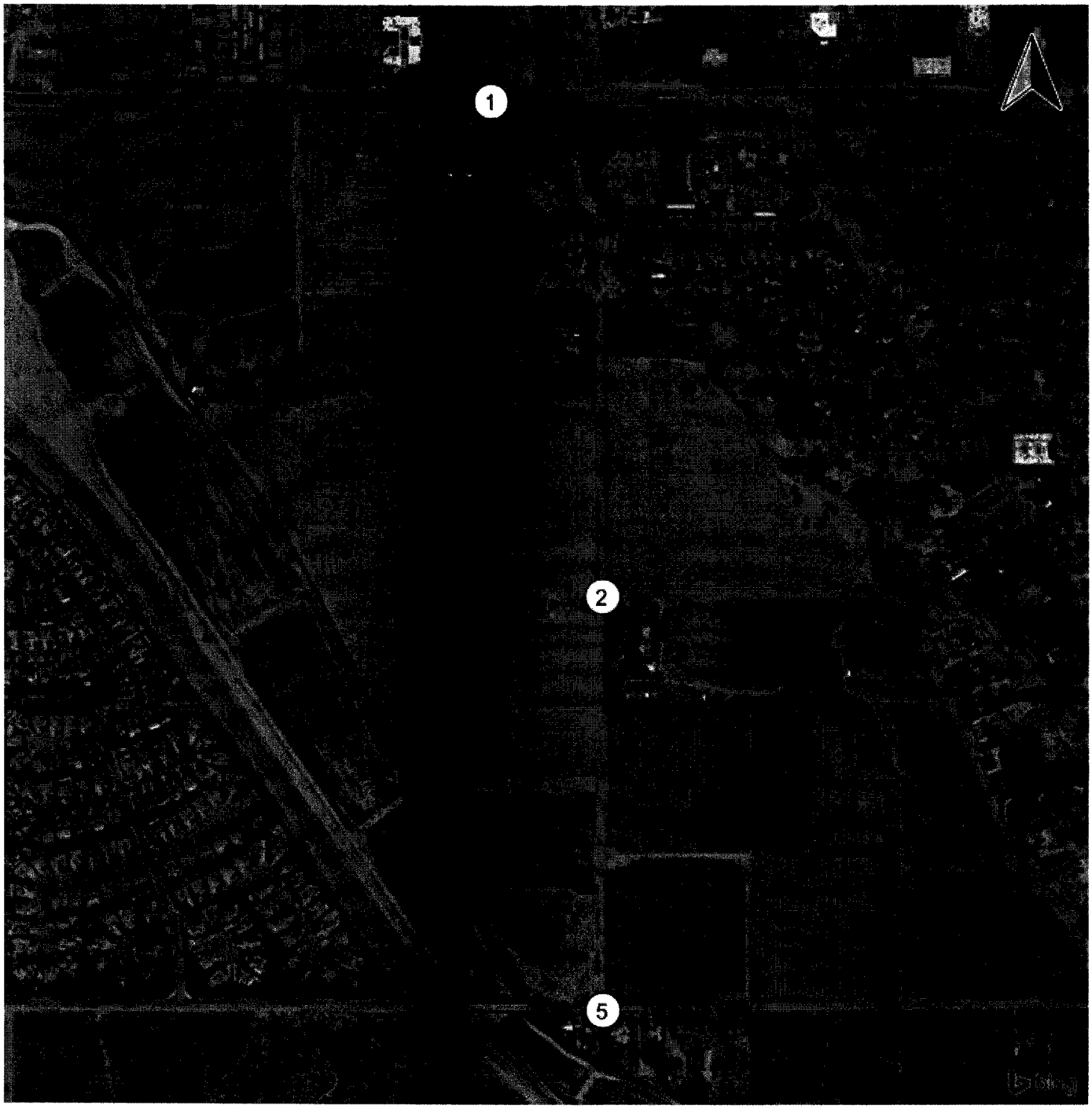
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

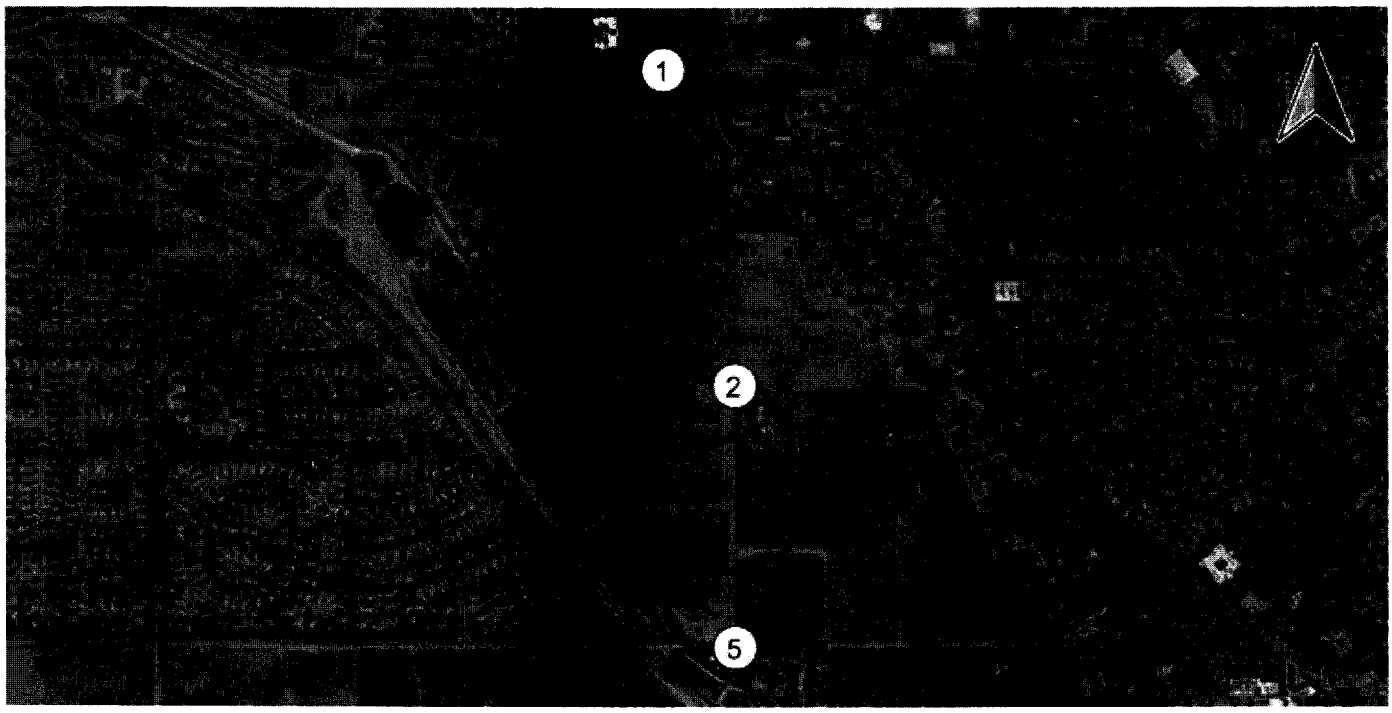
Movement, Approach, & Intersection Results

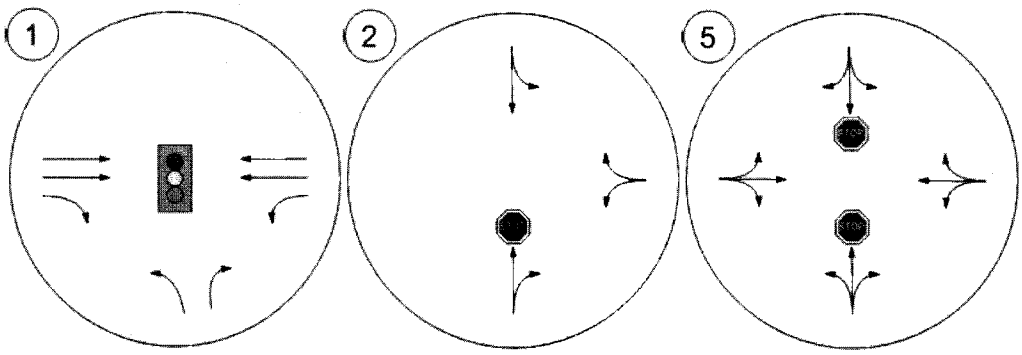
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.51	10.58	8.88	10.35	10.78	8.79	7.37	0.00	0.00	7.44	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.17	0.17	0.17	0.33	0.33	0.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	4.16	4.16	4.16	8.26	8.26	8.26	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.88			9.08			1.34			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.45											
Intersection LOS	B											

Study Intersections

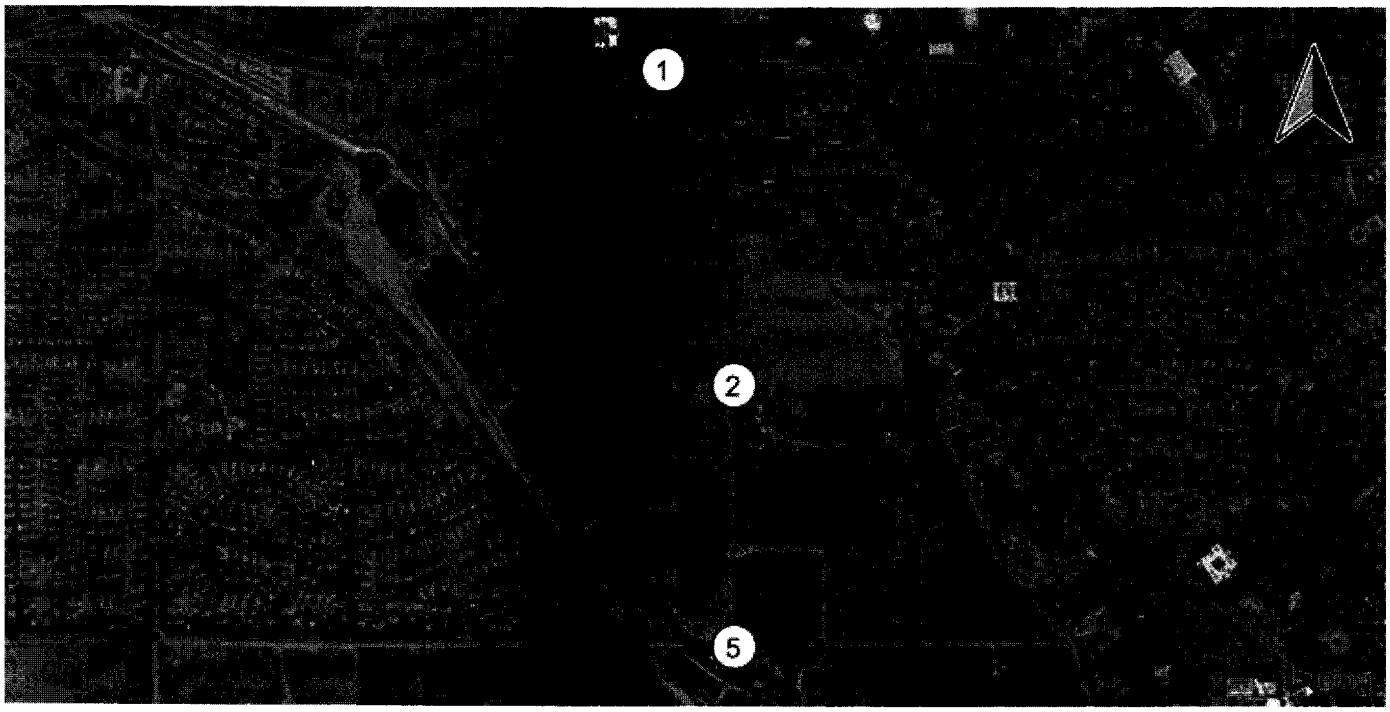


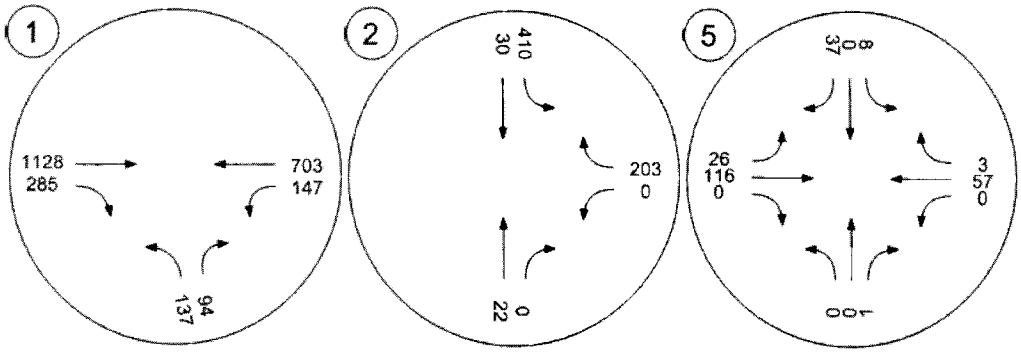
Lane Configuration and Traffic Control



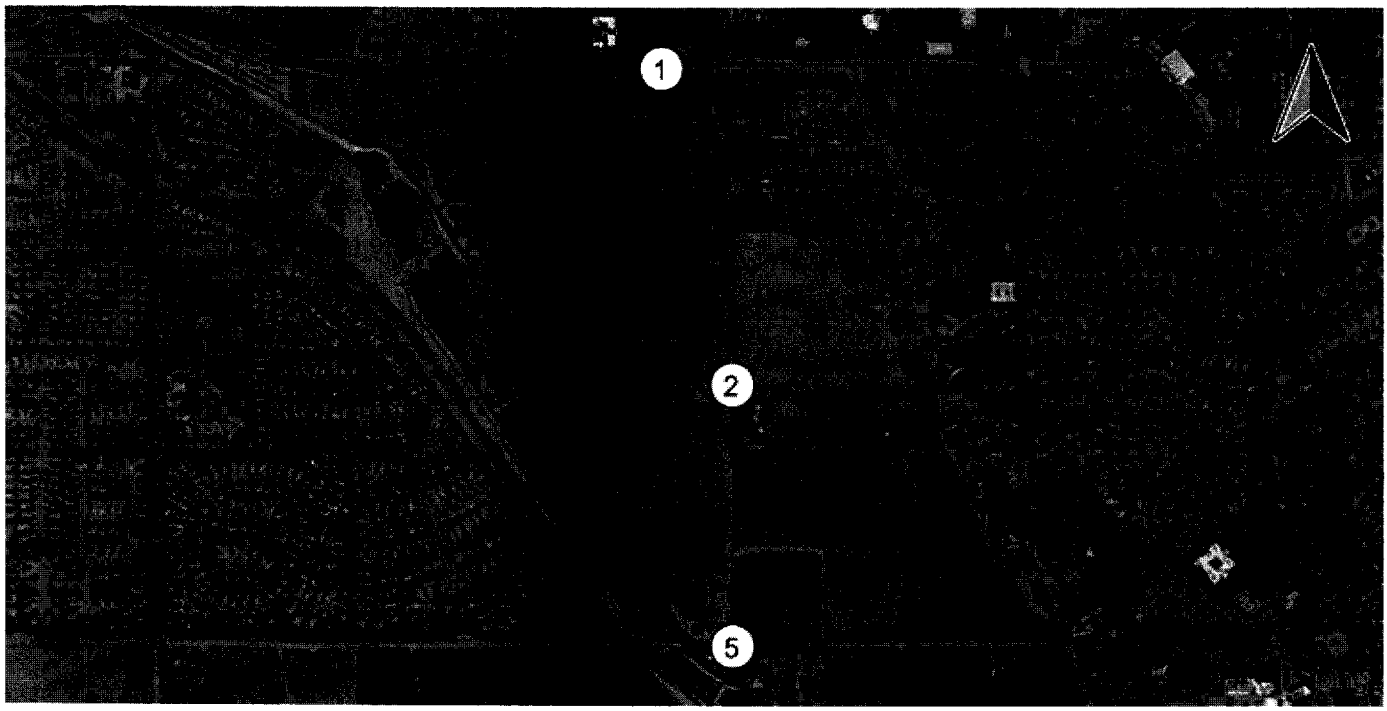


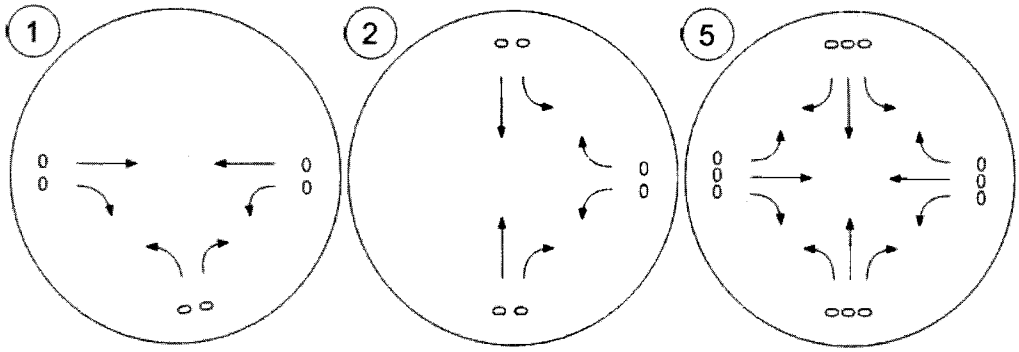
Traffic Volume - Base Volume



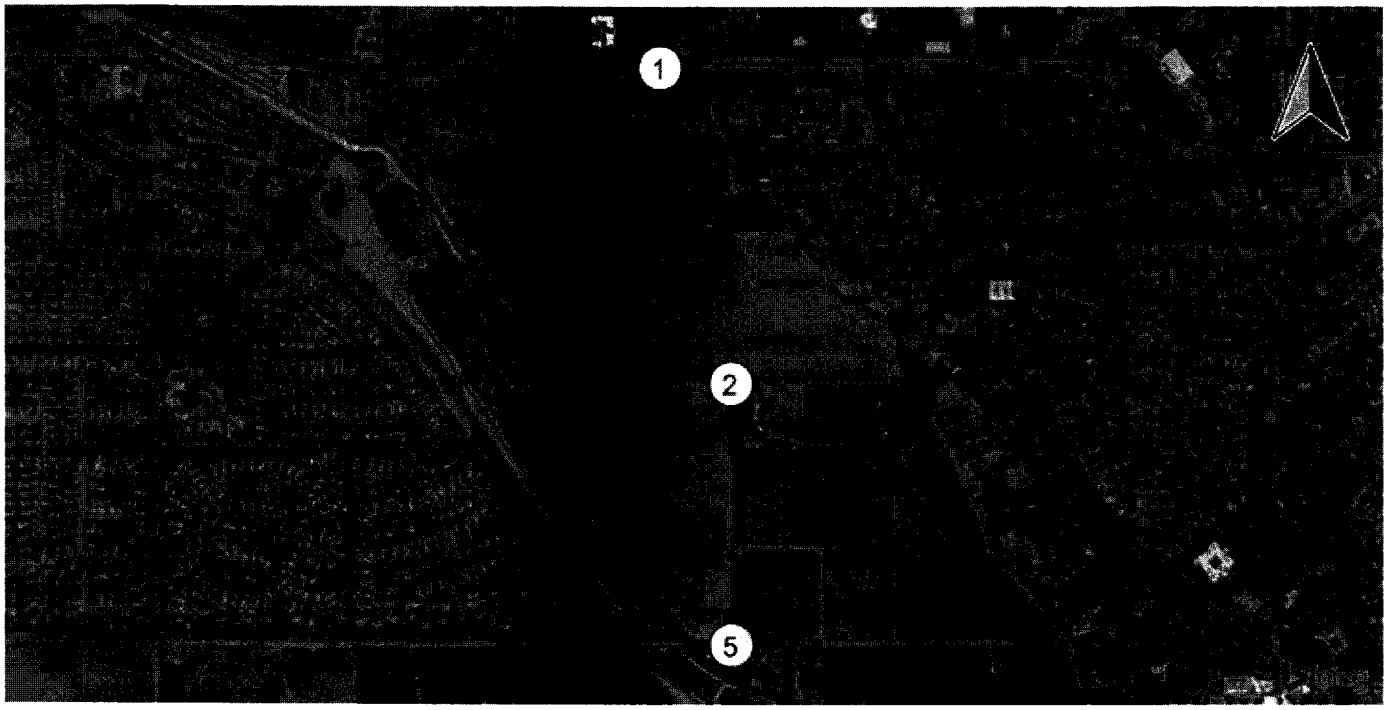


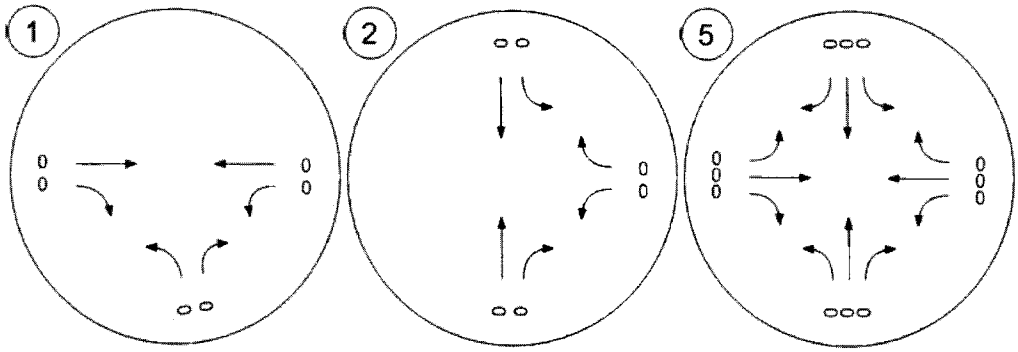
Traffic Volume - In-Process Volume



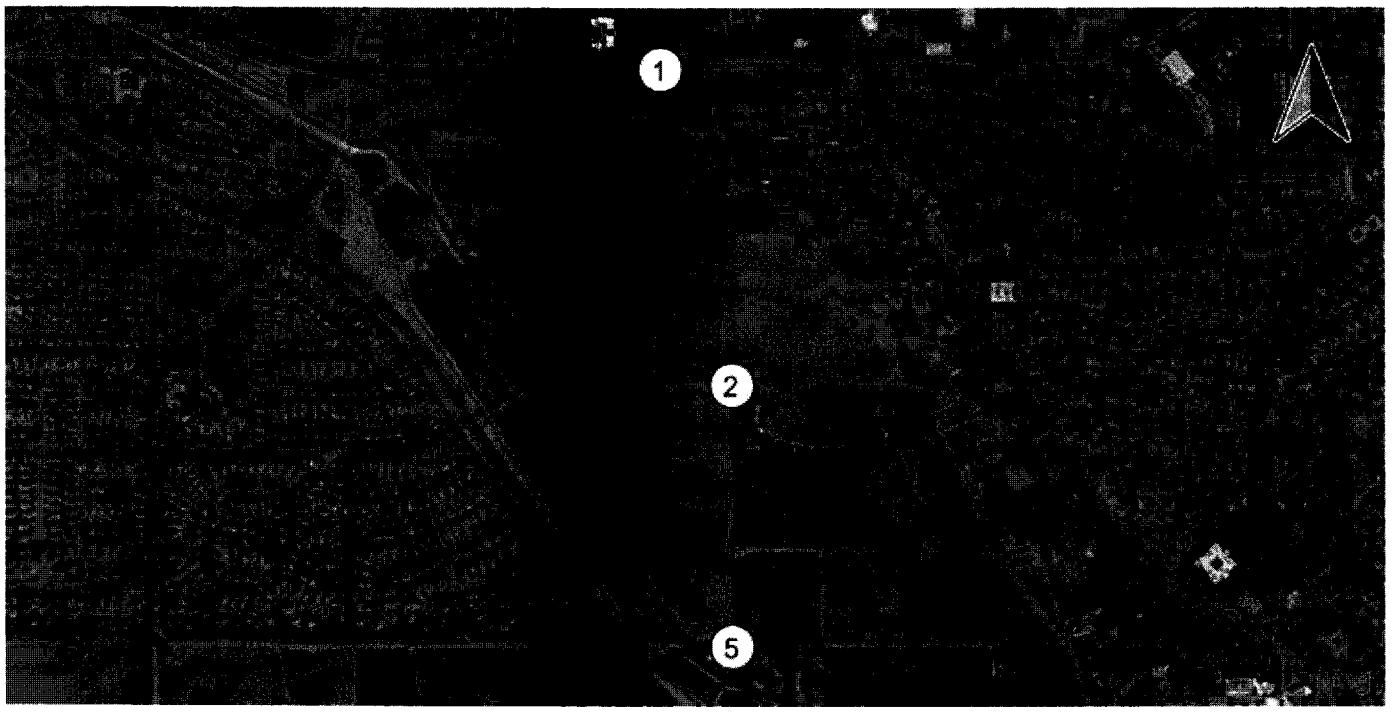


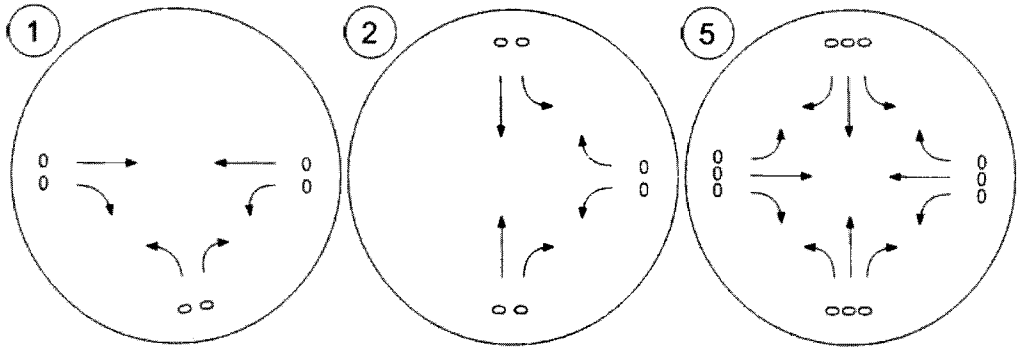
Traffic Volume - Net New Site Trips



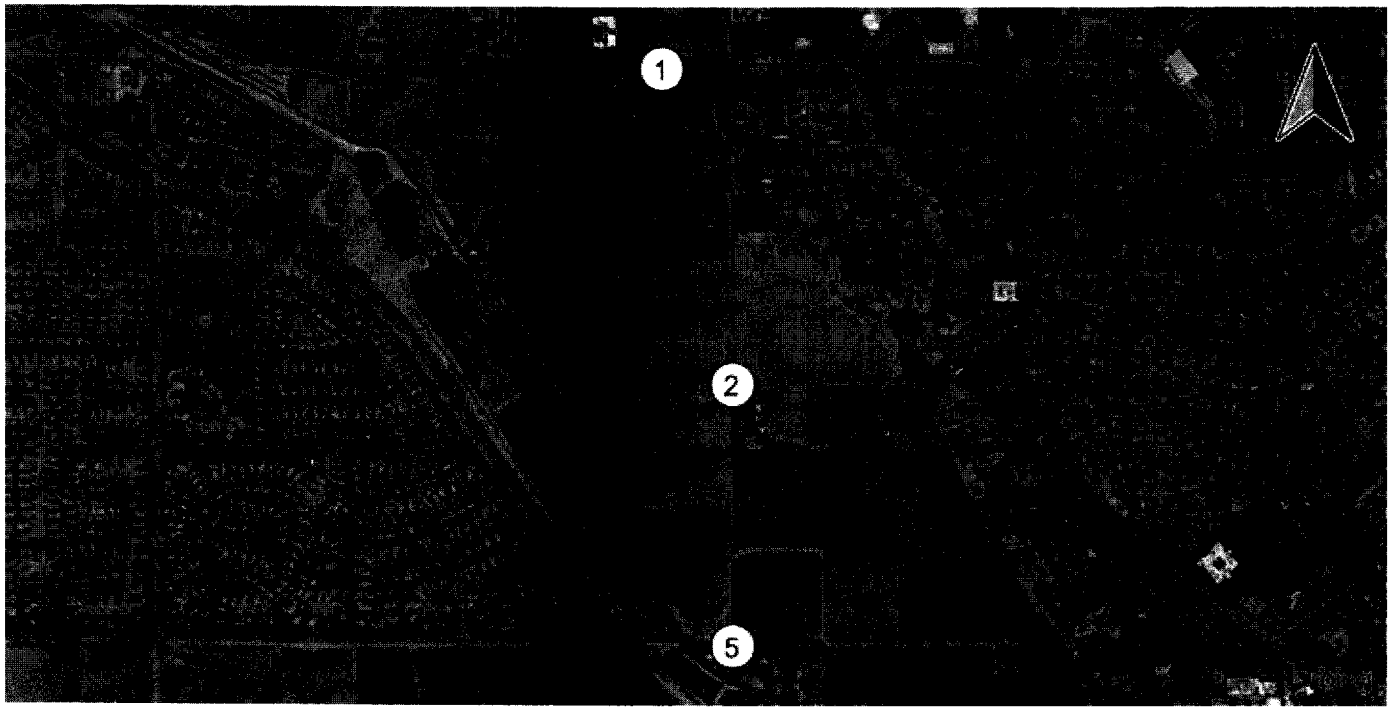


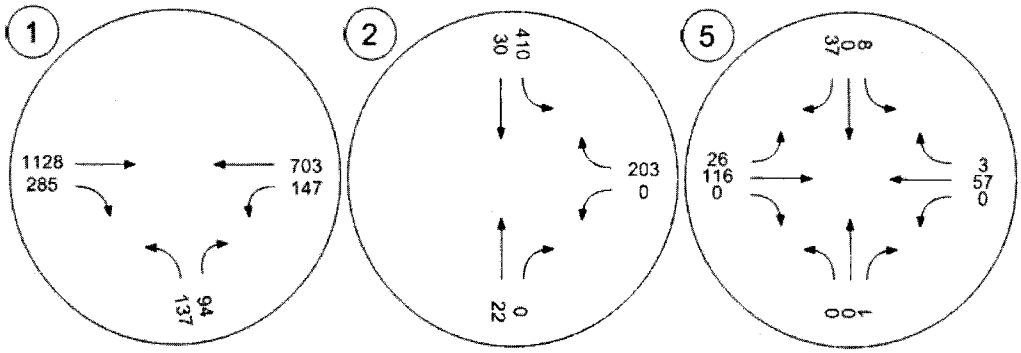
Traffic Volume - Other Volume



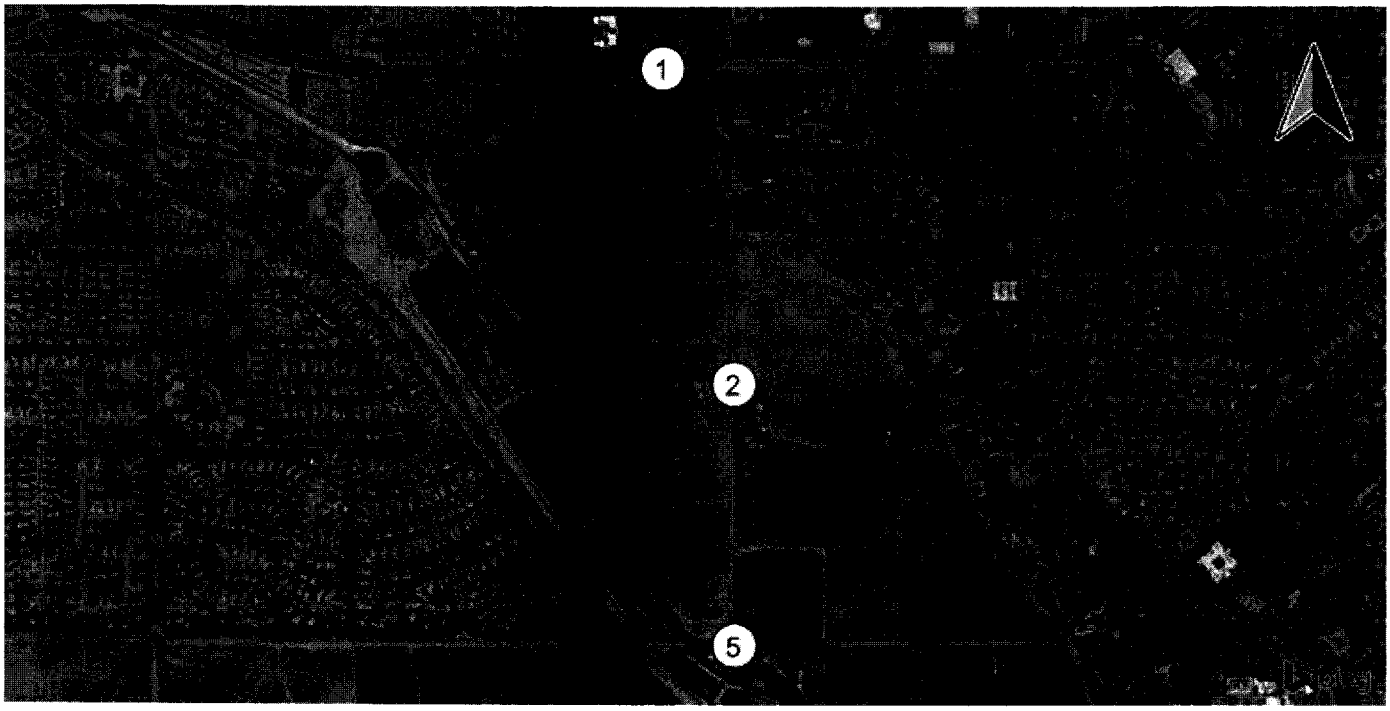


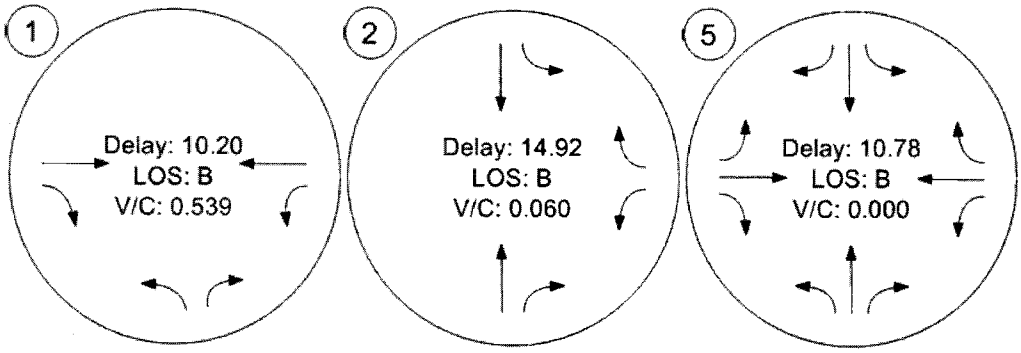
Traffic Volume - Future Total Volume





Traffic Conditions





Opening Year (2018) With Project

Islamic Community Center of Redlands

Vistro File: J:\...\OY Friday Mid-Day.vistro

Scenario 2: Opening Year (2018) With Project - Friday Mid-Day Peak Hour

Report File: J:\...\OYP Friday Mid-Day.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.443	9.5	A
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.080	13.2	B
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.005	9.1	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.003	9.1	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	144	97	833	152	88	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	27	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	100	833	179	115	776
Peak Hour Factor	0.9421	0.9421	0.9421	0.9421	0.9421	0.9421
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	27	221	48	31	206
Total Analysis Volume [veh/h]	157	106	884	190	122	824
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	15	0	30	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	35	35	5	45
g / C, Green / Cycle	0.12	0.12	0.59	0.59	0.09	0.75
(v / s)_i Volume / Saturation Flow Rate	0.09	0.07	0.24	0.12	0.07	0.23
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	220	196	2125	949	166	2697
d1, Uniform Delay [s]	25.43	24.85	6.77	5.80	26.61	2.52
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.30	2.31	0.60	0.47	6.19	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.54	0.42	0.20	0.74	0.31
d, Delay for Lane Group [s/veh]	29.72	27.16	7.38	6.28	32.80	2.81
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.29	1.46	2.50	0.98	1.89	0.83
50th-Percentile Queue Length [ft]	57.24	36.60	62.55	24.52	47.33	20.74
95th-Percentile Queue Length [veh]	4.12	2.63	4.50	1.77	3.41	1.49
95th-Percentile Queue Length [ft]	103.04	65.87	112.60	44.13	85.19	37.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.72	27.16	7.38	6.28	32.80	2.81
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	28.69		7.18		6.68	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.45					
Intersection LOS	A					
Intersection V/C	0.443					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.080

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	29	1	209	41	0	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	54	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1	209	95	0	211
Peak Hour Factor	0.9381	0.9381	0.9381	0.9381	0.9381	0.9381
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	56	25	0	56
Total Analysis Volume [veh/h]	38	1	223	101	0	225
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.23	10.34	0.00	0.00	7.77	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.26	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.60	6.60	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.16		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.87					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	21	31	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	3	23	31	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	24	54	31	4	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	14	8	1	0
Total Analysis Volume [veh/h]	8	24	54	31	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	0.00	9.08	8.63
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.06	0.06	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	1.61	1.61	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	1.84		0.00		8.99	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	21	31	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	8	1	23	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	29	32	23	3	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	8	6	1	1
Total Analysis Volume [veh/h]	16	29	32	23	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	9.07	8.51
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.22	2.22	0.00	0.00	0.47	0.47
d_A, Approach Delay [s/veh]	2.61		0.00		8.79	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.60					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	8	0	23	15	72	0	0	51	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	12	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	10	0	25	27	72	0	0	51	18
Peak Hour Factor	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191	0.8191
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	8	8	22	0	0	16	5
Total Analysis Volume [veh/h]	0	0	0	12	0	31	33	88	0	0	62	22
Pedestrian Volume [ped/h]	0			0			0			0		

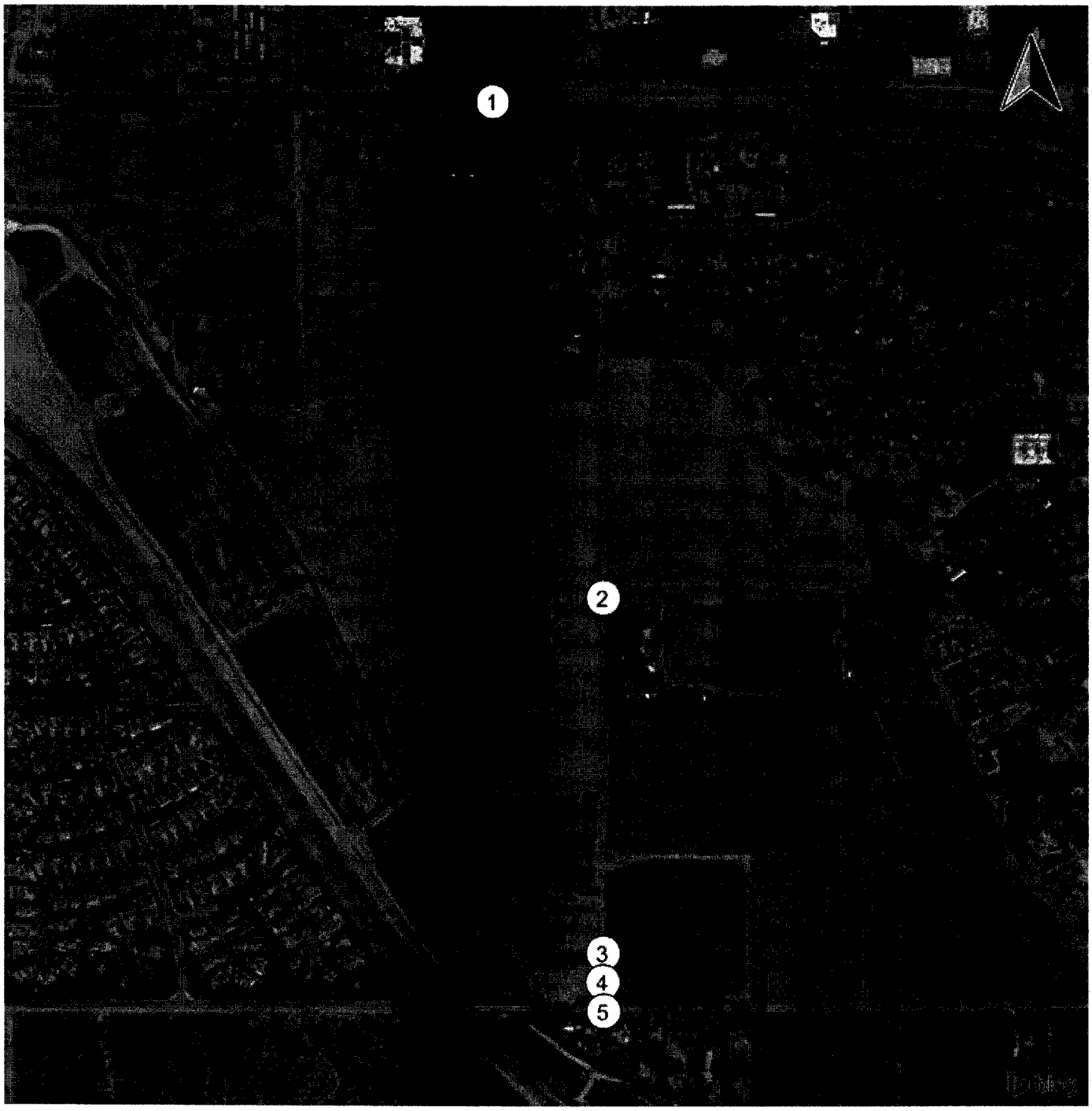
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

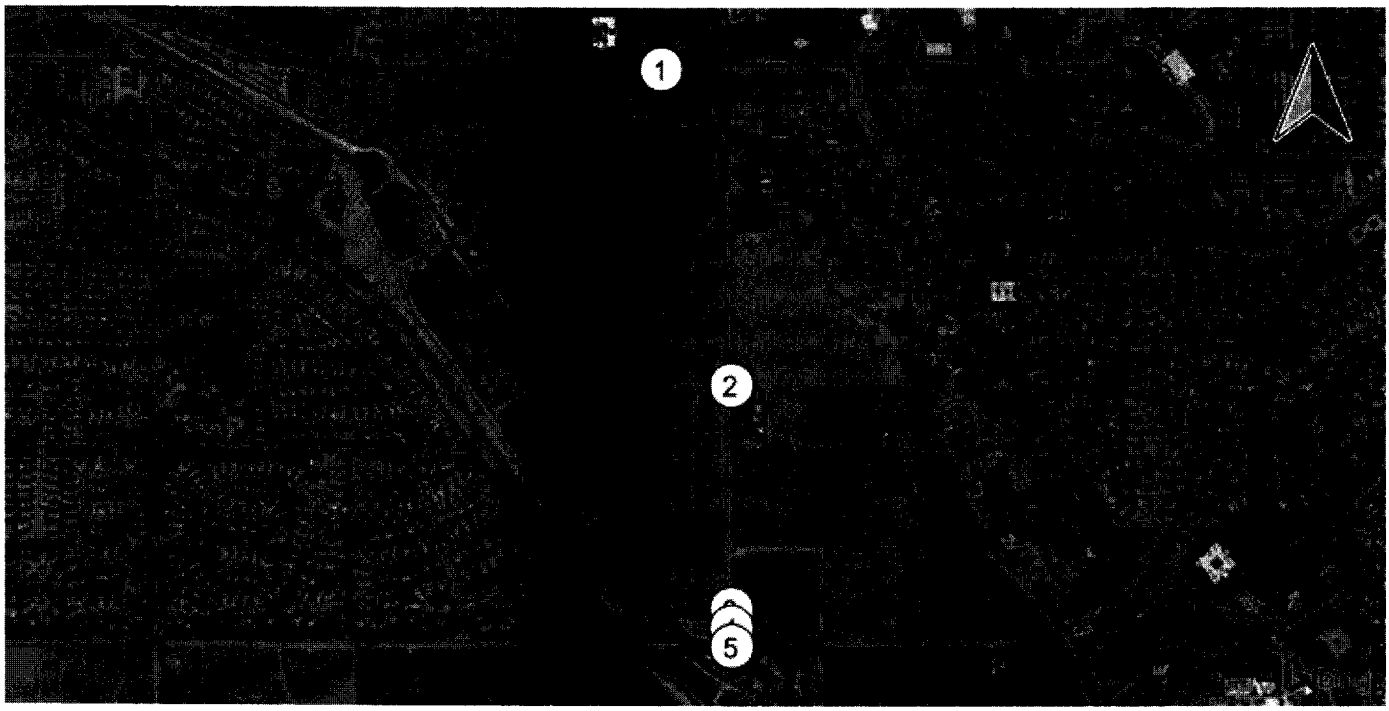
Movement, Approach, & Intersection Results

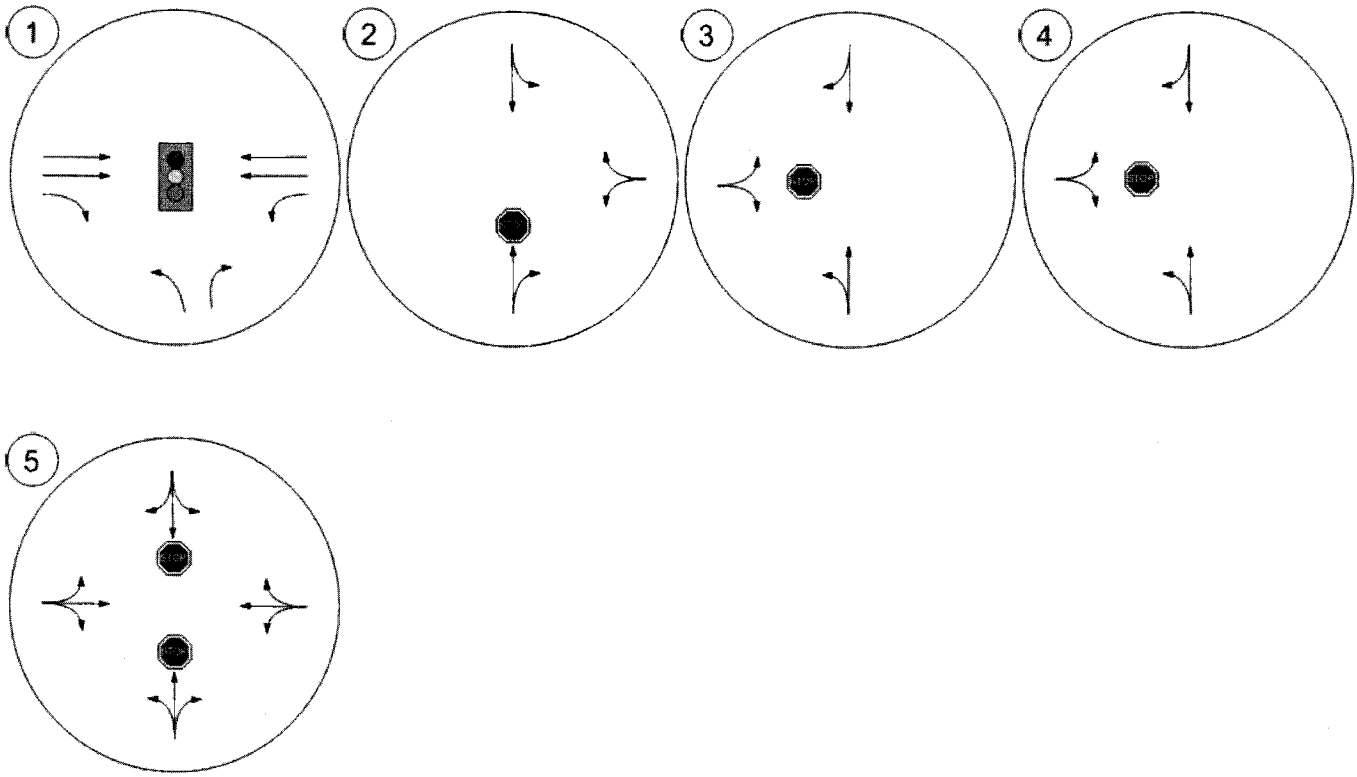
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.28	10.53	8.69	10.20	10.65	8.82	7.41	0.00	0.00	7.37	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.15	0.15	0.15	0.26	0.26	0.26	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	3.76	3.76	3.76	6.45	6.45	6.45	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.83			9.21			2.02			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.58											
Intersection LOS	B											

Study Intersections

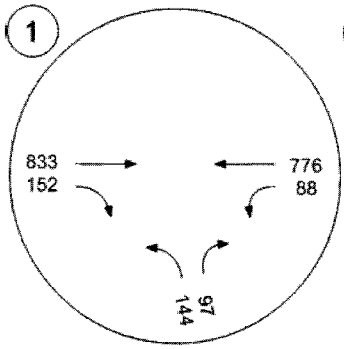


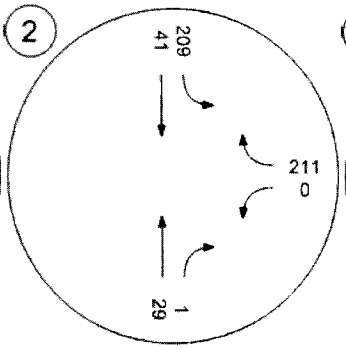
Lane Configuration and Traffic Control

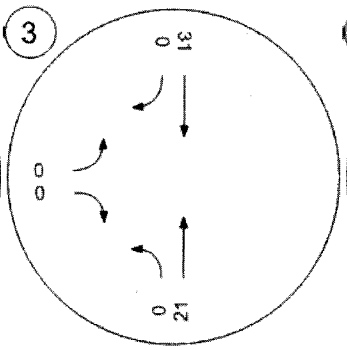


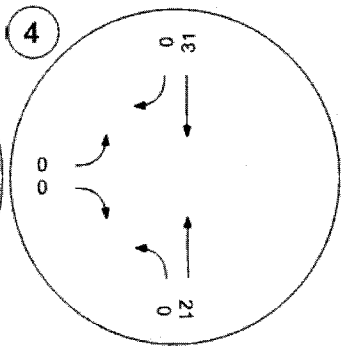


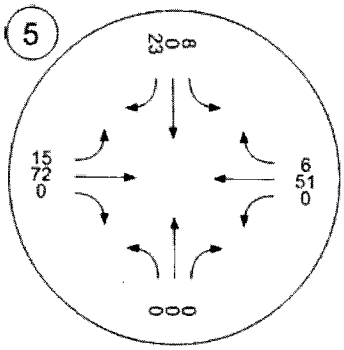
Traffic Volume - Base Volume



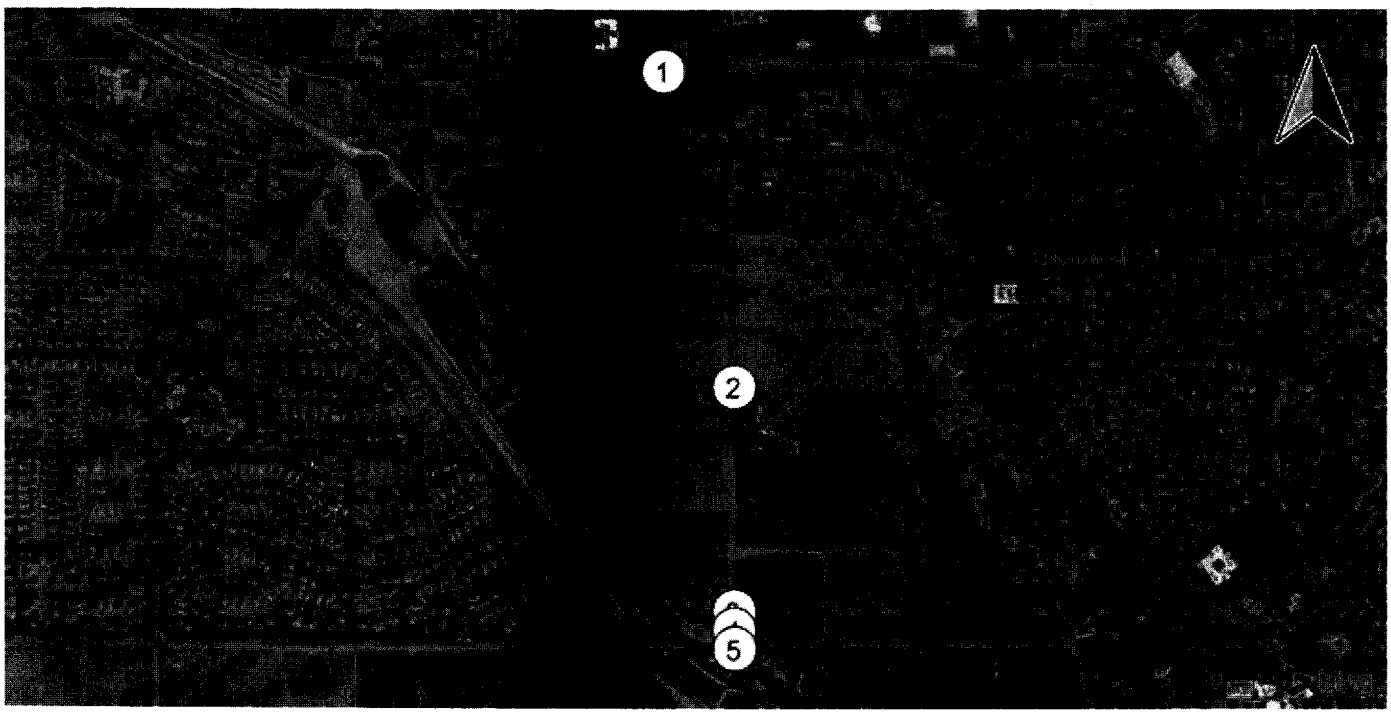


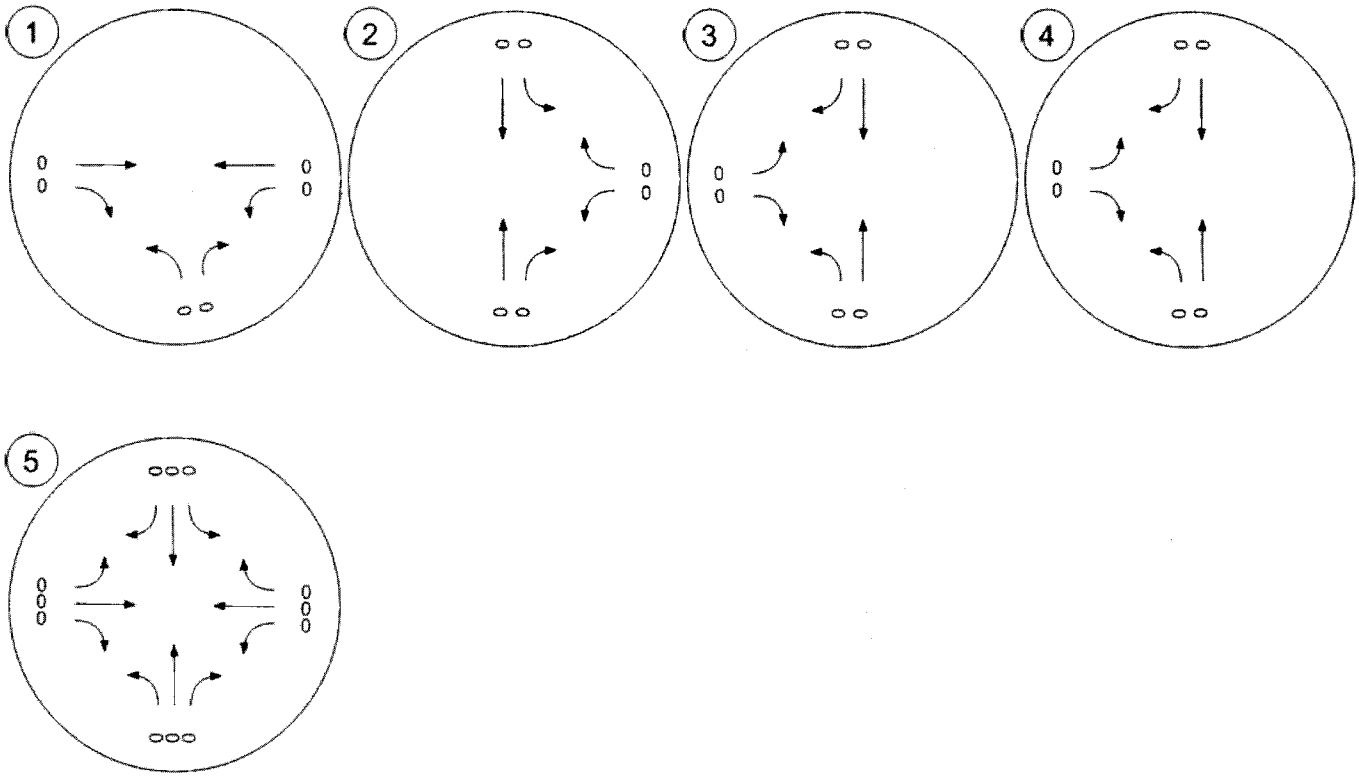




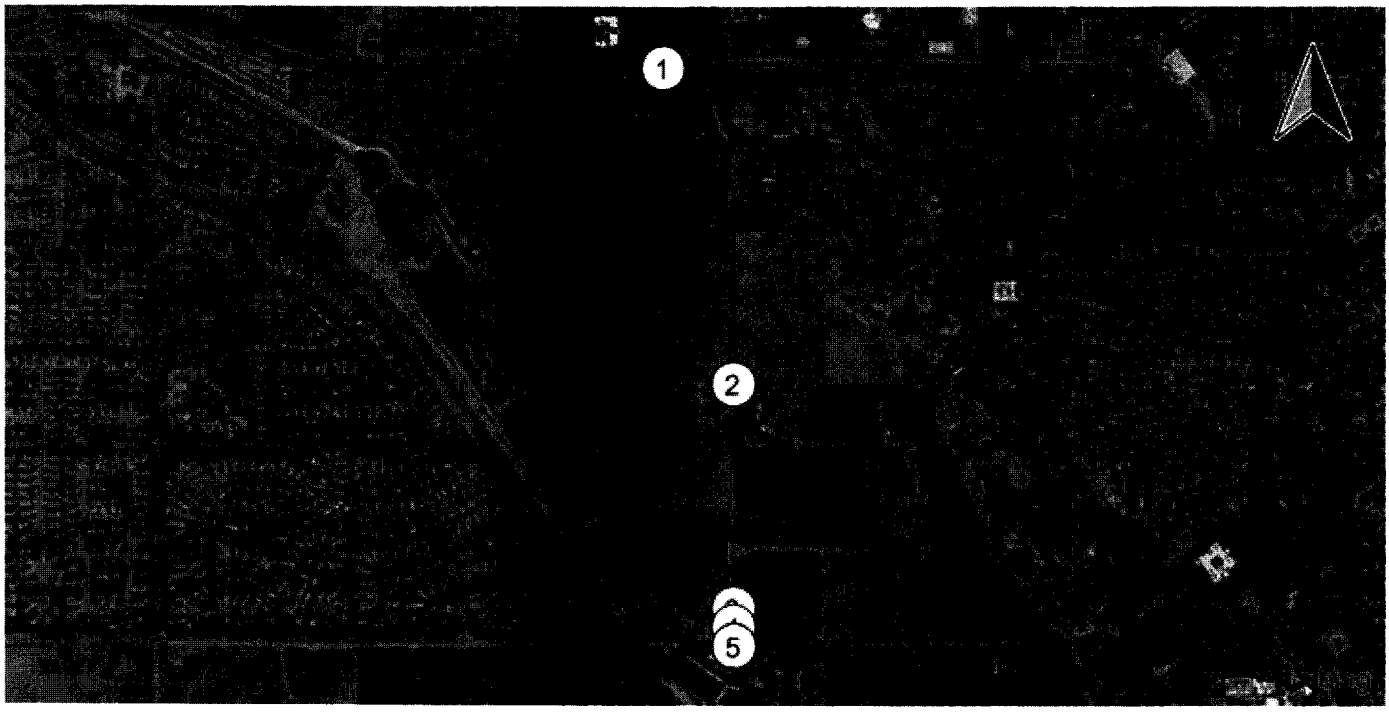


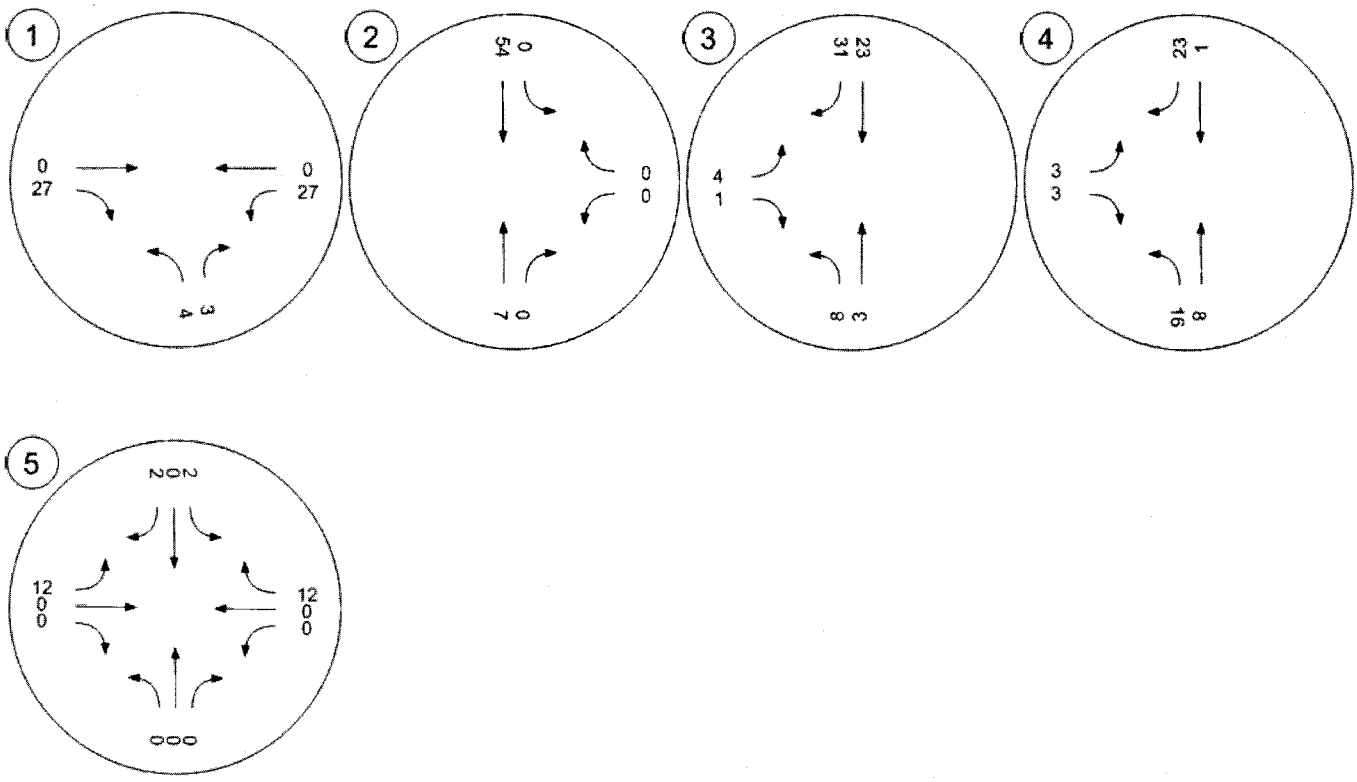
Traffic Volume - In-Process Volume



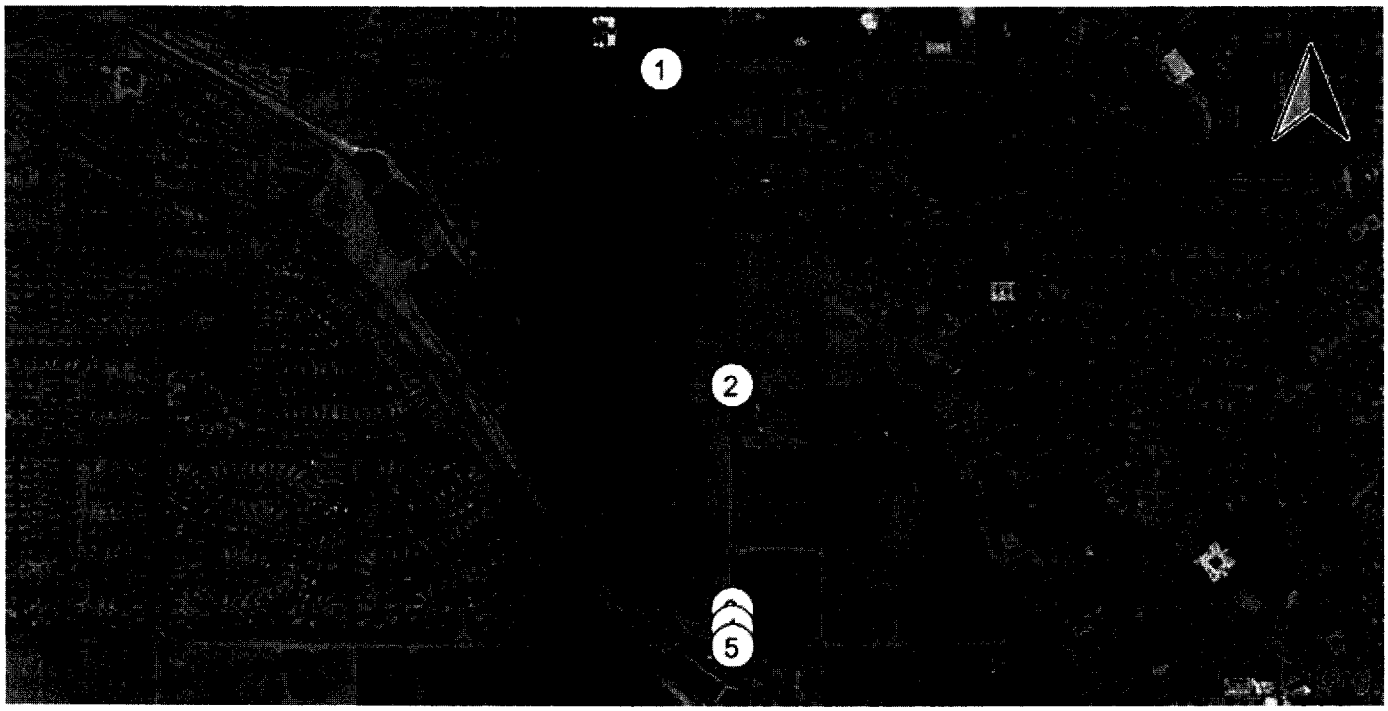


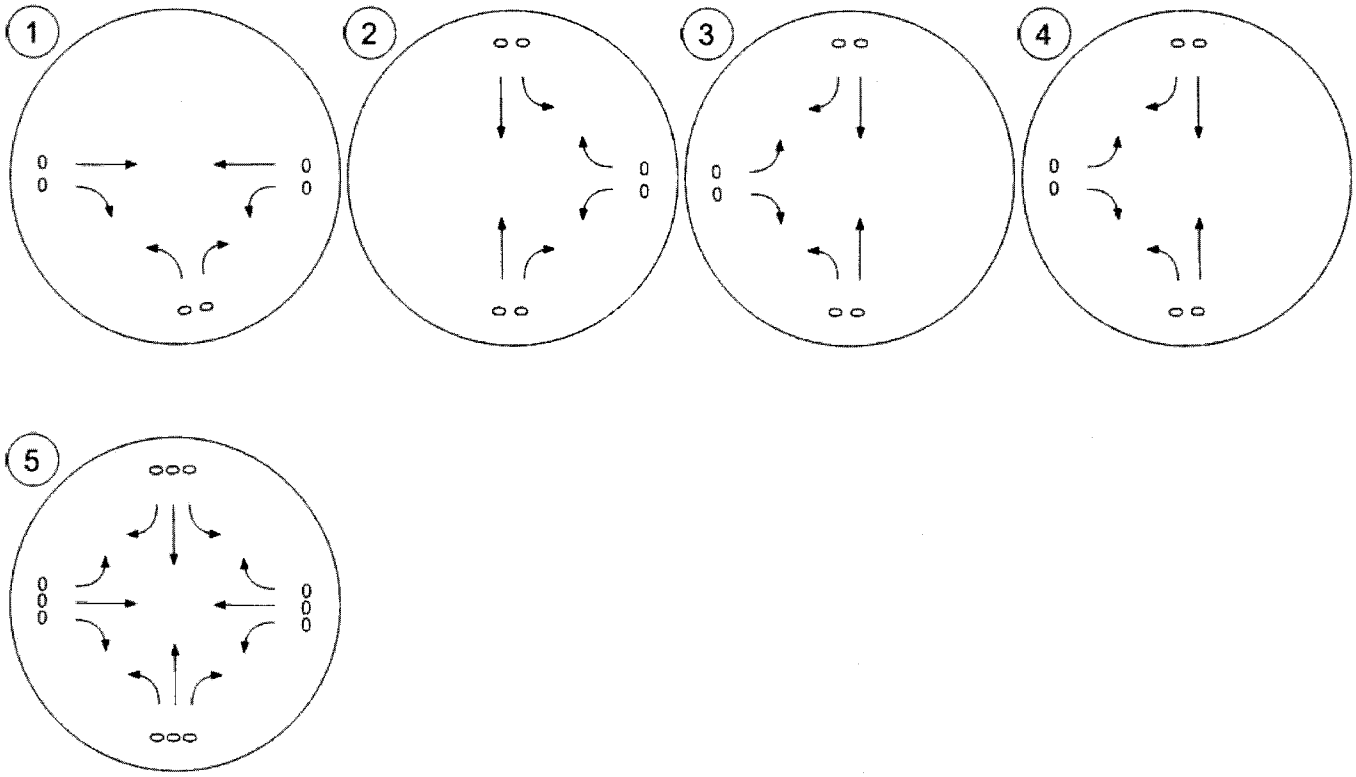
Traffic Volume - Net New Site Trips



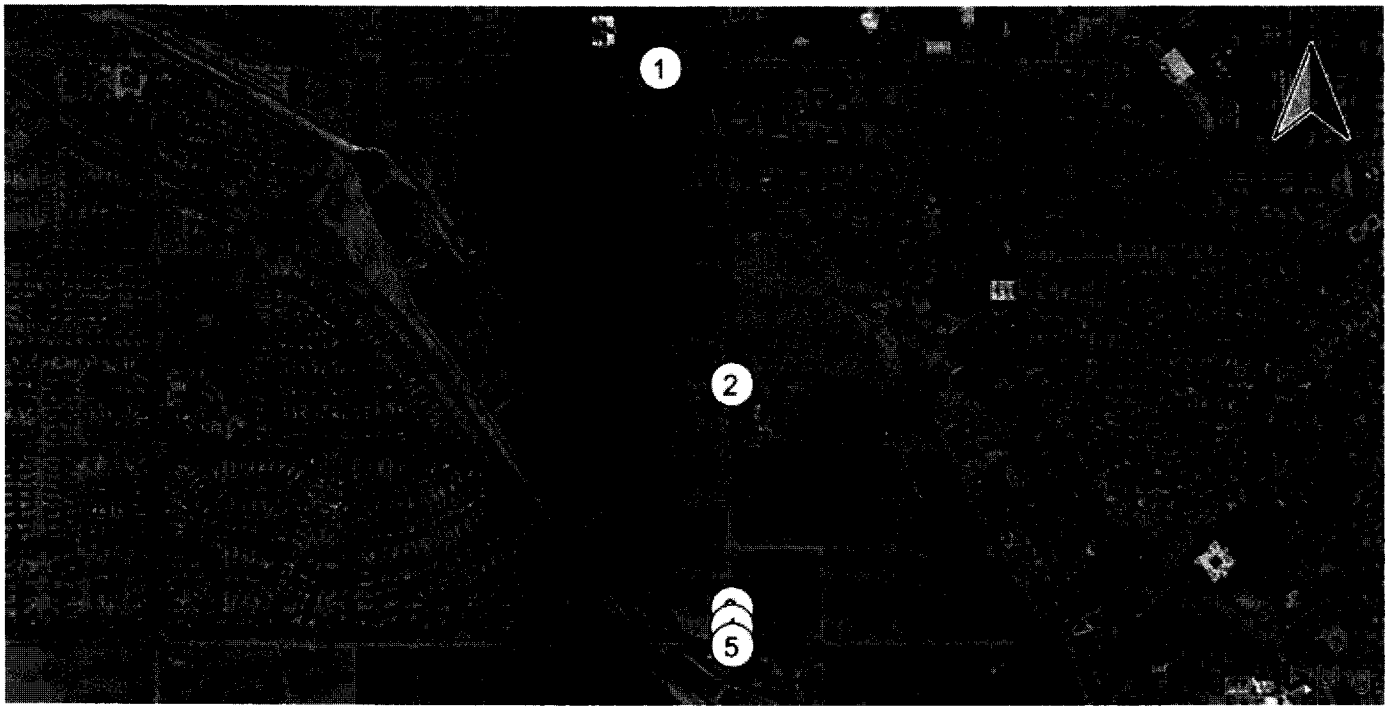


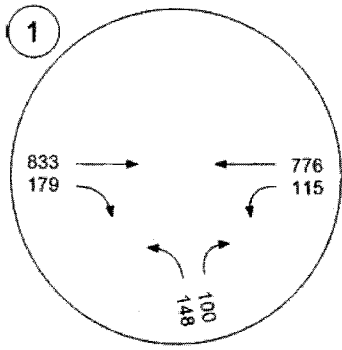
Traffic Volume - Other Volume

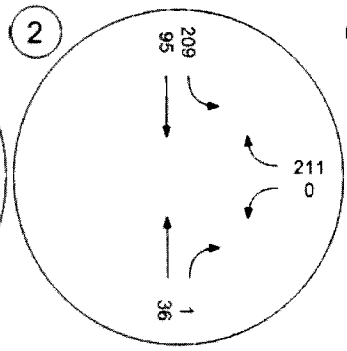


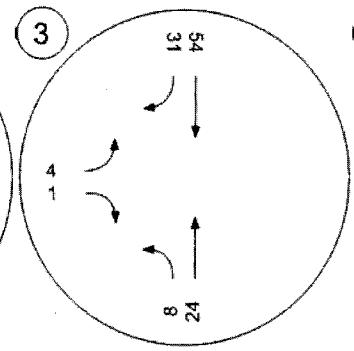


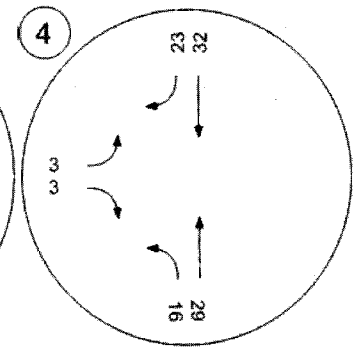
Traffic Volume - Future Total Volume

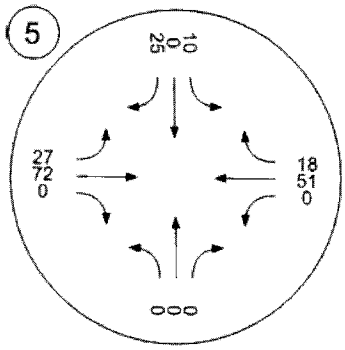




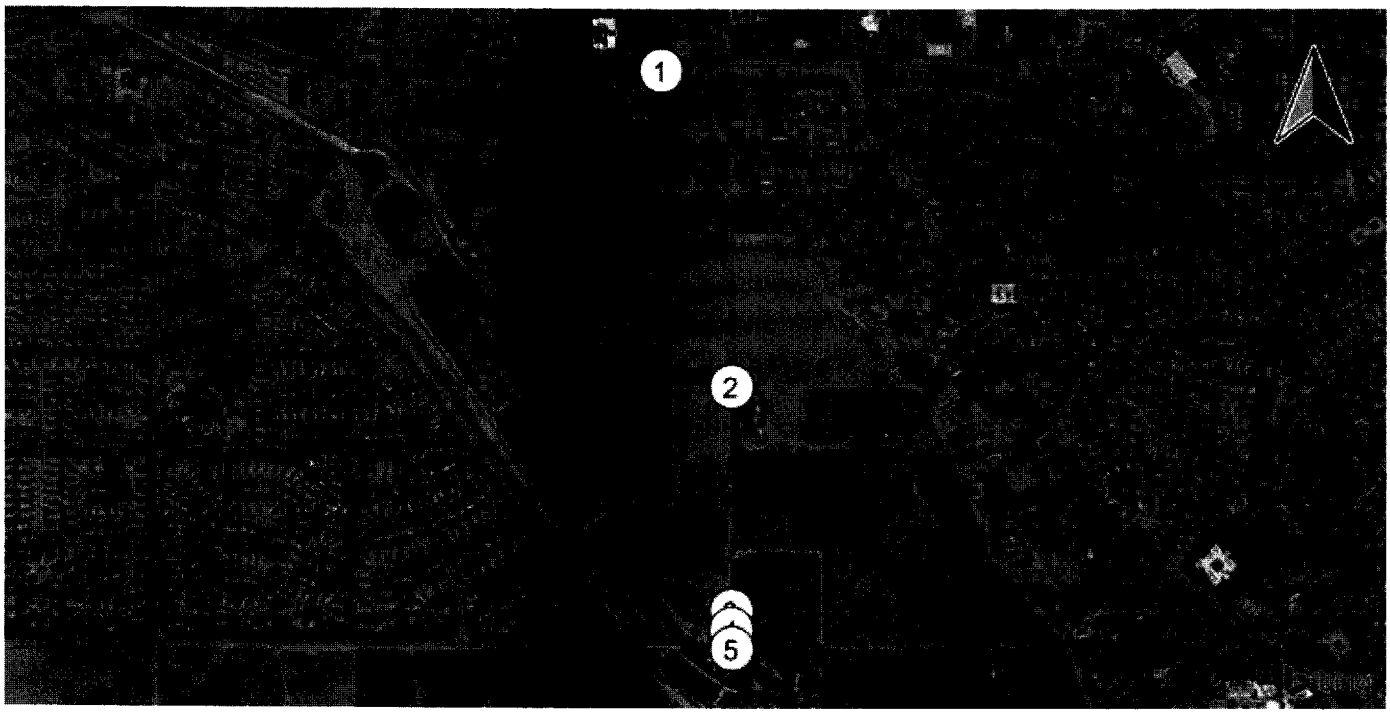


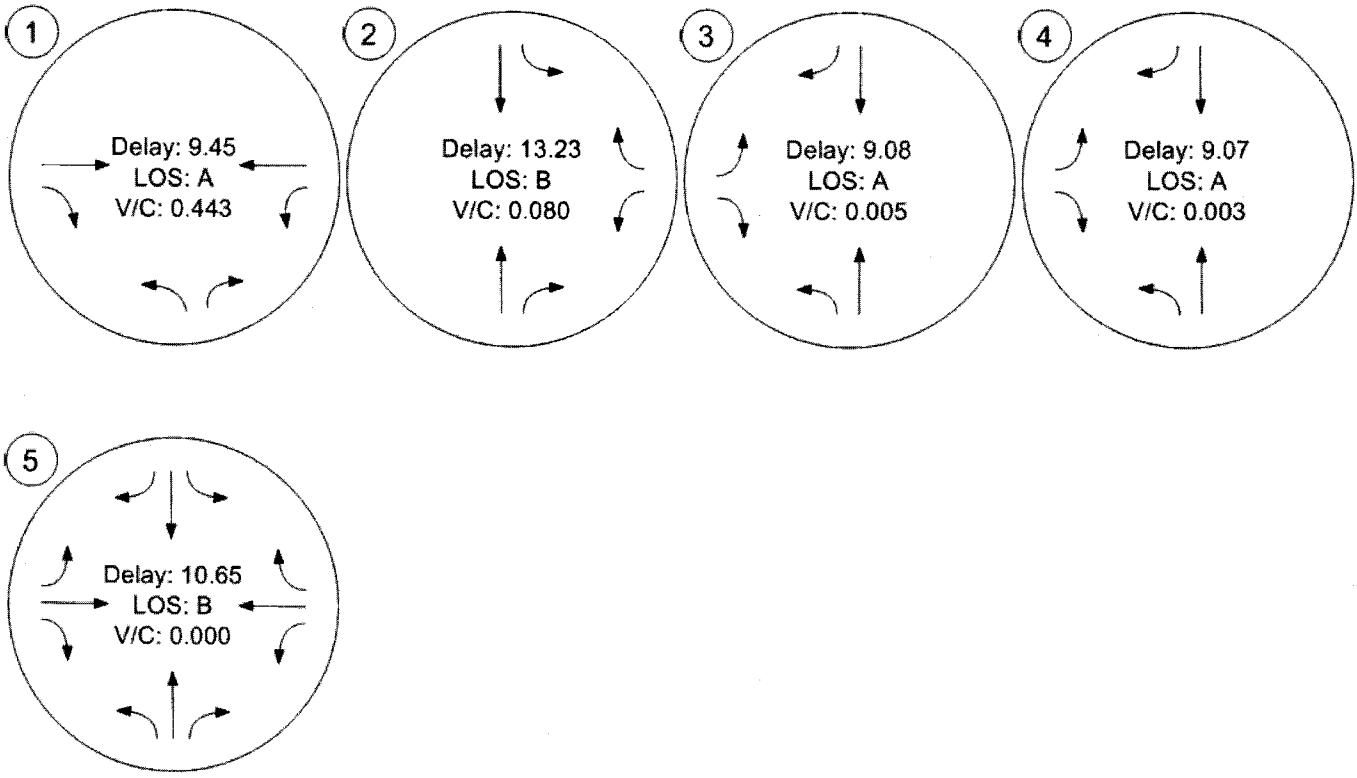




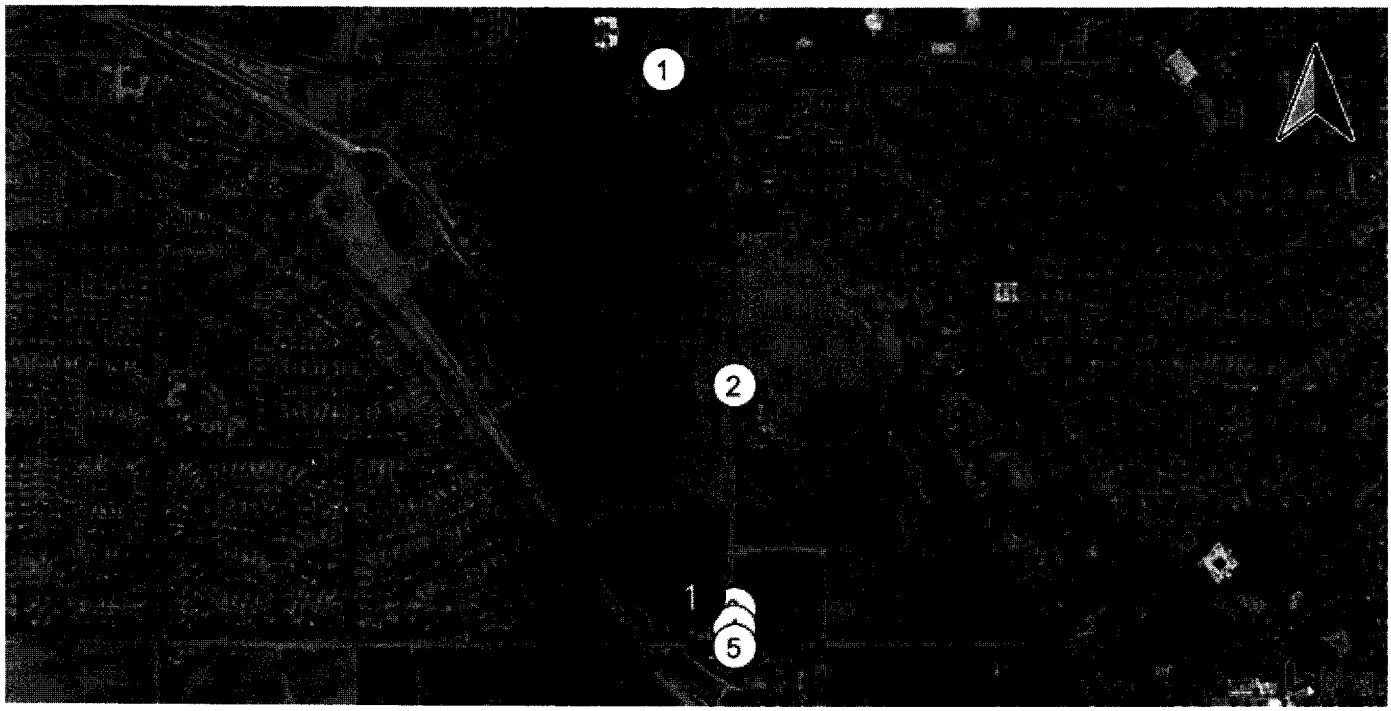


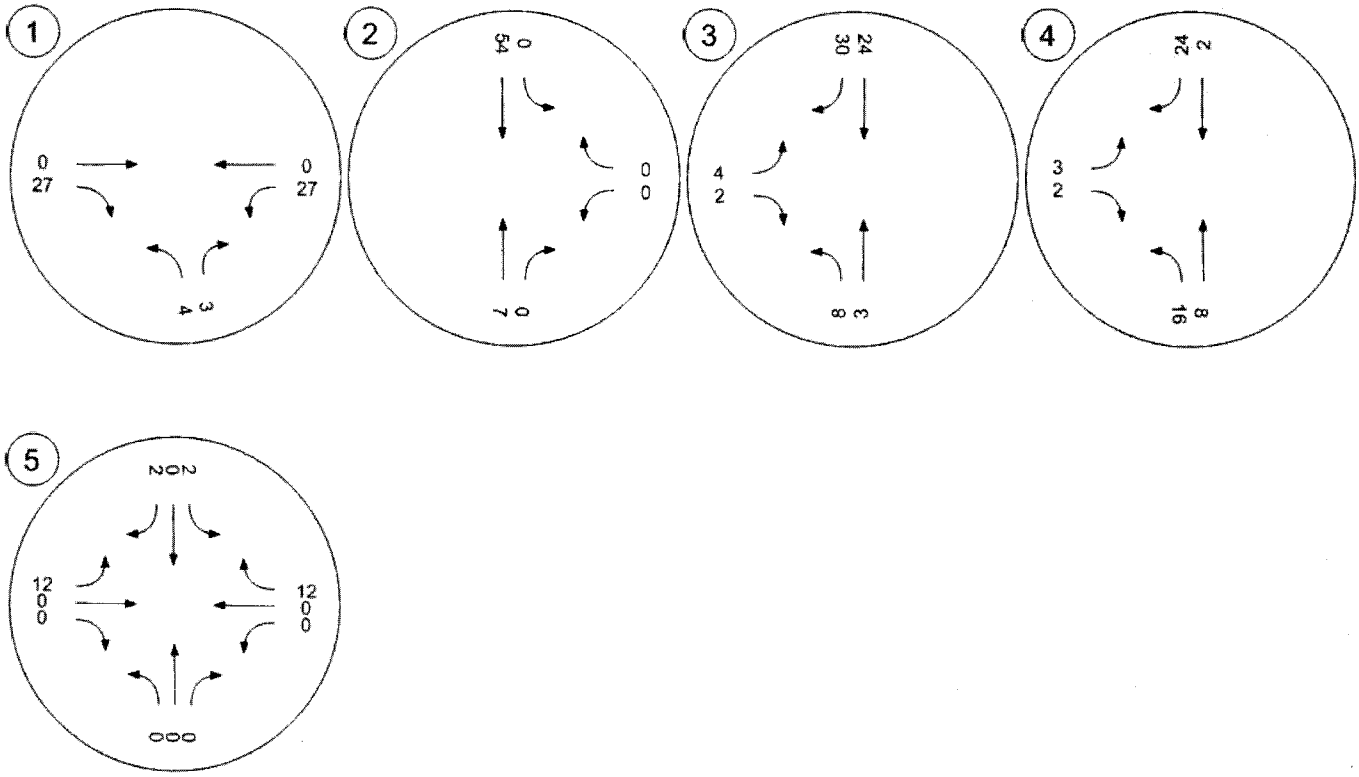
Traffic Conditions



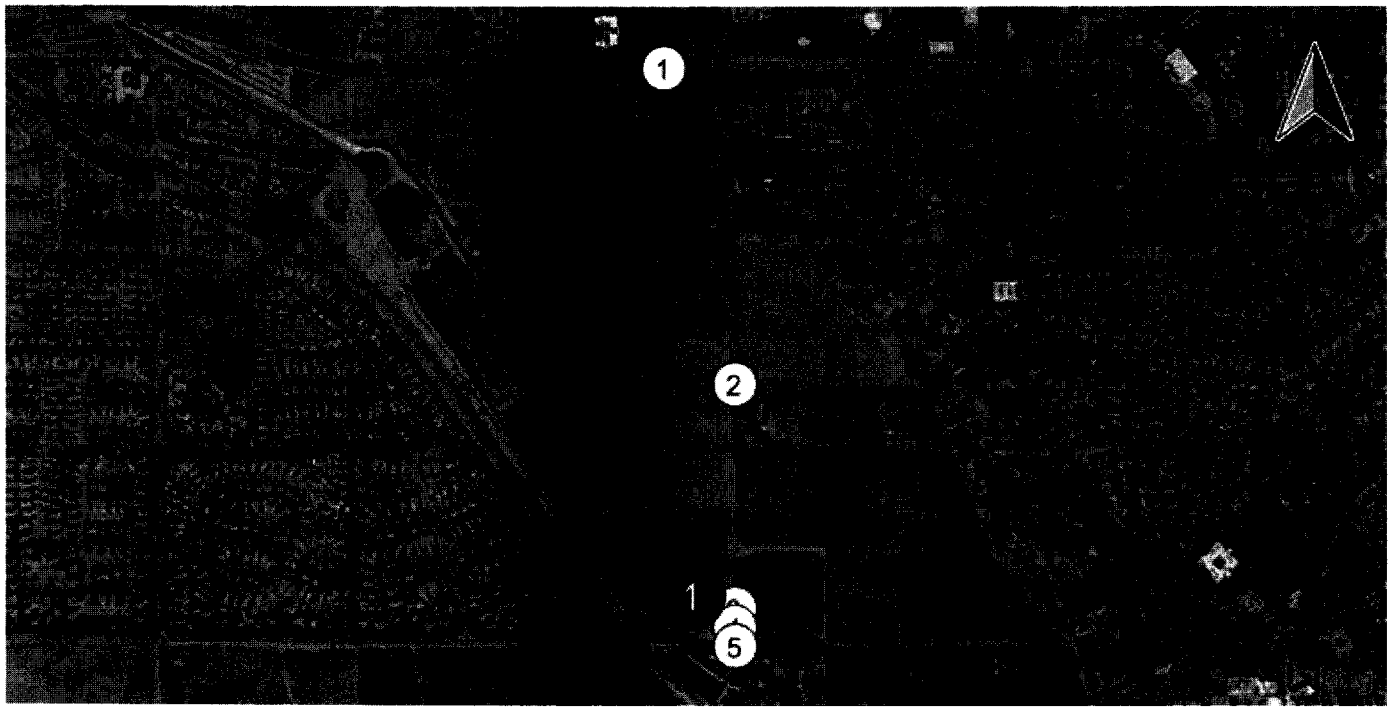


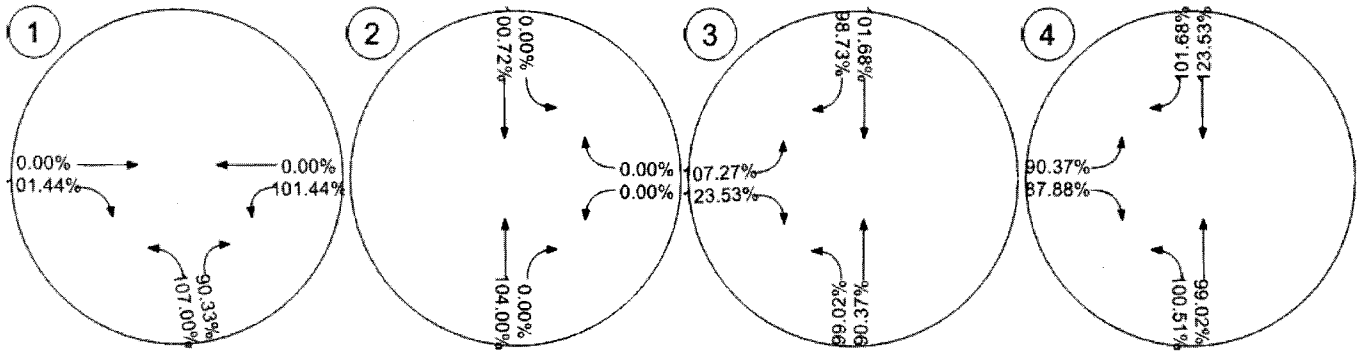
Fair Share - Fair Share Volumes - Zone 1: Project

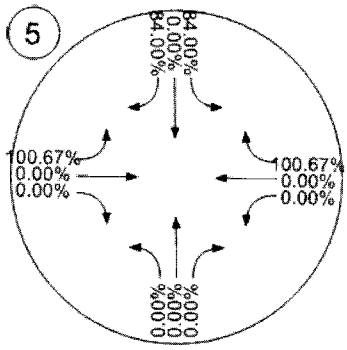




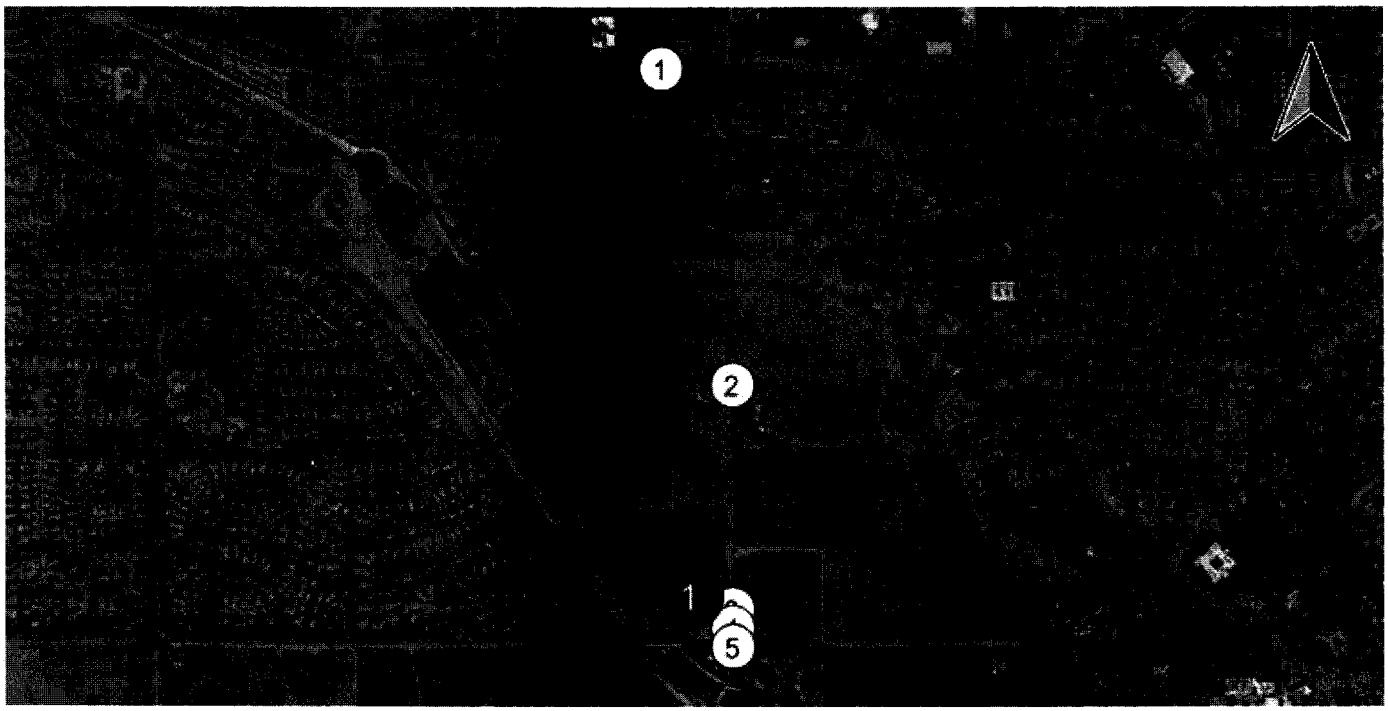
Fair Share - Fair Share % of Net New Site - Zone 1: Project

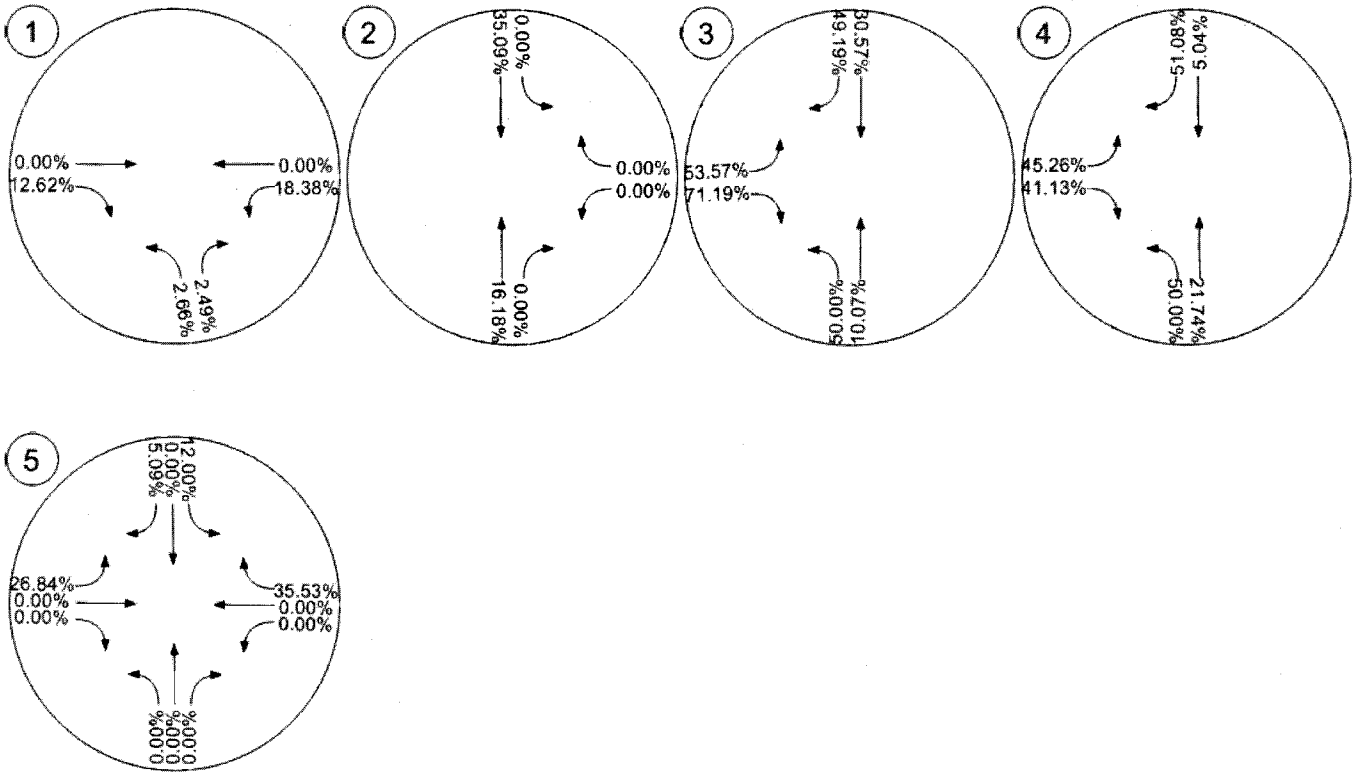






Fair Share - Fair Share % of Total Analysis - Zone 1: Project





Islamic Community Center of Redlands

Vistro File: J:\...\OY Friday Evening.vistro

Scenario 2: Opening Year (2018) With Project - Friday Evening Peak Hour

Report File: J:\...\OYP Friday Evening.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.557	10.9	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.080	15.5	C
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.005	9.2	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.003	9.1	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	11.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	137	94	1128	285	147	703
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	24	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	97	1128	309	171	703
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	25	292	80	44	182
Total Analysis Volume [veh/h]	146	101	1169	320	177	728
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	32	0	13	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	34	34	7	45
g / C, Green / Cycle	0.11	0.11	0.56	0.56	0.12	0.75
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.32	0.20	0.10	0.20
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	208	186	2027	905	227	2720
d1, Uniform Delay [s]	25.62	25.13	8.59	7.25	25.52	2.32
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.24	2.46	1.20	1.08	5.80	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

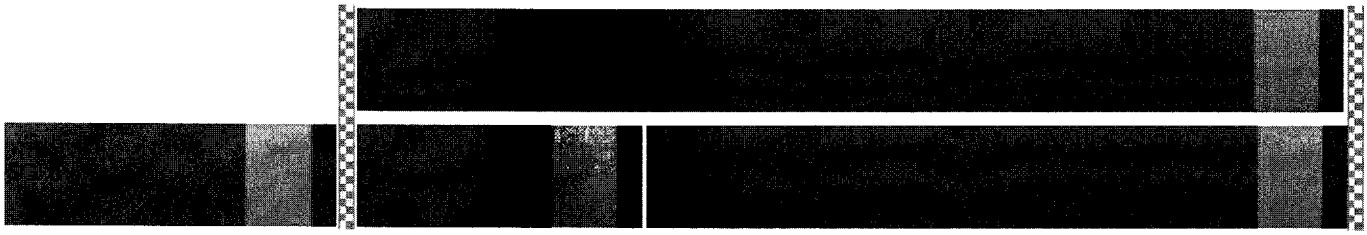
X, volume / capacity	0.70	0.54	0.58	0.35	0.78	0.27
d, Delay for Lane Group [s/veh]	29.86	27.59	9.80	8.34	31.31	2.56
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.14	1.41	4.17	2.04	2.66	0.66
50th-Percentile Queue Length [ft]	53.38	35.22	104.29	51.10	66.61	16.46
95th-Percentile Queue Length [veh]	3.84	2.54	7.51	3.68	4.80	1.19
95th-Percentile Queue Length [ft]	96.08	63.40	187.72	91.98	119.90	29.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.86	27.59	9.80	8.34	31.31	2.56
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	28.93		9.48		8.18	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	10.86					
Intersection LOS	B					
Intersection V/C	0.557					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.080

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	22	0	410	30	0	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	48	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	0	410	78	0	203
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	107	20	0	53
Total Analysis Volume [veh/h]	30	0	429	82	0	212
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.49	11.87	0.00	0.00	8.27	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.26	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.52	6.52	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.49		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.62					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	29	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	3	21	27	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	32	66	27	4	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	8	17	7	1	0
Total Analysis Volume [veh/h]	7	32	66	27	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.39	0.00	0.00	0.00	9.16	8.67
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	1.98	1.98	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	1.33		0.00		9.06	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	29	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	7	1	21	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	36	46	21	3	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	9	12	5	1	1
Total Analysis Volume [veh/h]	13	36	46	21	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.14	8.57
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.45	2.45	0.00	0.00	0.48	0.48
d_A, Approach Delay [s/veh]	1.95		0.00		8.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.22					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	8	0	37	26	116	0	0	57	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	10	0	39	36	116	0	0	57	13
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	11	10	32	0	0	16	4
Total Analysis Volume [veh/h]	0	0	1	11	0	42	39	126	0	0	62	14
Pedestrian Volume [ped/h]	0			0			0			0		

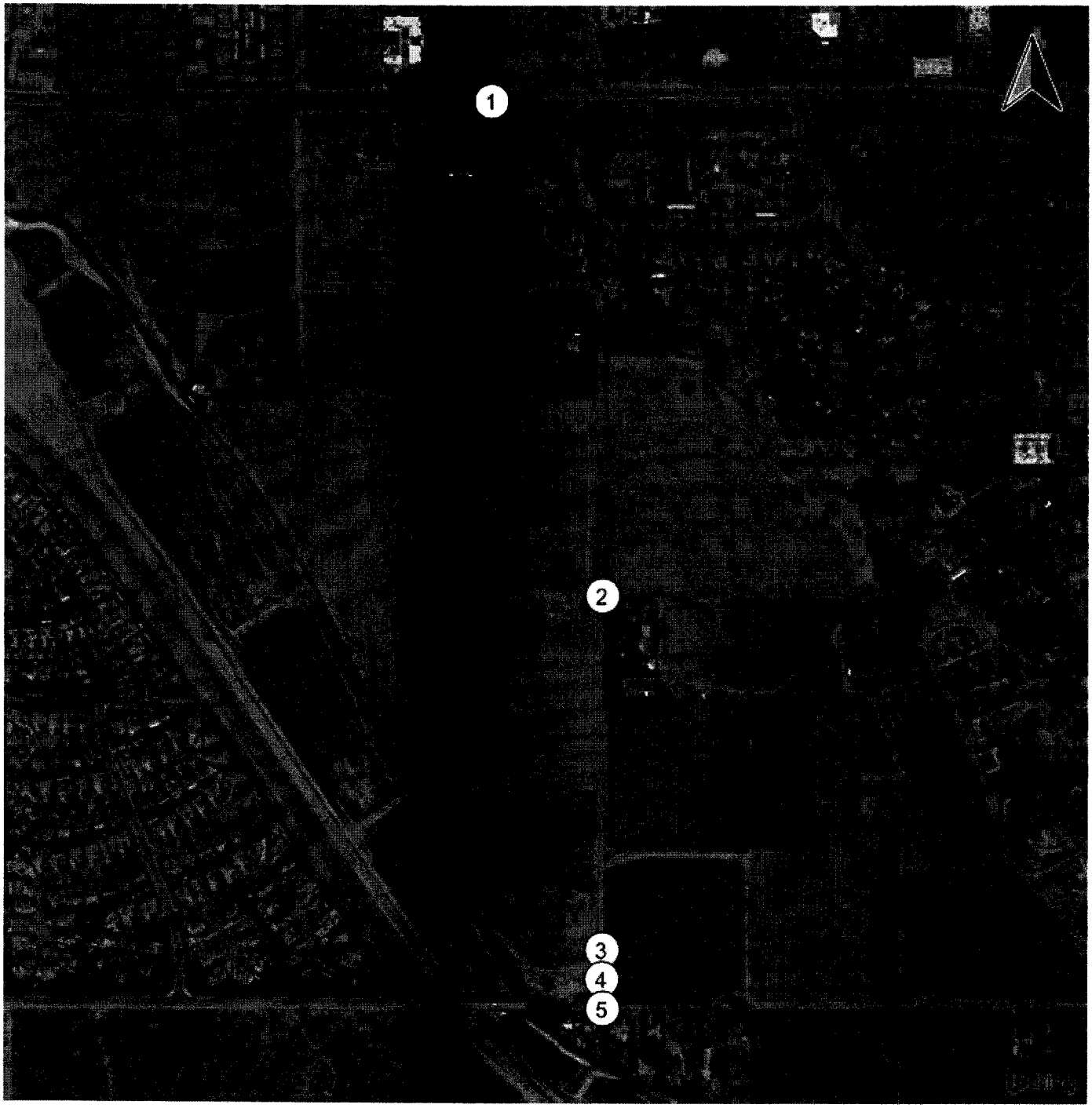
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

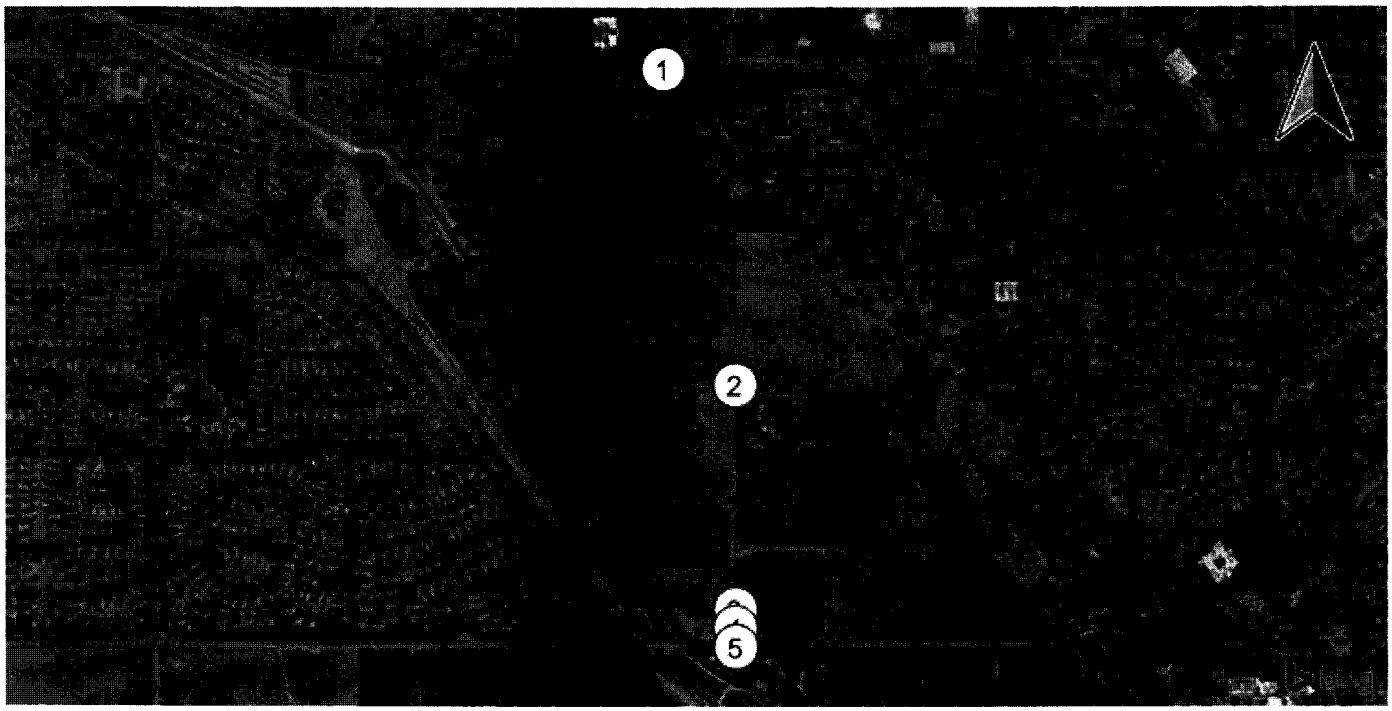
Movement, Approach, & Intersection Results

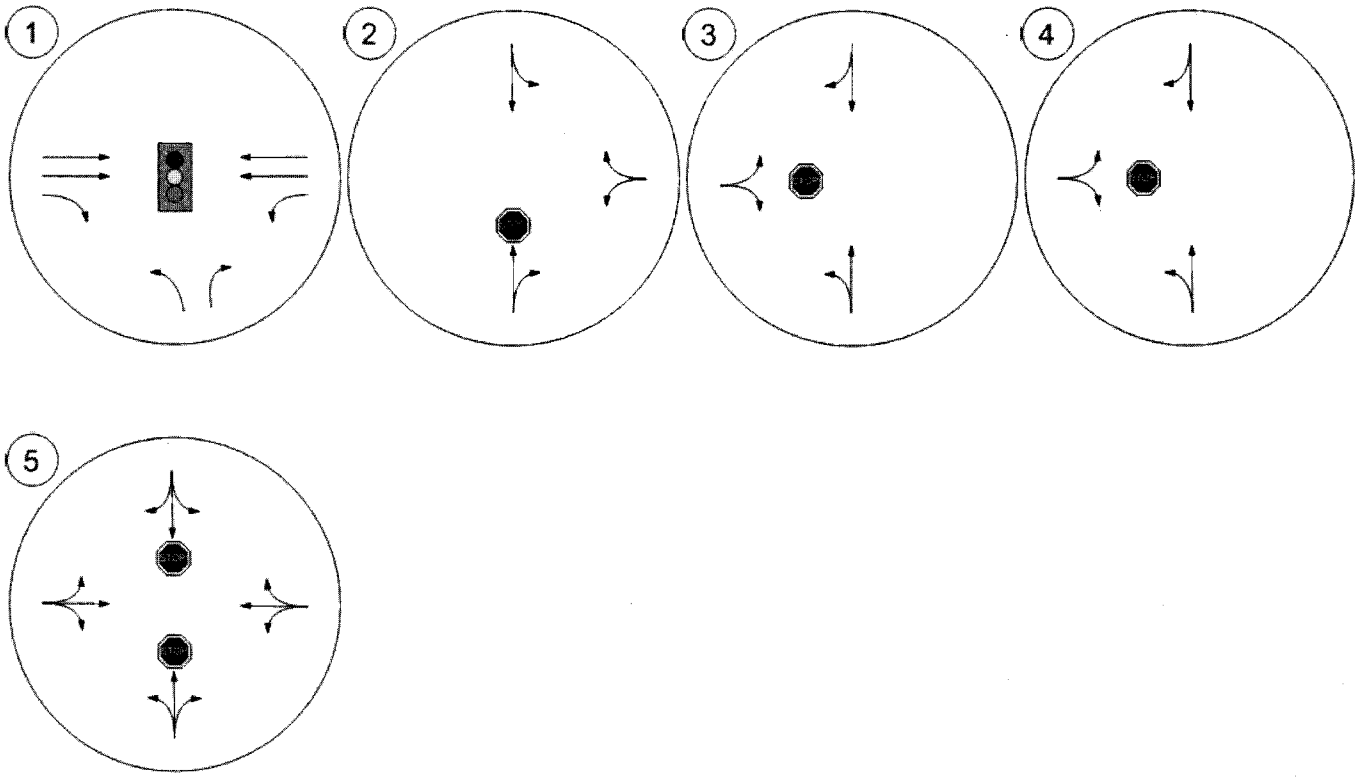
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.80	10.86	8.88	10.64	11.05	8.85	7.41	0.00	0.00	7.44	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.19	0.19	0.19	0.36	0.36	0.36	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	4.65	4.65	4.65	9.01	9.01	9.01	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.88			9.22			1.75			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.67											
Intersection LOS	B											

Study Intersections

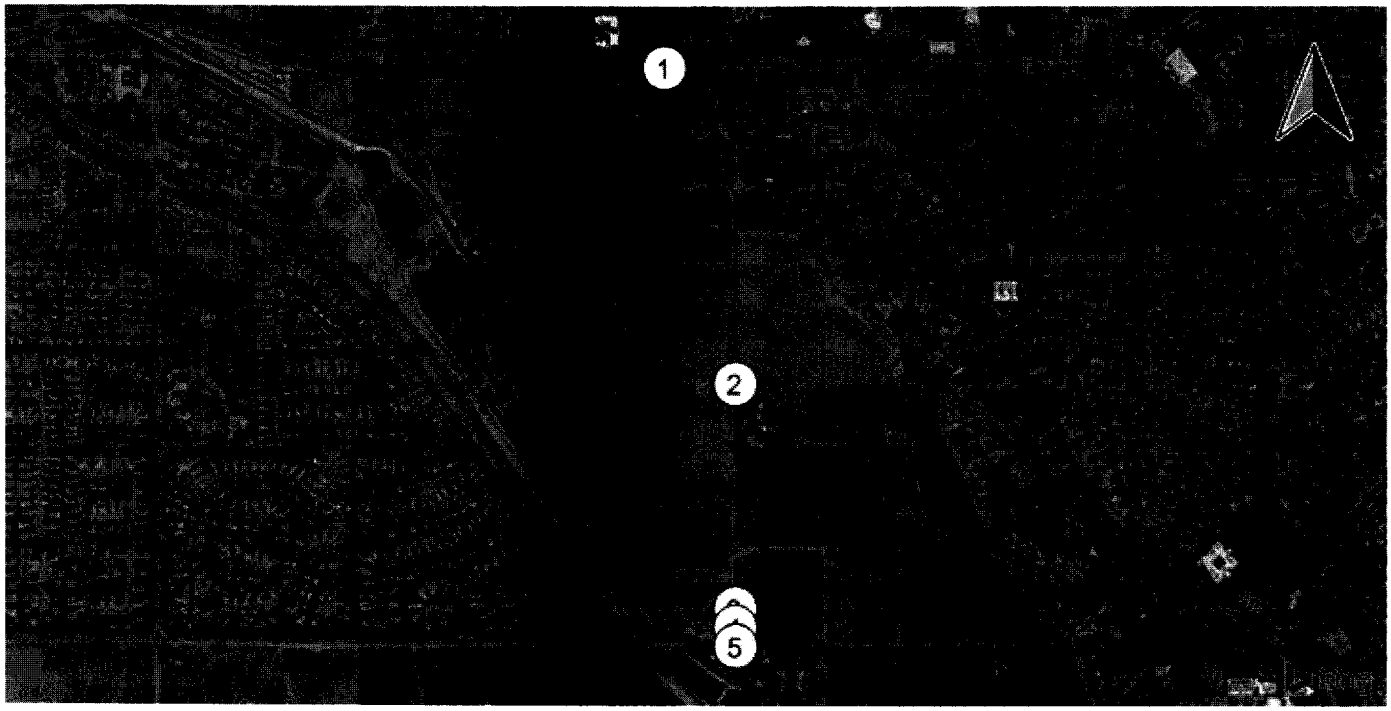


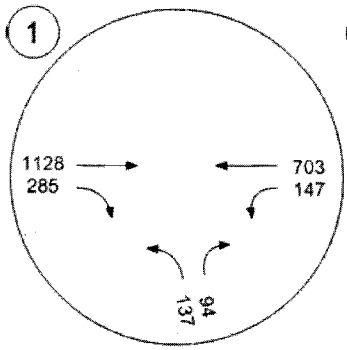
Lane Configuration and Traffic Control

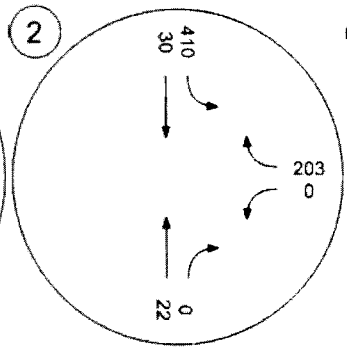


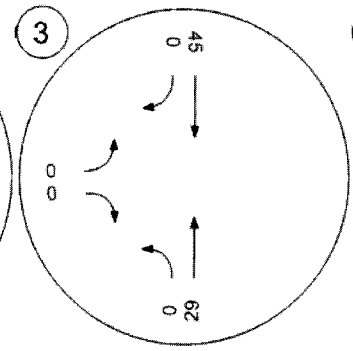


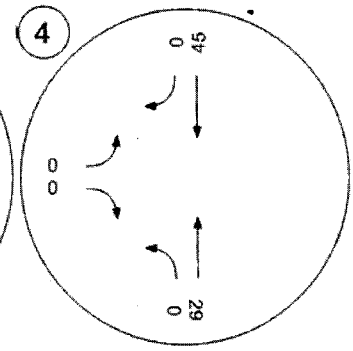
Traffic Volume - Base Volume

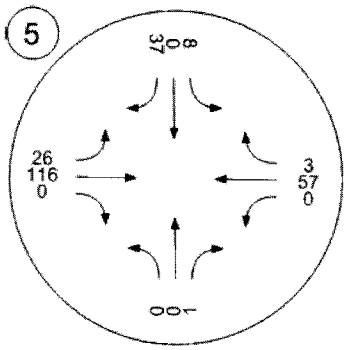




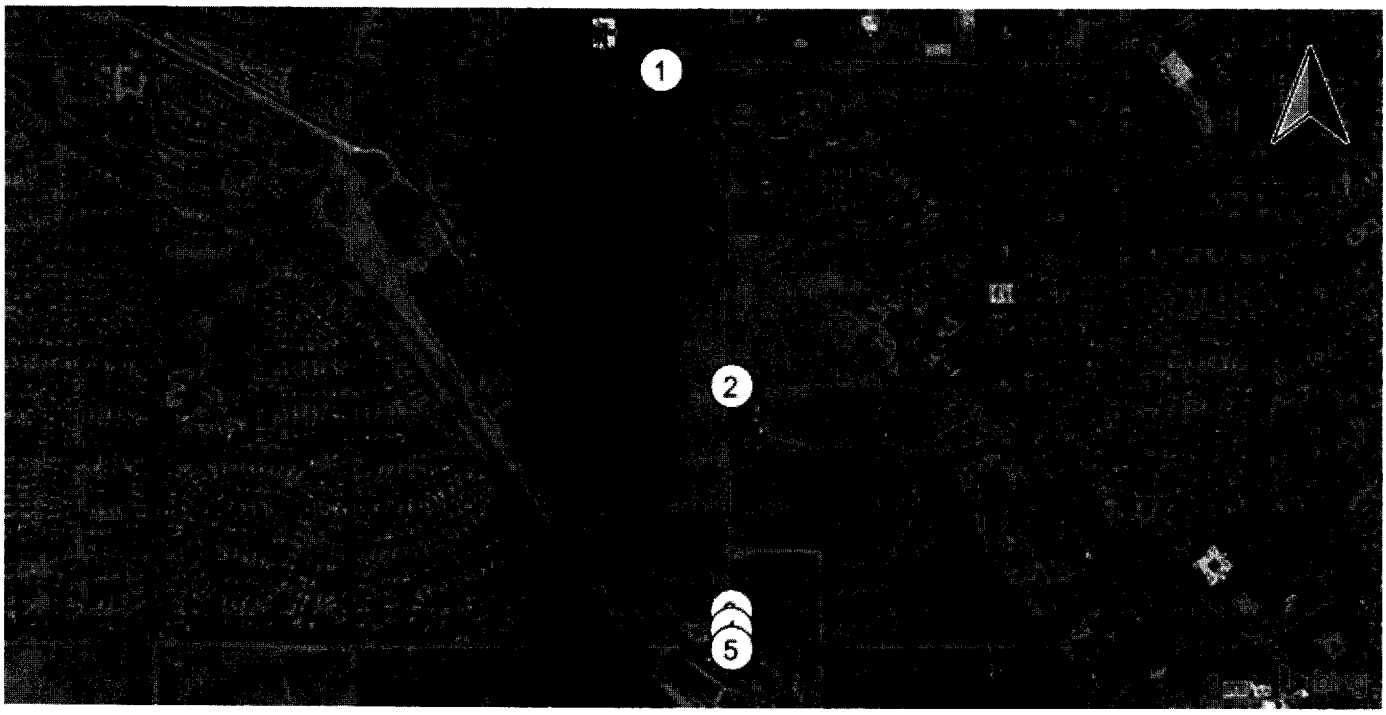


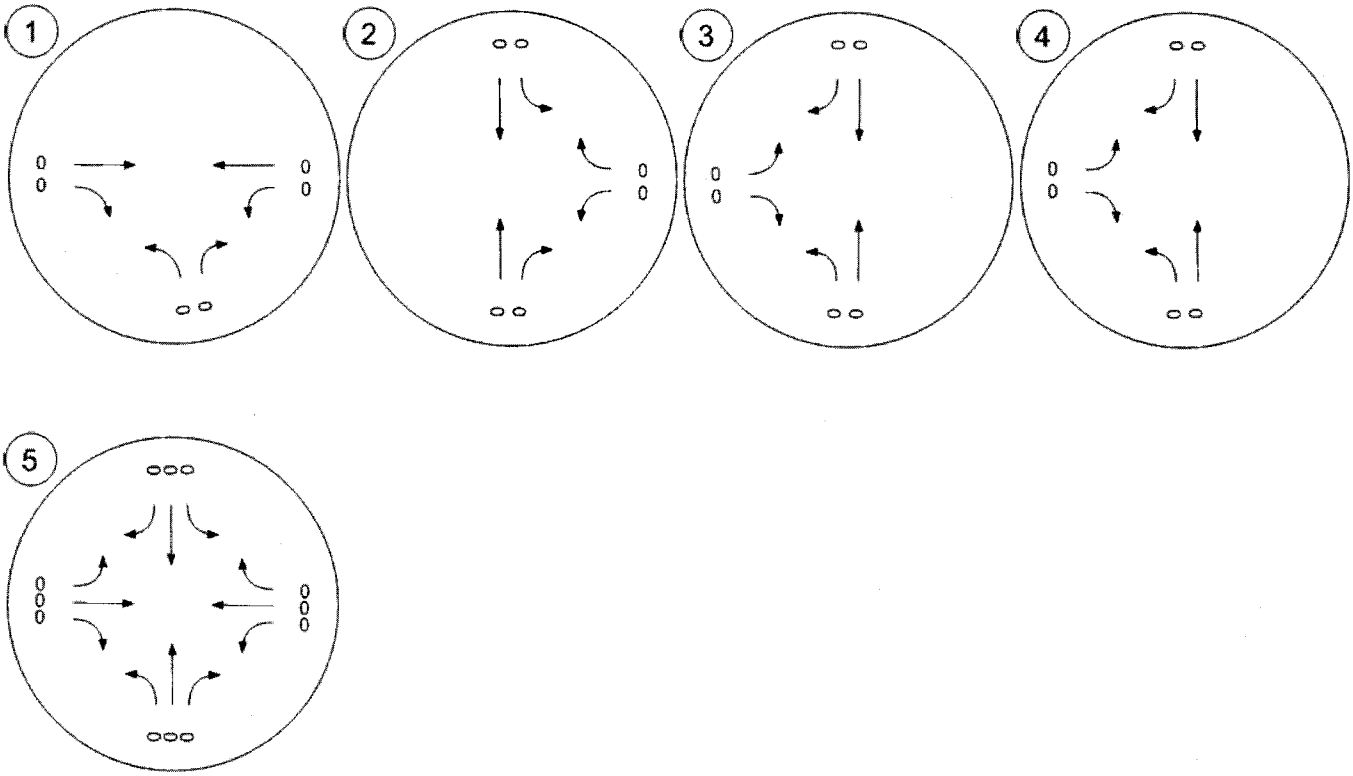




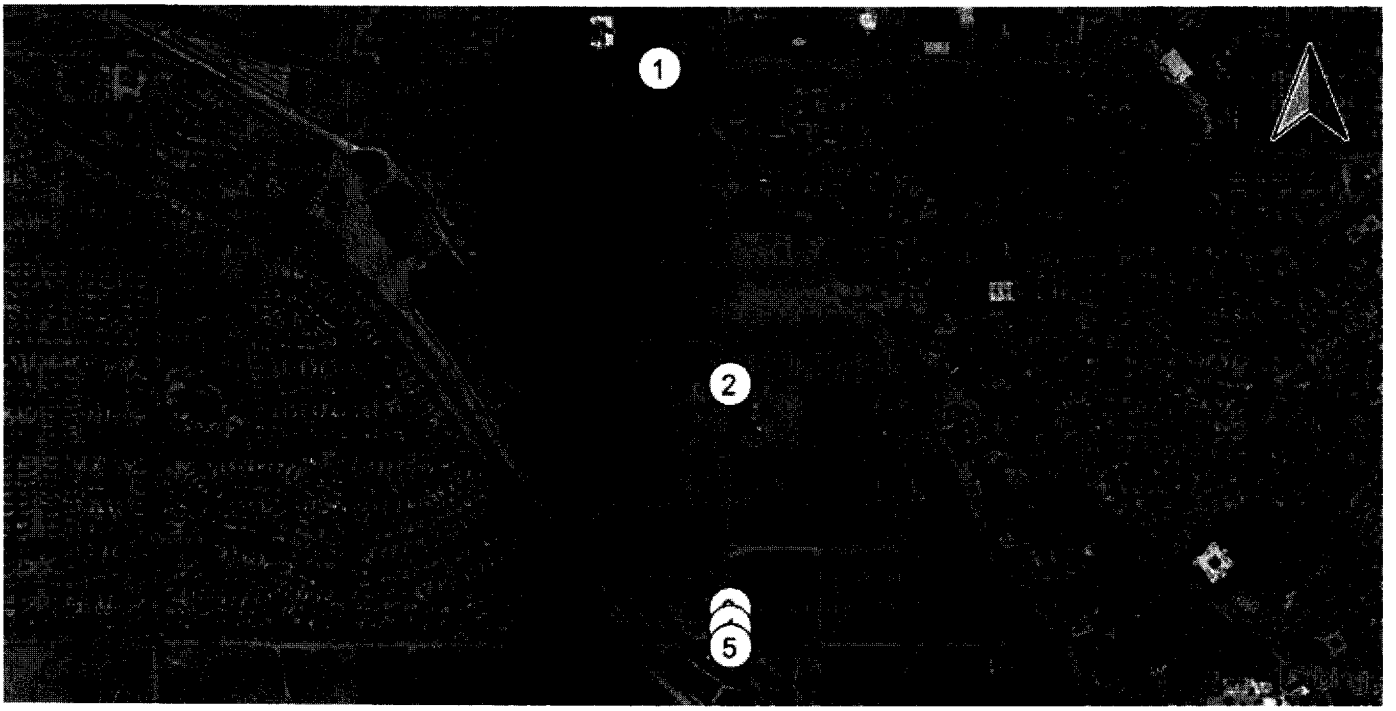


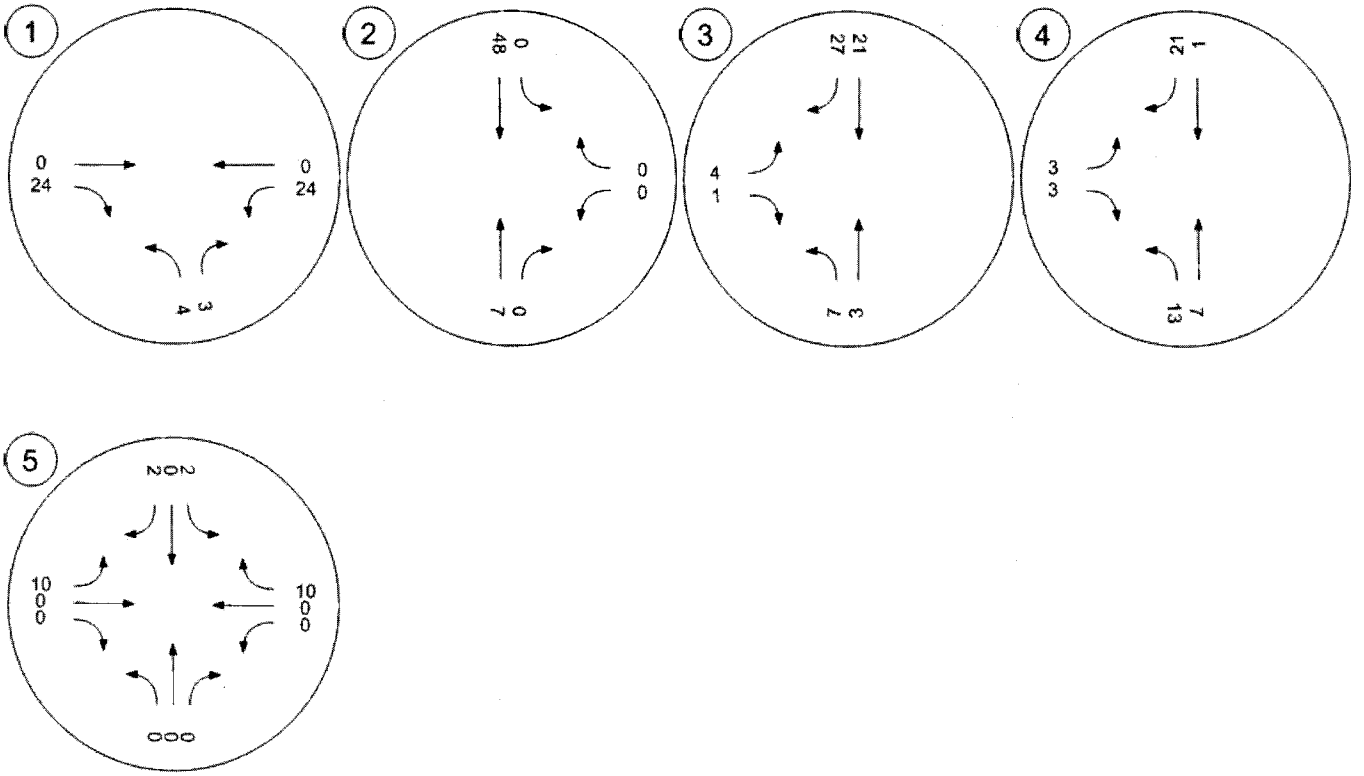
Traffic Volume - In-Process Volume



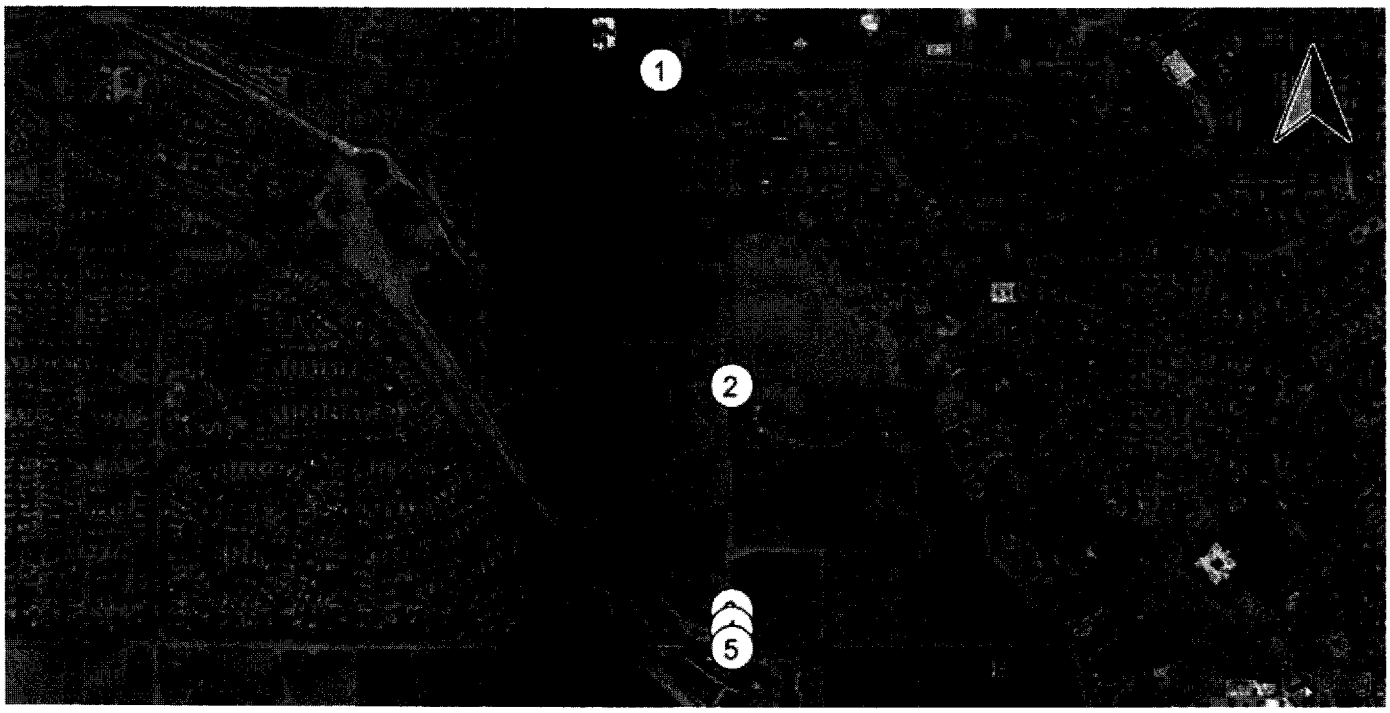


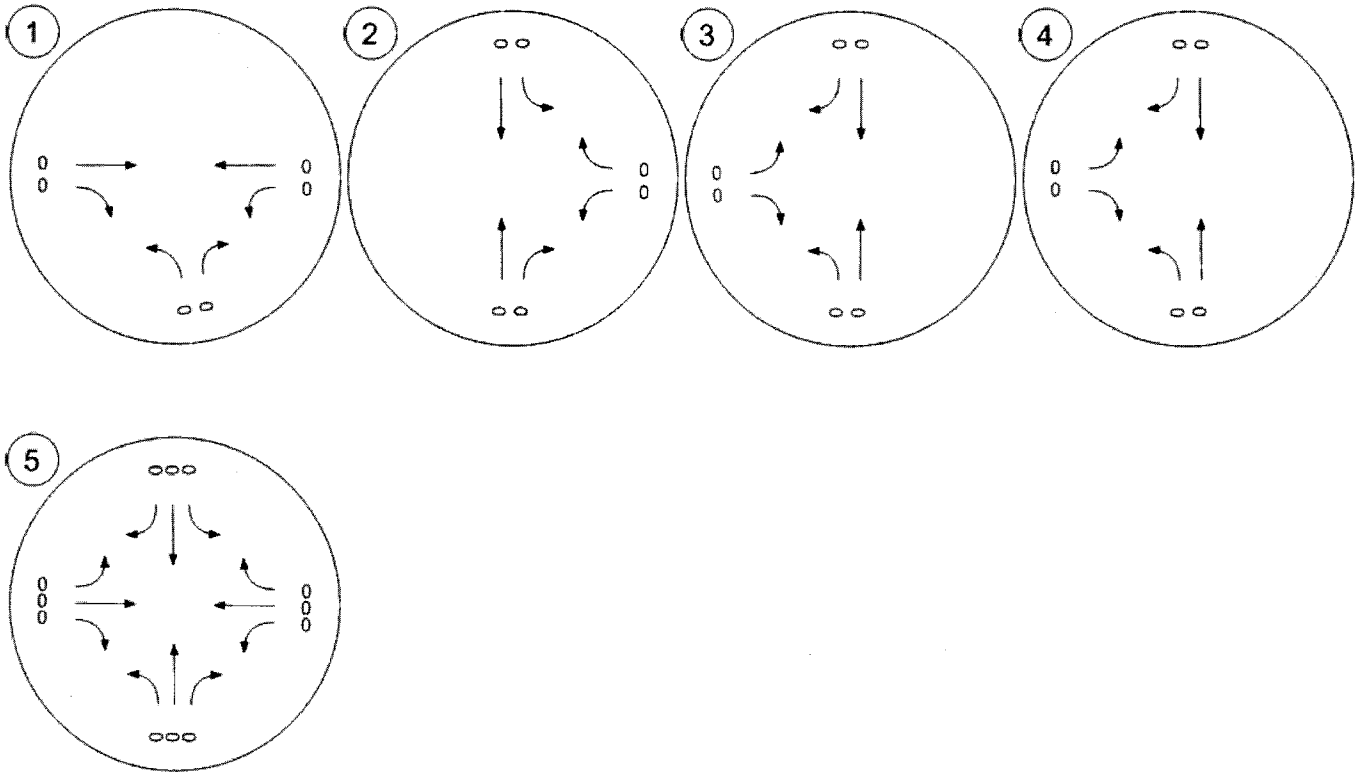
Traffic Volume - Net New Site Trips



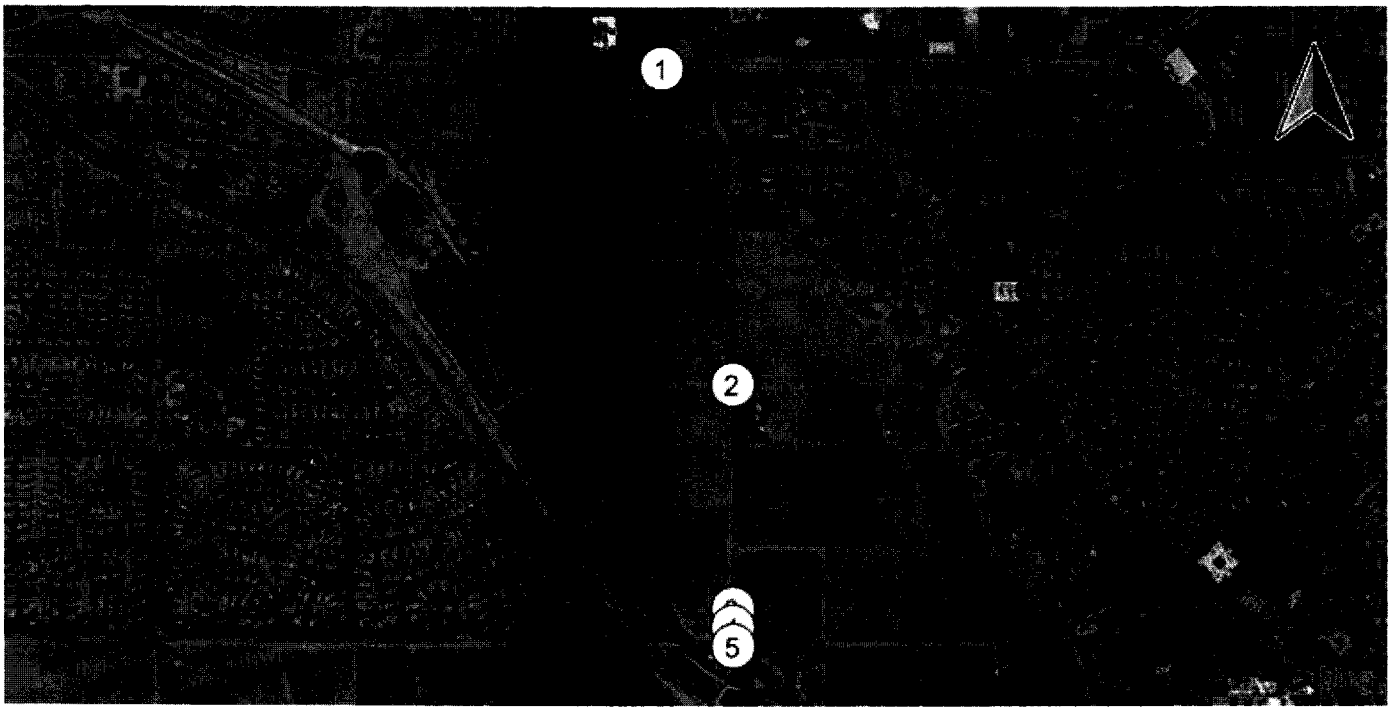


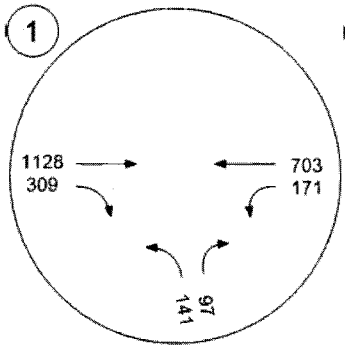
Traffic Volume - Other Volume

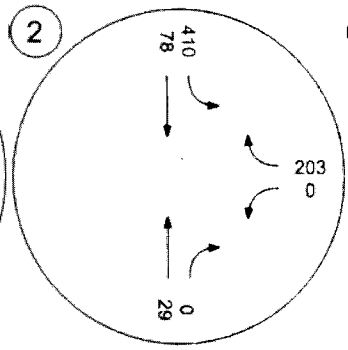


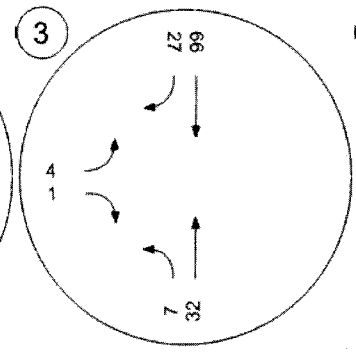


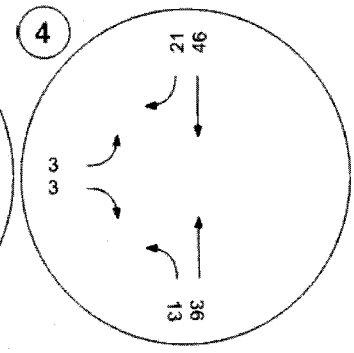
Traffic Volume - Future Total Volume

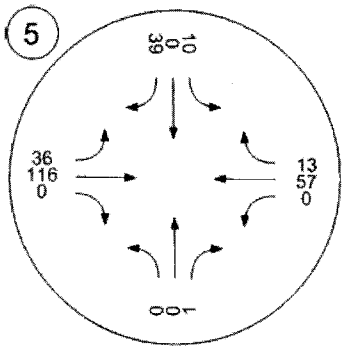




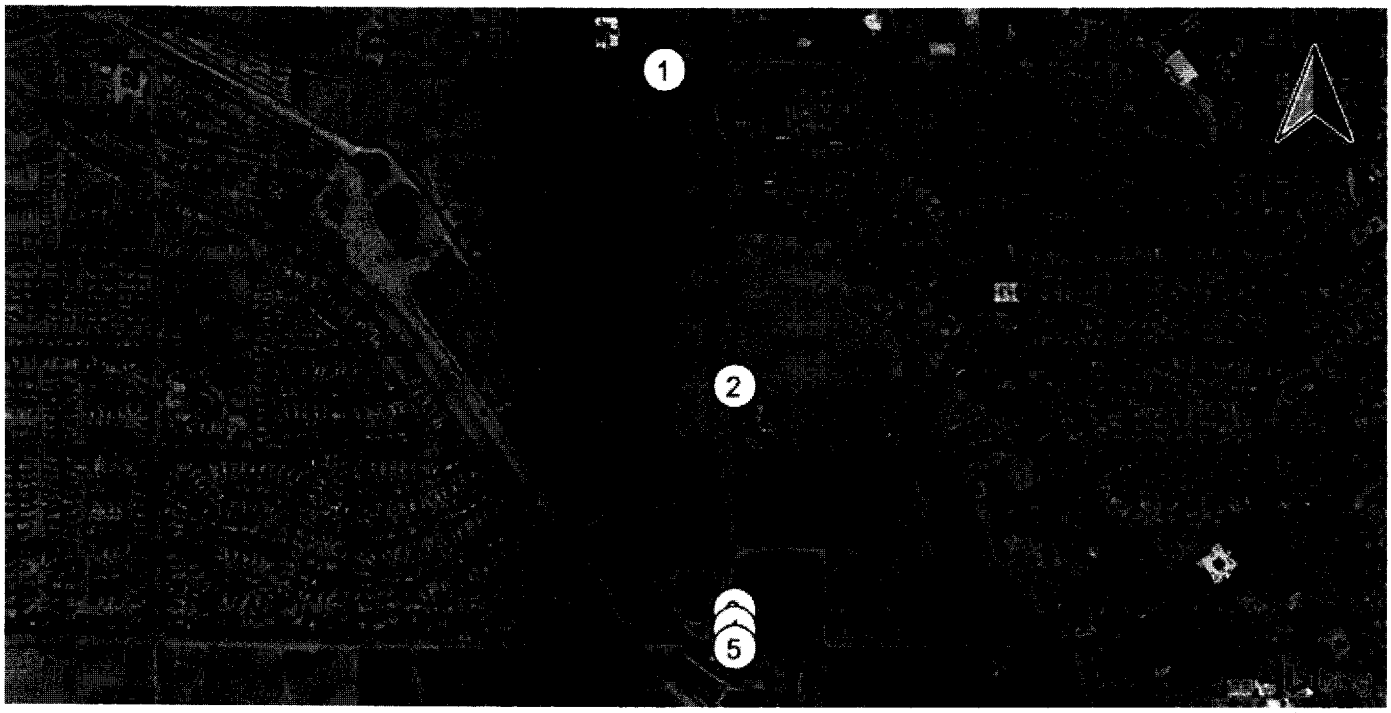


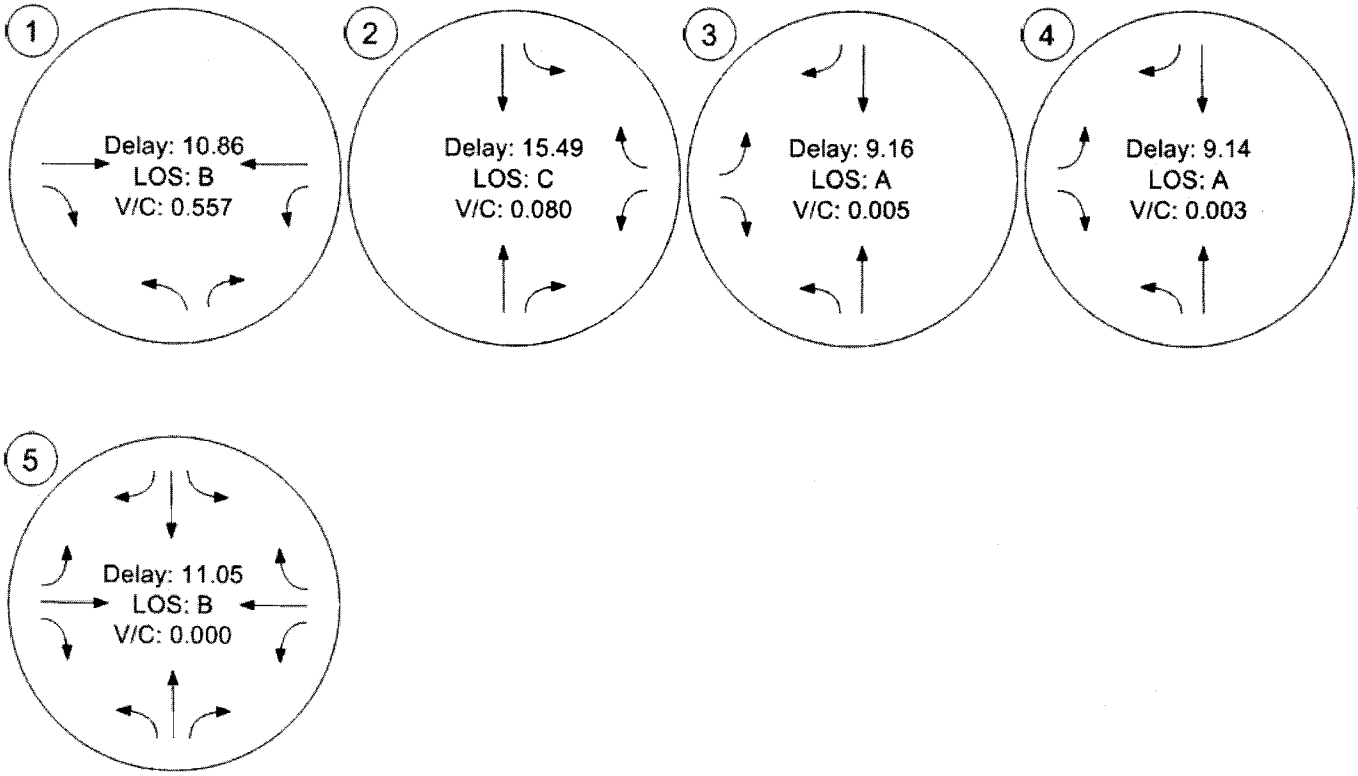




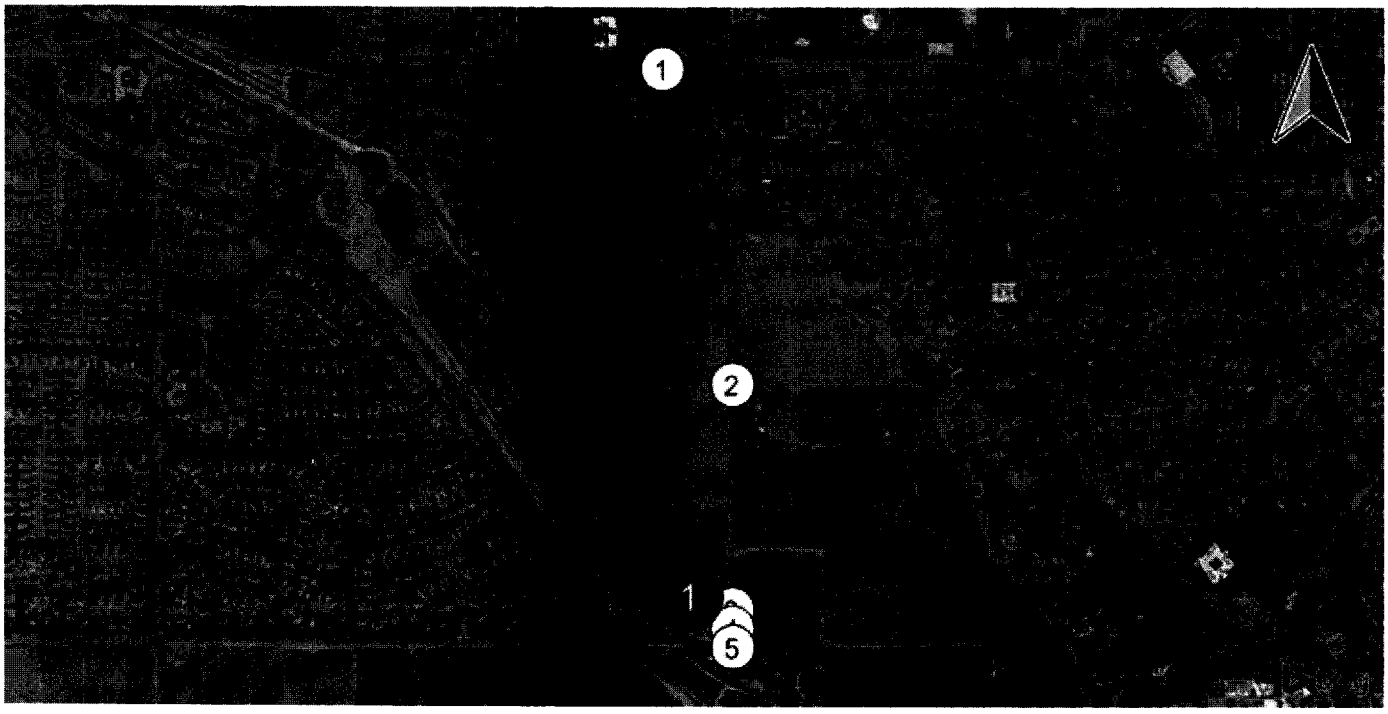


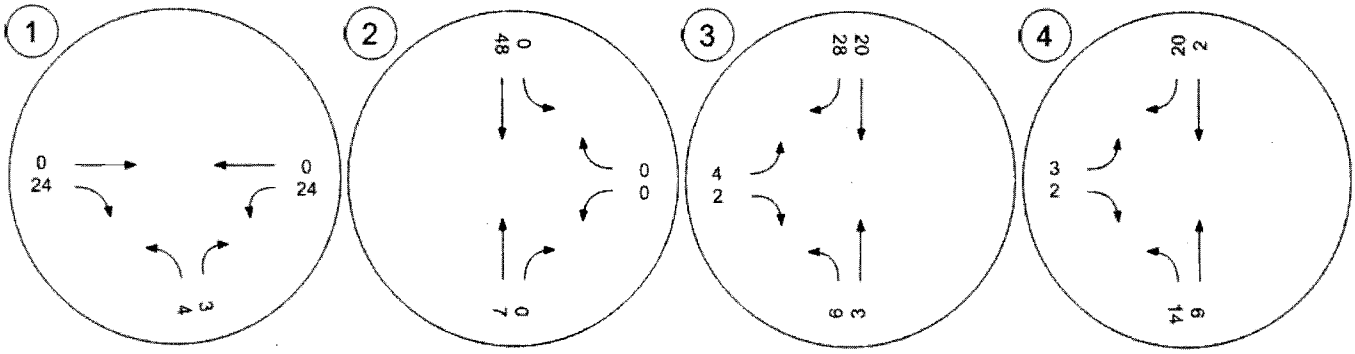
Traffic Conditions

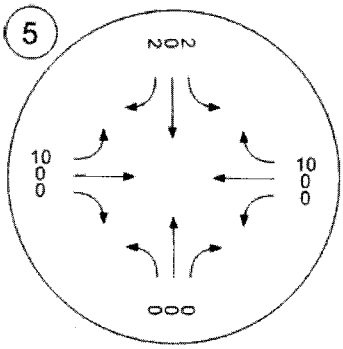




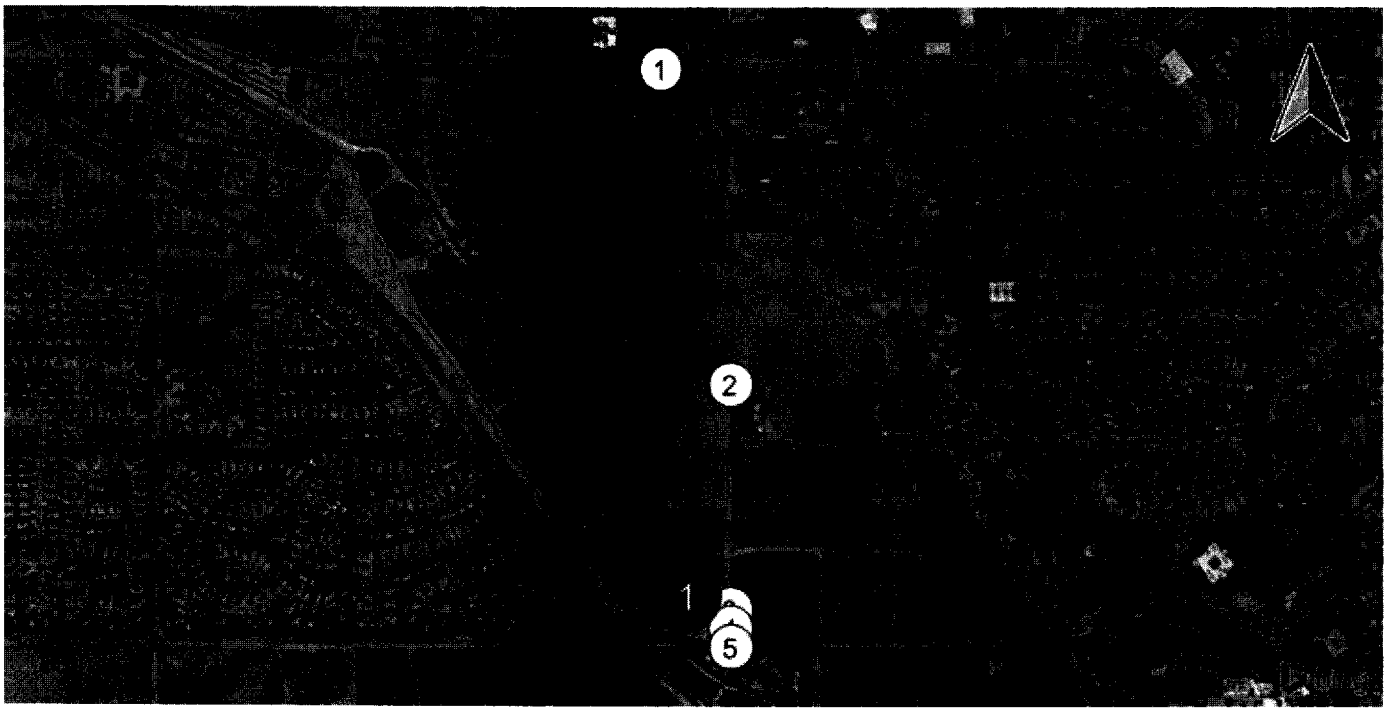
Fair Share - Fair Share Volumes - Zone 1: Project

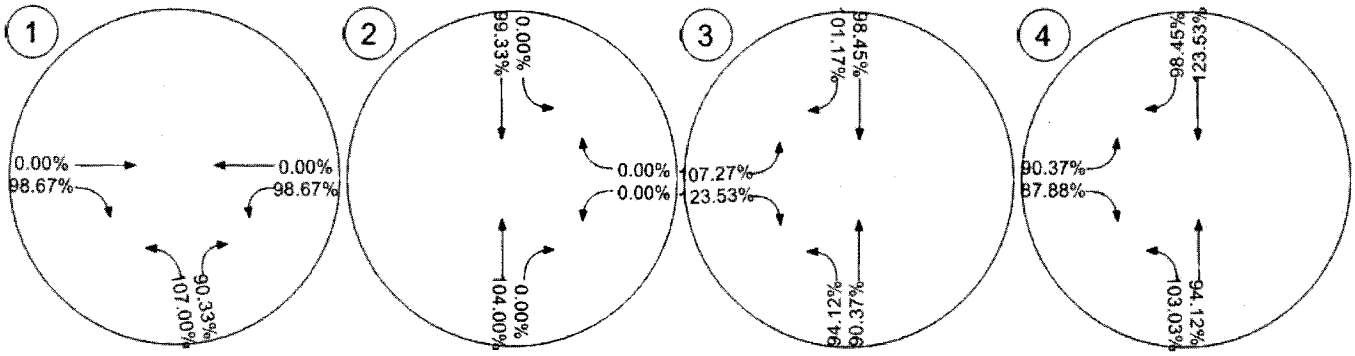


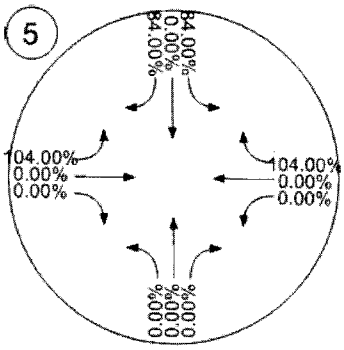




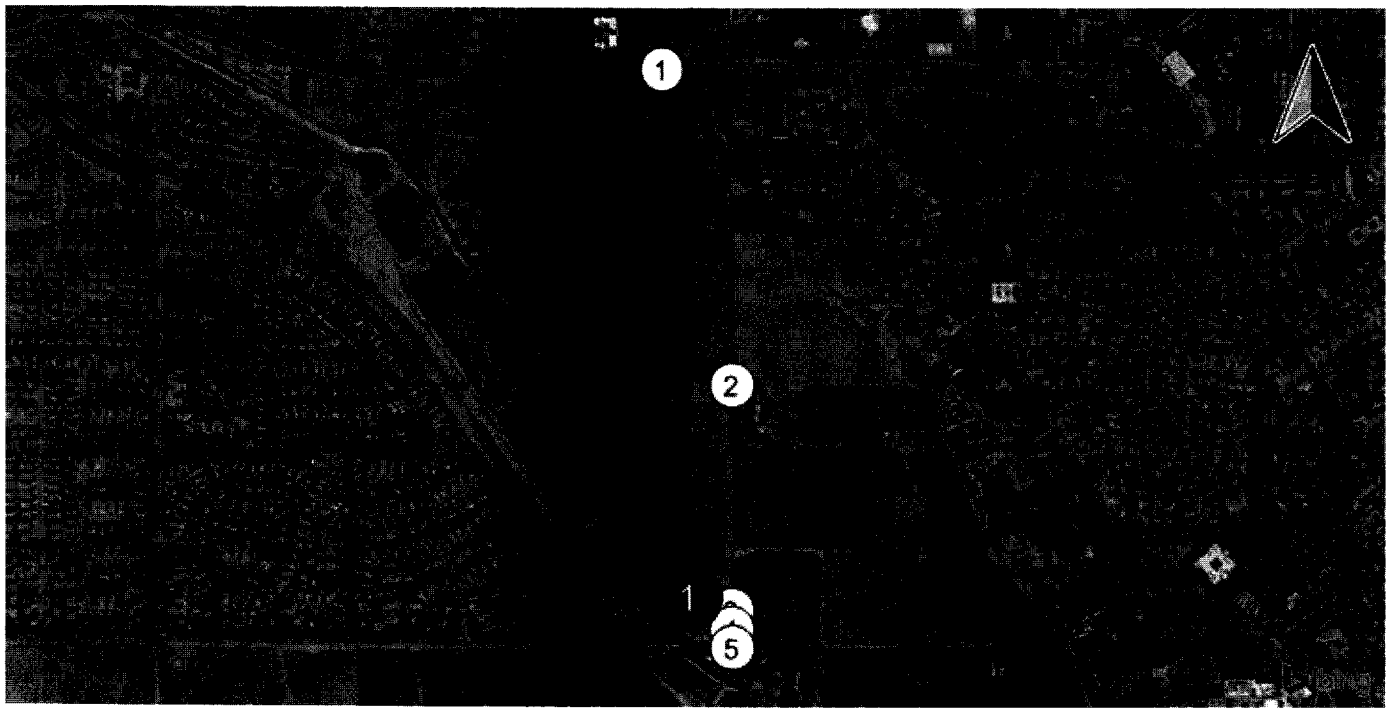
Fair Share - Fair Share % of Net New Site - Zone 1: Project

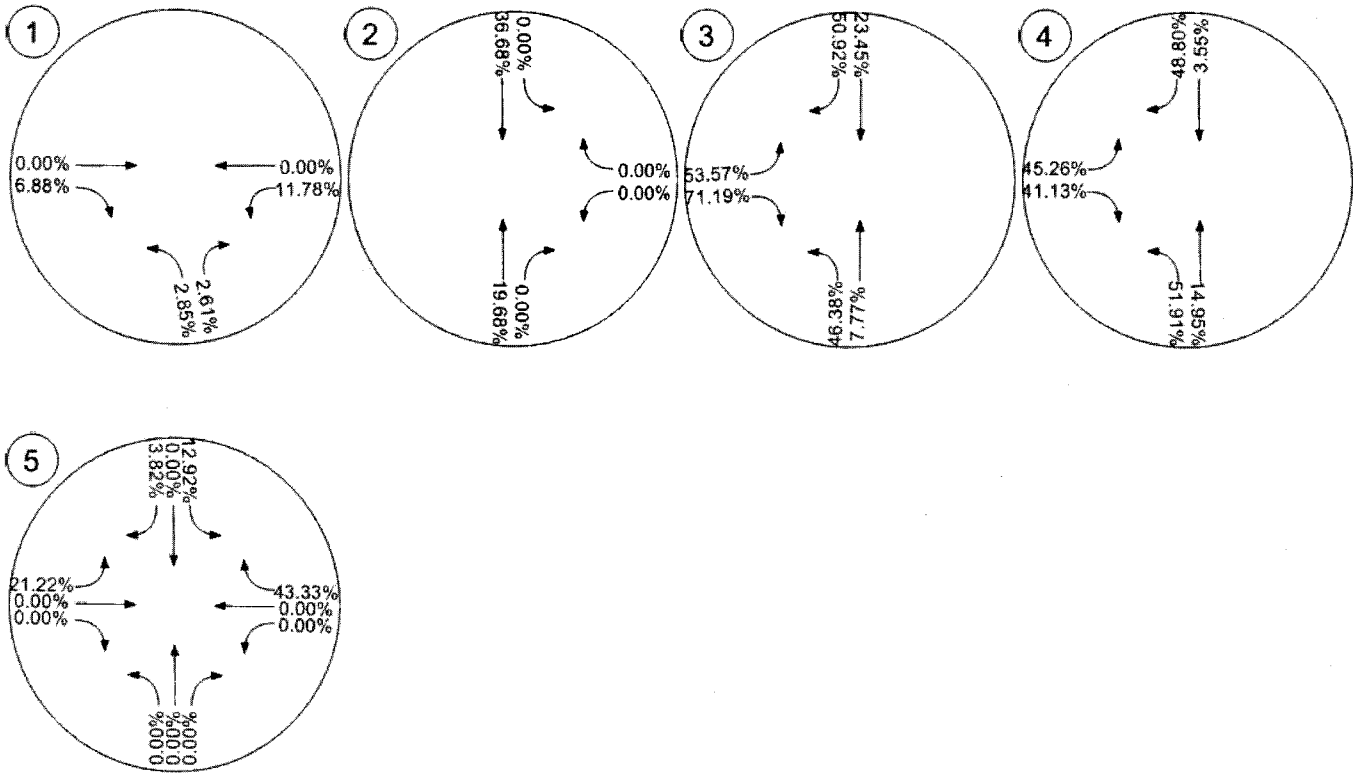






Fair Share - Fair Share % of Total Analysis - Zone 1: Project





Year 2040 Without Project

Islamic Community Center of Redlands

Vistro File: J:\...\LR Friday Mid-Day.vistro

Scenario 1: Future Year (2040) Without Project - Friday Mid-Day Peak Hour

Report File: J:\...\LR Friday Mid-Day.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.657	10.7	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.074	14.3	B
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	10.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	171	120	1500	216	95	1019
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	120	1500	216	95	1019
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	32	395	57	25	268
Total Analysis Volume [veh/h]	180	126	1579	227	100	1073
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	36	0	9	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	36	36	4	44
g / C, Green / Cycle	0.13	0.13	0.59	0.59	0.07	0.73
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.44	0.14	0.06	0.30
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	243	217	2148	959	131	2650
d1, Uniform Delay [s]	25.03	24.45	8.81	5.78	27.39	3.06
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.39	2.45	2.28	0.58	8.80	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

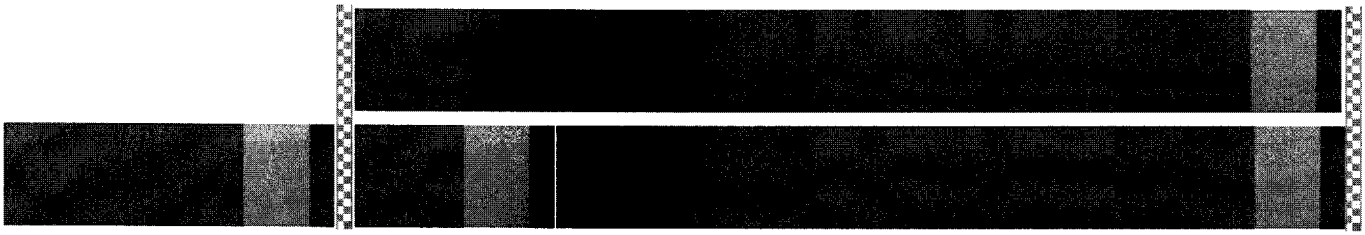
X, volume / capacity	0.74	0.58	0.74	0.24	0.76	0.40
d, Delay for Lane Group [s/veh]	29.42	26.89	11.10	6.36	36.19	3.52
Lane Group LOS	C	C	B	A	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.61	1.73	6.12	1.18	1.65	1.36
50th-Percentile Queue Length [ft]	65.26	43.24	152.98	29.50	41.36	34.12
95th-Percentile Queue Length [veh]	4.70	3.11	10.18	2.12	2.98	2.46
95th-Percentile Queue Length [ft]	117.47	77.83	254.41	53.10	74.45	61.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.42	26.89	11.10	6.36	36.19	3.52
Movement LOS	C	C	B	A	D	A
d_A, Approach Delay [s/veh]	28.38		10.50		6.30	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	10.67					
Intersection LOS	B					
Intersection V/C	0.657					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	29	1	279	45	0	261
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	1	279	45	0	261
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	73	12	0	69
Total Analysis Volume [veh/h]	31	1	294	47	0	275
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.25	10.63	0.00	0.00	7.87	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.24	0.24	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.06	6.06	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.14		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	8	0	25	17	132	0	0	79	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	8	0	25	17	132	0	0	79	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	2	0	7	4	35	0	0	21	2
Total Analysis Volume [veh/h]	0	0	0	8	0	26	18	139	0	0	83	6
Pedestrian Volume [ped/h]	0			0			0			0		

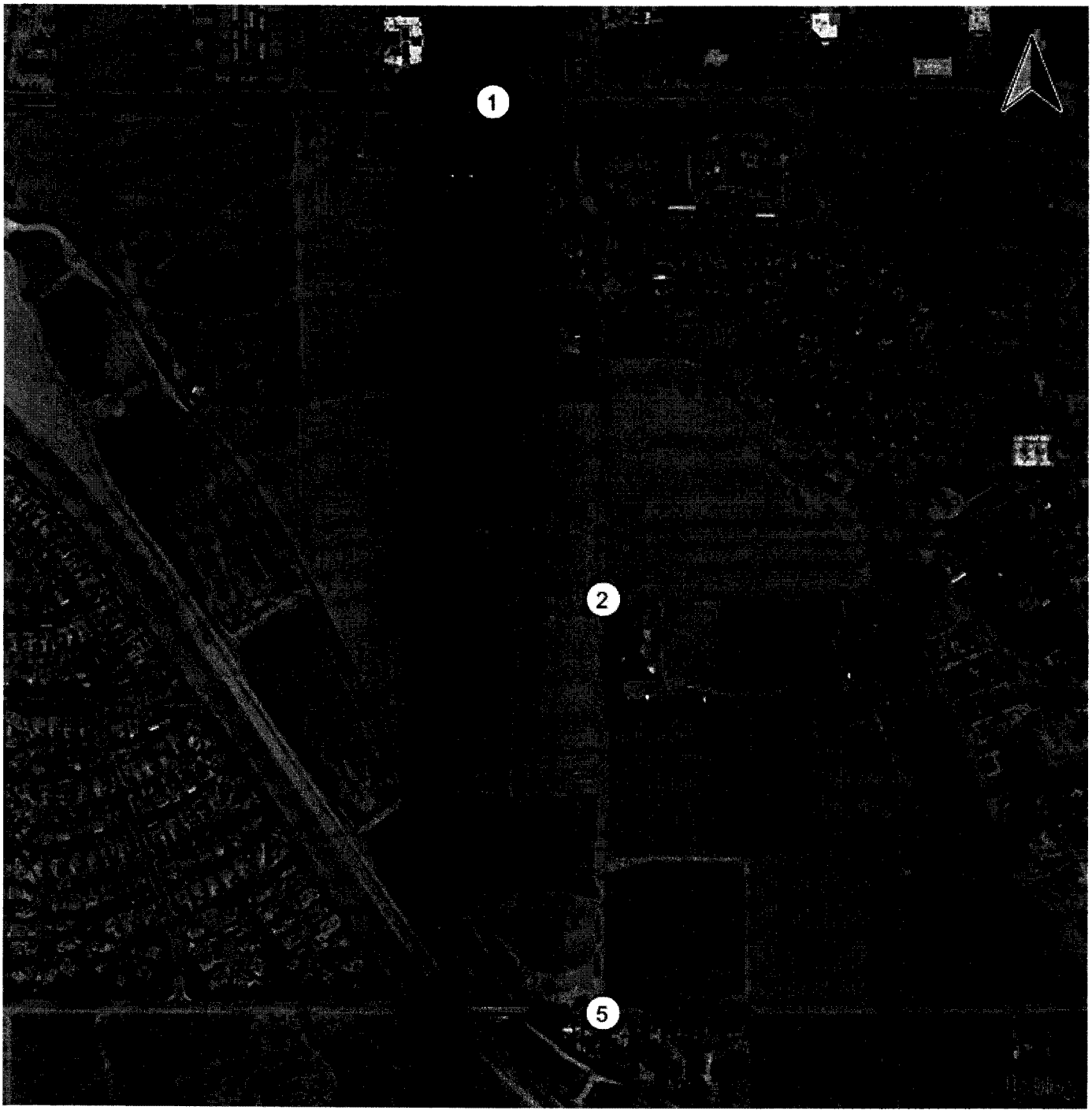
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

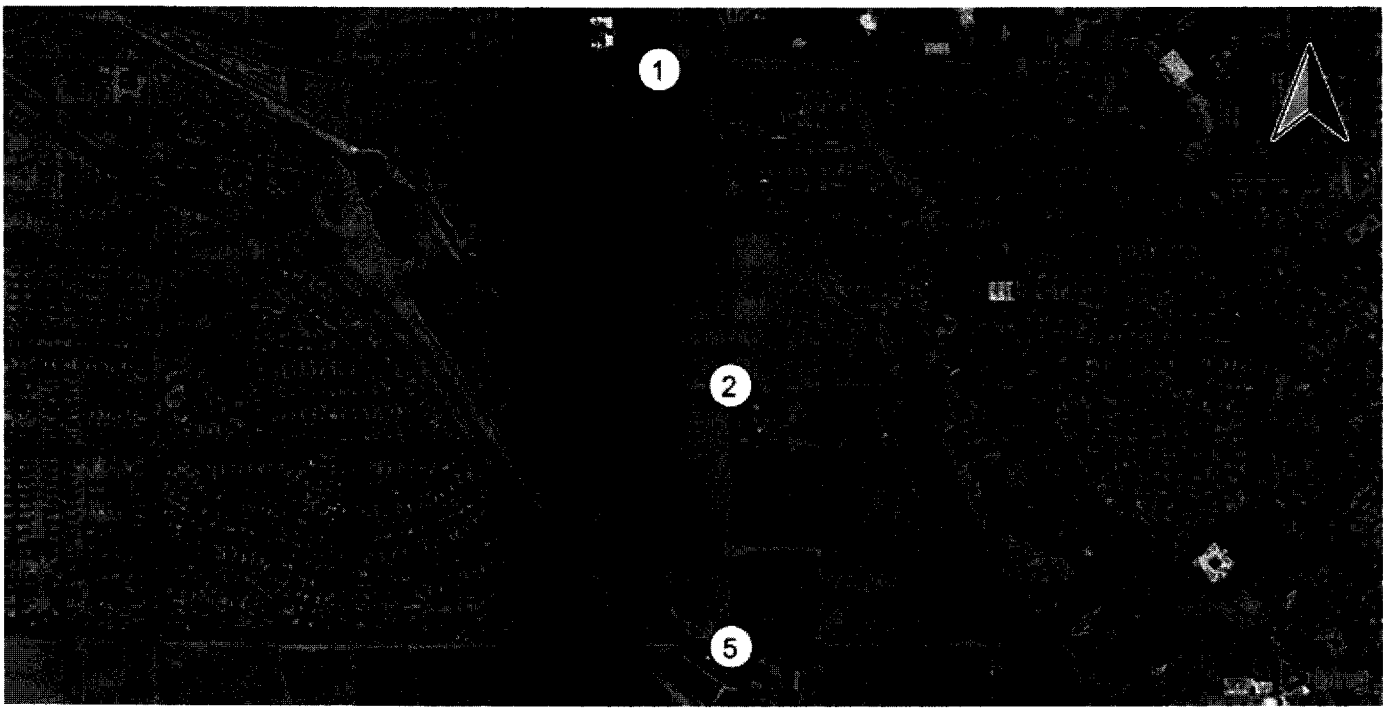
Movement, Approach, & Intersection Results

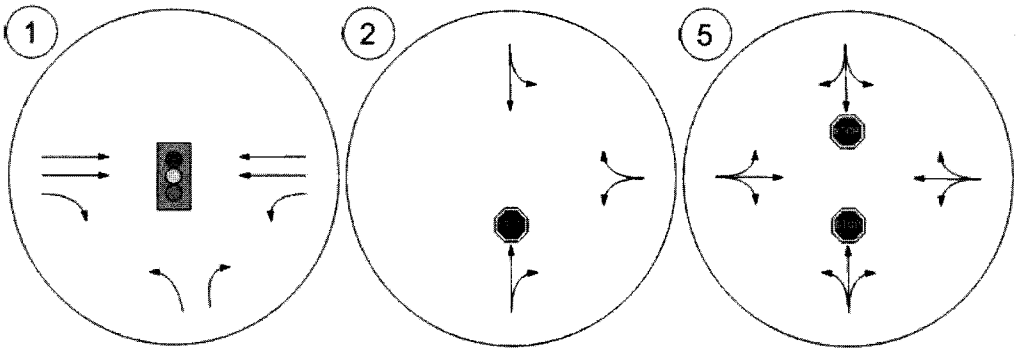
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.47	10.66	8.94	10.38	10.80	8.84	7.40	0.00	0.00	7.47	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.12	0.12	0.12	0.35	0.35	0.35	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	2.97	2.97	2.97	8.63	8.63	8.63	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.02			9.20			0.85			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.59											
Intersection LOS	B											

Study Intersections

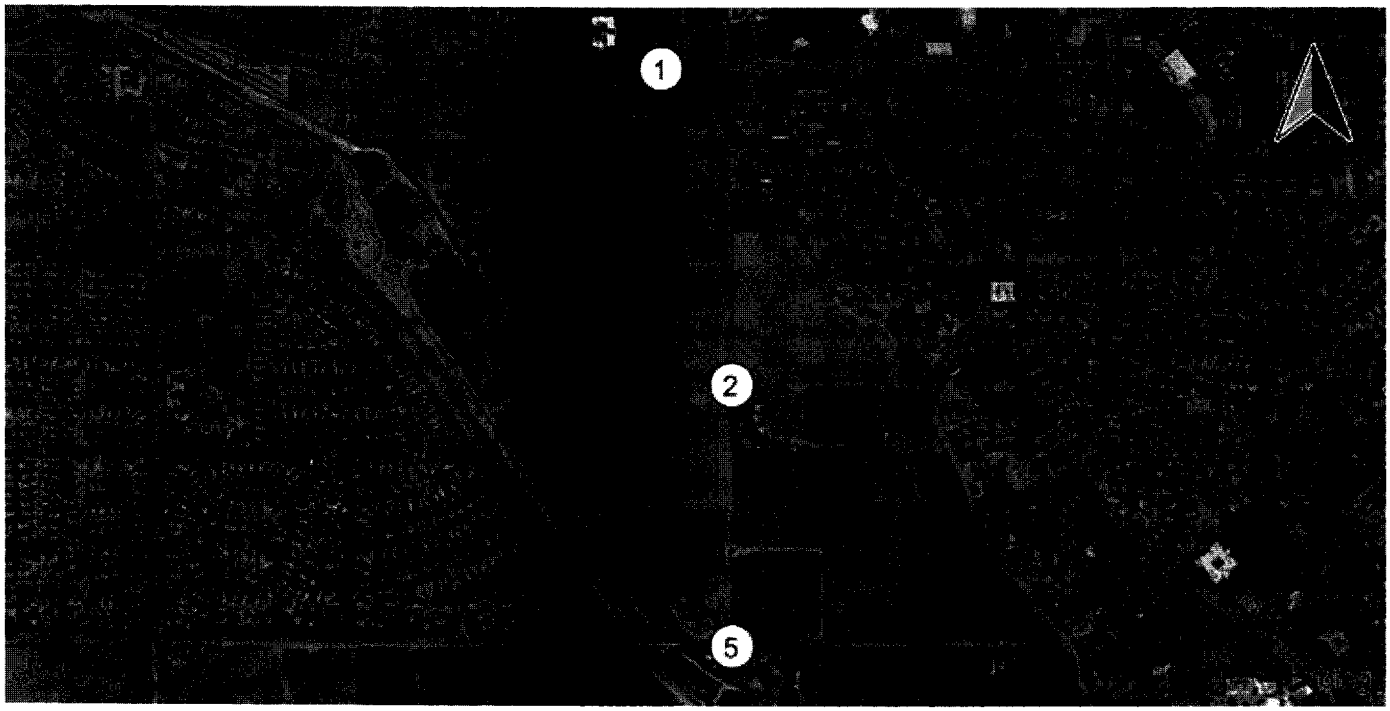


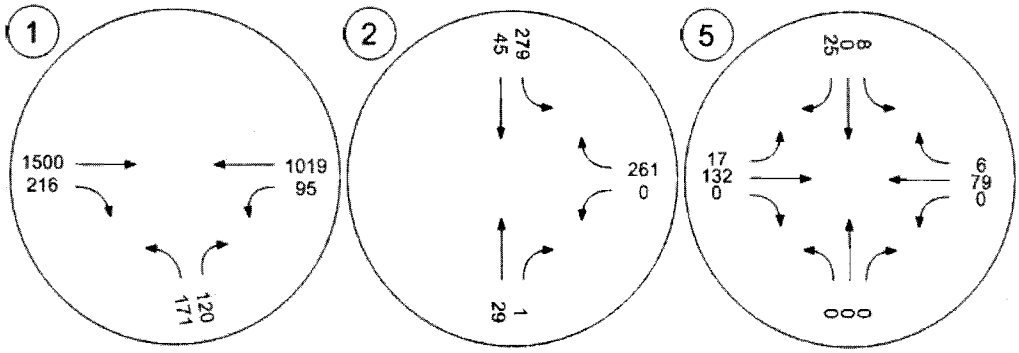
Lane Configuration and Traffic Control



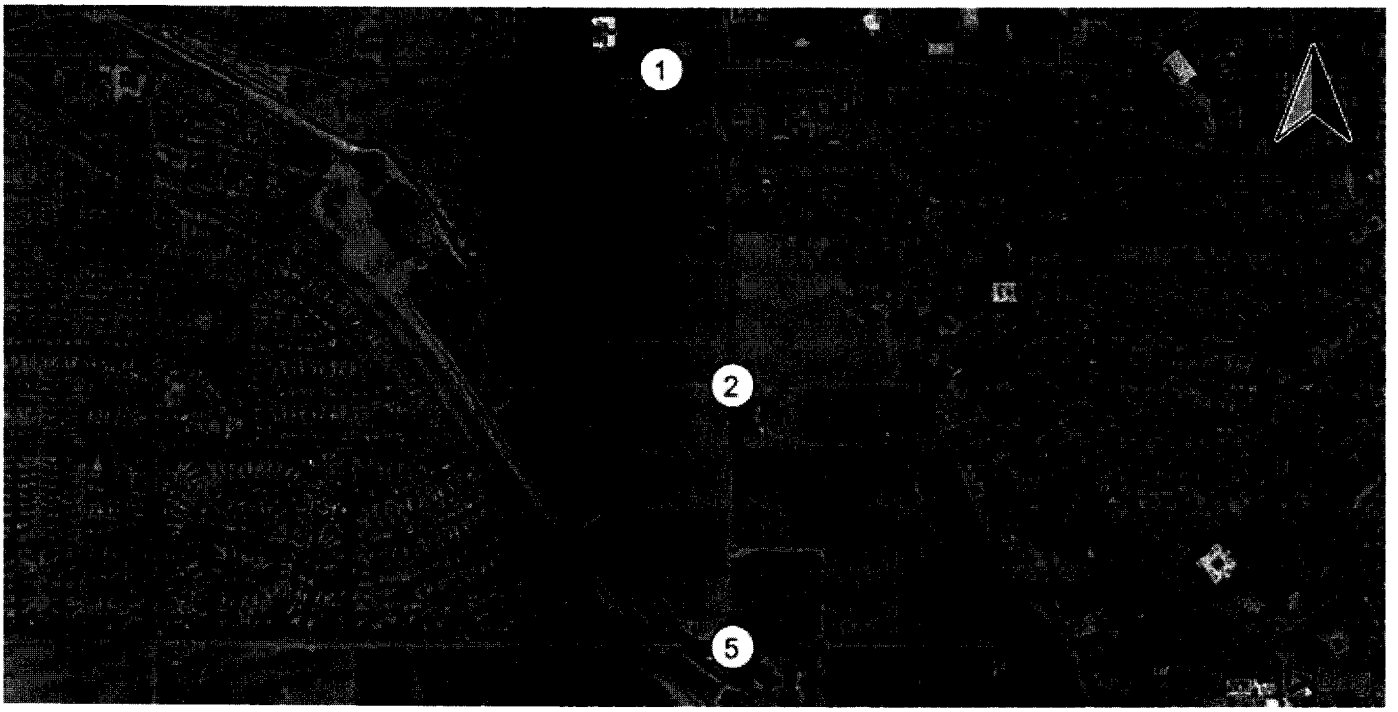


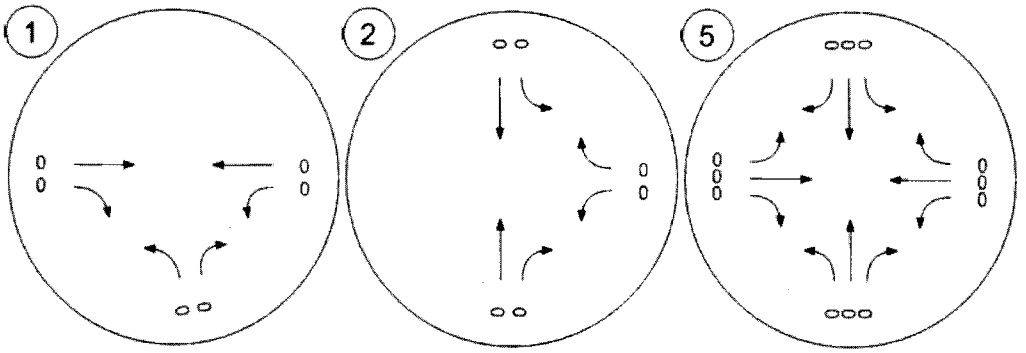
Traffic Volume - Base Volume



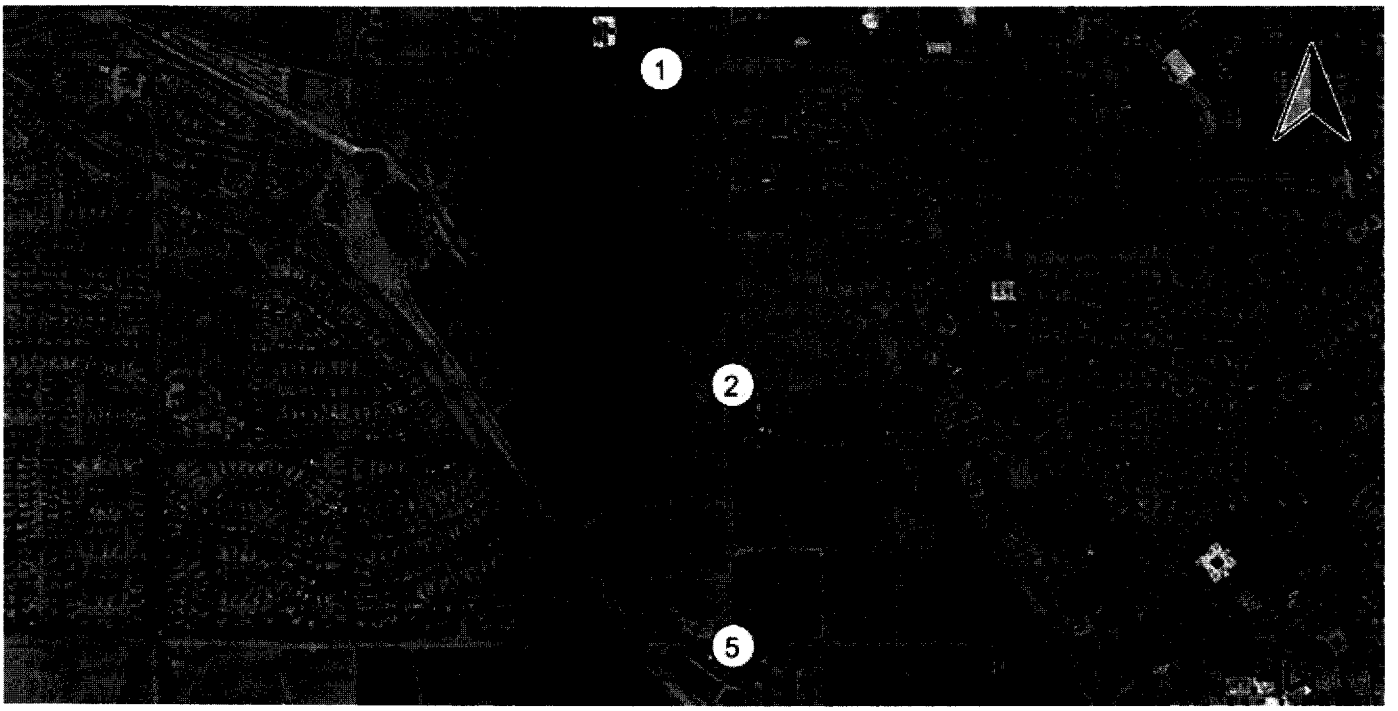


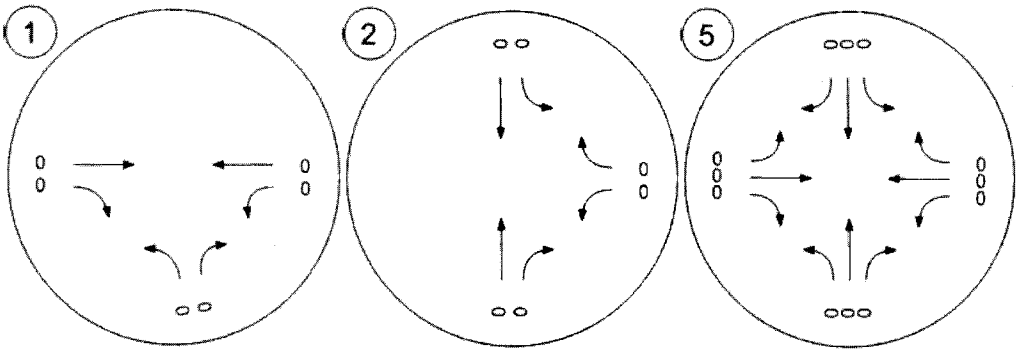
Traffic Volume - In-Process Volume



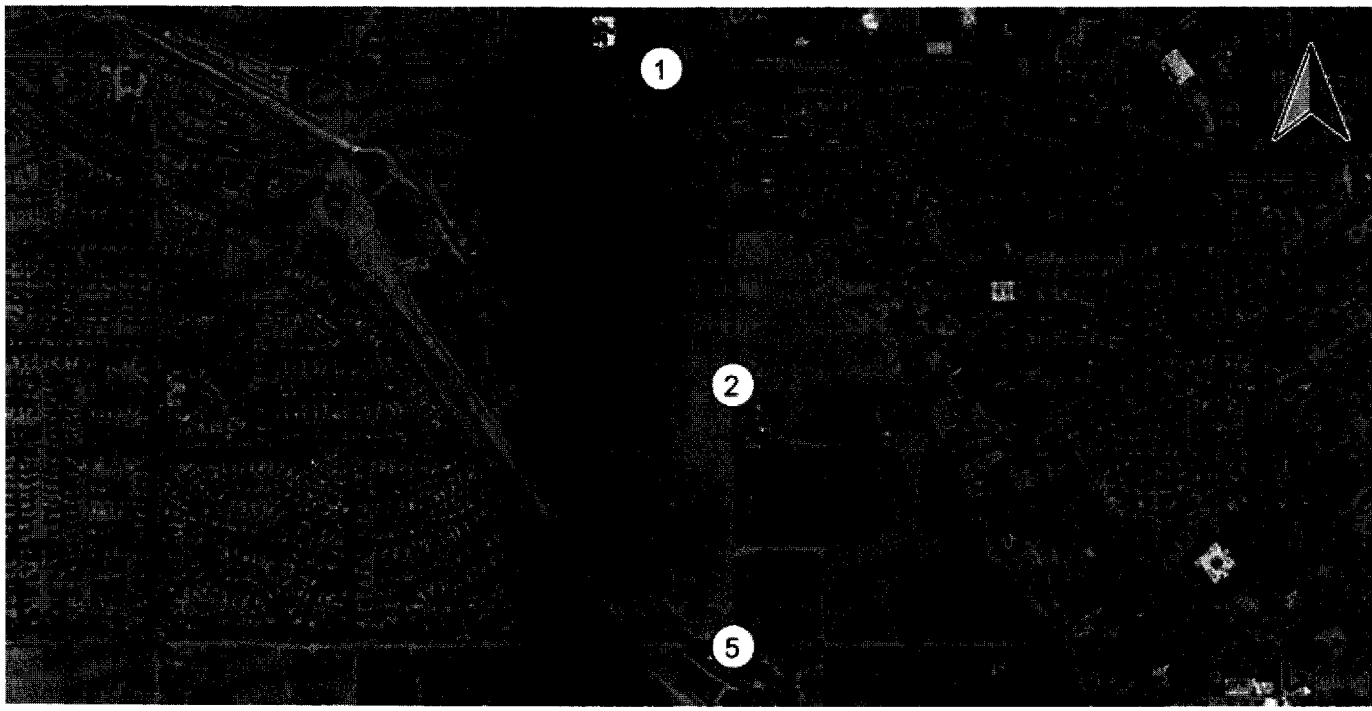


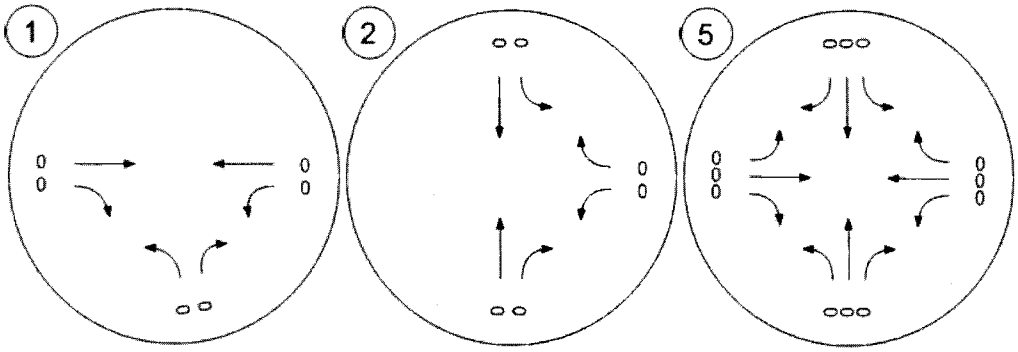
Traffic Volume - Net New Site Trips



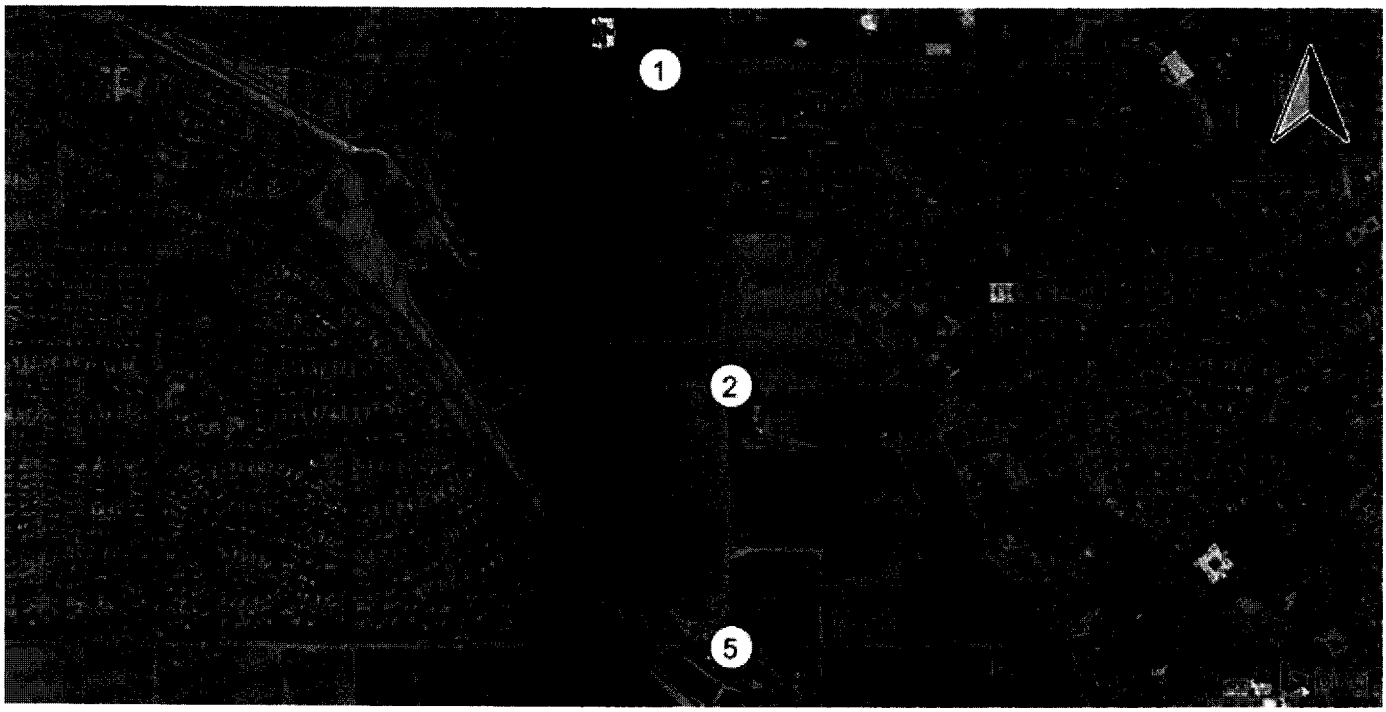


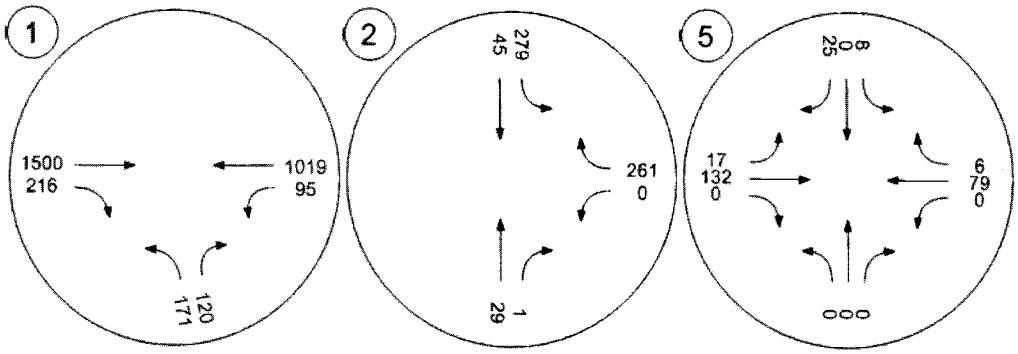
Traffic Volume - Other Volume



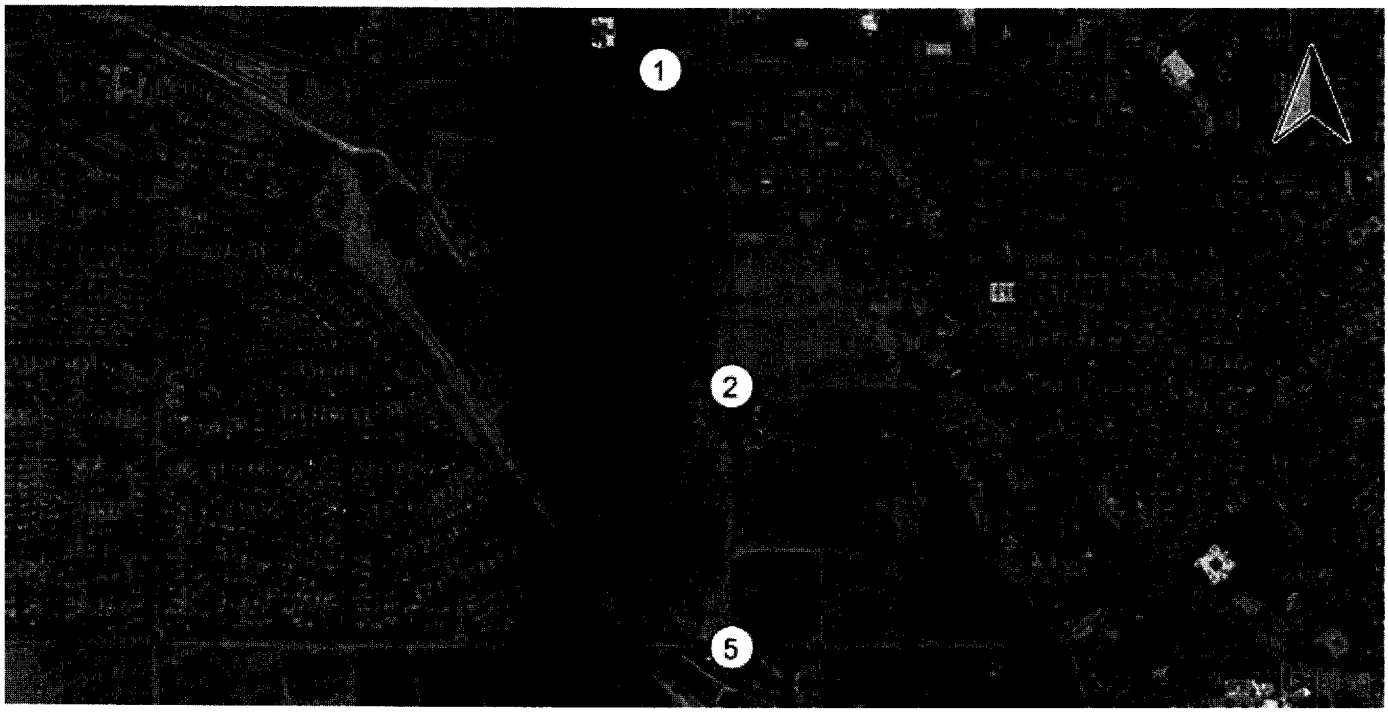


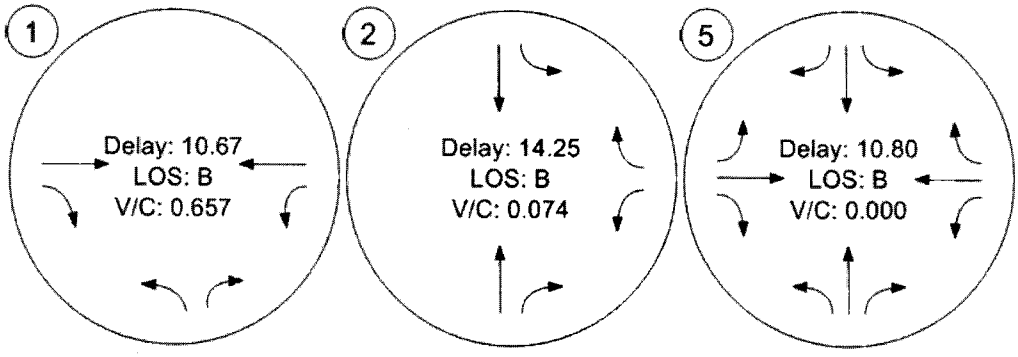
Traffic Volume - Future Total Volume





Traffic Conditions





Islamic Community Center of Redlands

Vistro File: J:\...\LR Friday Evening.vistro

Scenario 1: Future Year (2040) Without Project - Friday Evening Peak Hour

Report File: J:\...\LR Friday Evening.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.716	13.4	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.078	17.2	C
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	11.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.716

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	172	108	1582	348	162	968
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	172	108	1582	348	162	968
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	28	416	92	43	255
Total Analysis Volume [veh/h]	181	114	1665	366	171	1019
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	16	0	41	0	13	54
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	41	41	8	53
g / C, Green / Cycle	0.13	0.13	0.58	0.58	0.12	0.76
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.46	0.23	0.09	0.28
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	235	210	2102	938	214	2736
d1, Uniform Delay [s]	29.51	28.57	11.40	7.96	30.11	2.90
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.34	2.19	3.16	1.22	6.77	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.54	0.79	0.39	0.80	0.37
d, Delay for Lane Group [s/veh]	34.84	30.76	14.56	9.18	36.88	3.29
Lane Group LOS	C	C	B	A	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	3.18	1.85	9.03	2.81	3.10	1.46
50th-Percentile Queue Length [ft]	79.42	46.32	225.86	70.19	77.47	36.53
95th-Percentile Queue Length [veh]	5.72	3.33	13.96	5.05	5.58	2.63
95th-Percentile Queue Length [ft]	142.96	83.37	349.10	126.34	139.44	65.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.84	30.76	14.56	9.18	36.88	3.29
Movement LOS	C	C	B	A	D	A
d_A, Approach Delay [s/veh]	33.27		13.59		8.12	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	13.39					
Intersection LOS	B					
Intersection V/C	0.716					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.078

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	24	0	490	33	0	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	0	490	33	0	250
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	129	9	0	66
Total Analysis Volume [veh/h]	25	0	516	35	0	263
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.19	12.49	0.00	0.00	8.45	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.25	0.25	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.31	6.31	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.19		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	10	0	41	29	150	0	0	82	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	10	0	41	29	150	0	0	82	4
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	11	8	39	0	0	22	1
Total Analysis Volume [veh/h]	0	0	1	11	0	43	31	158	0	0	86	4
Pedestrian Volume [ped/h]	0			0			0			0		

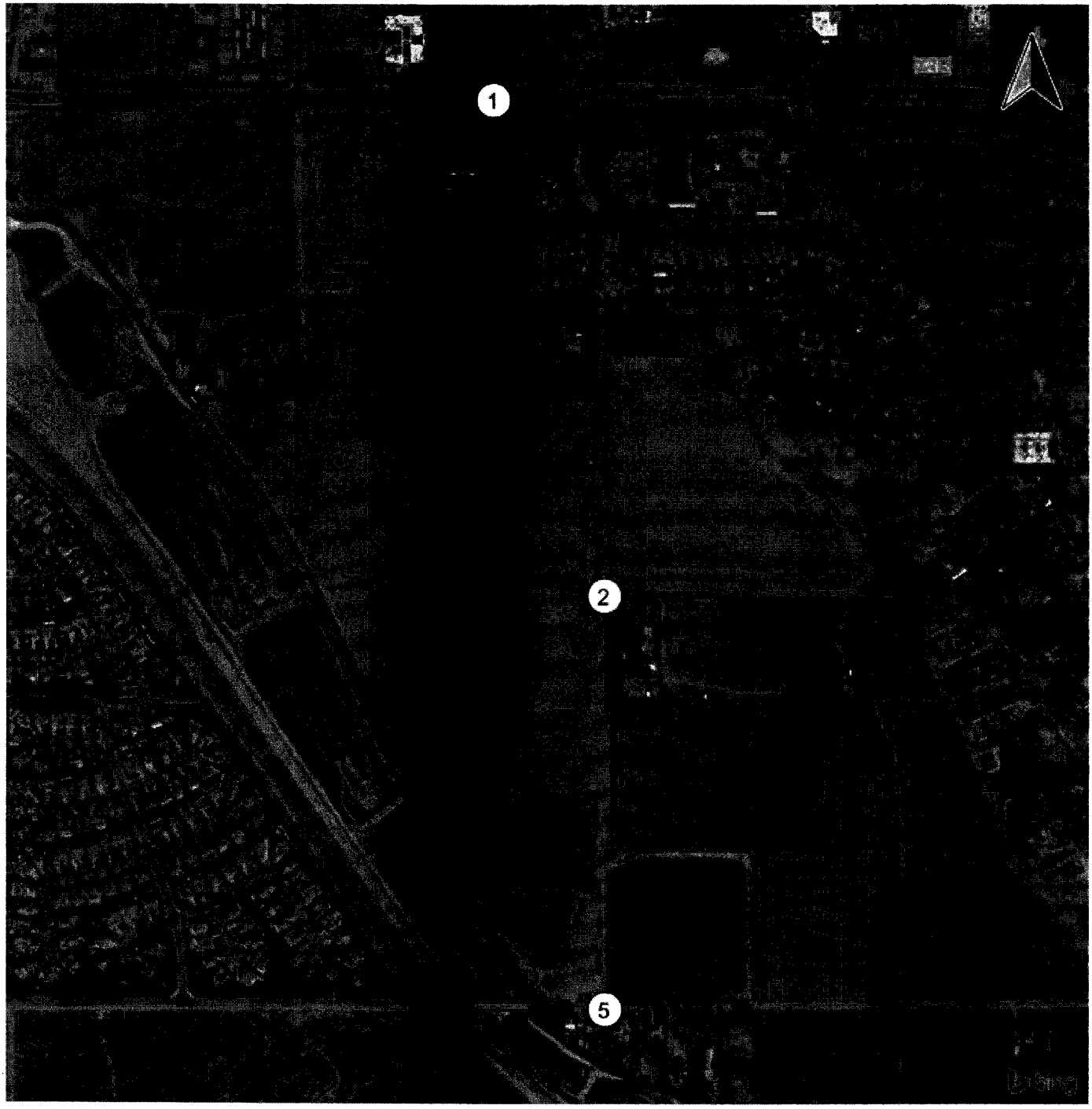
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

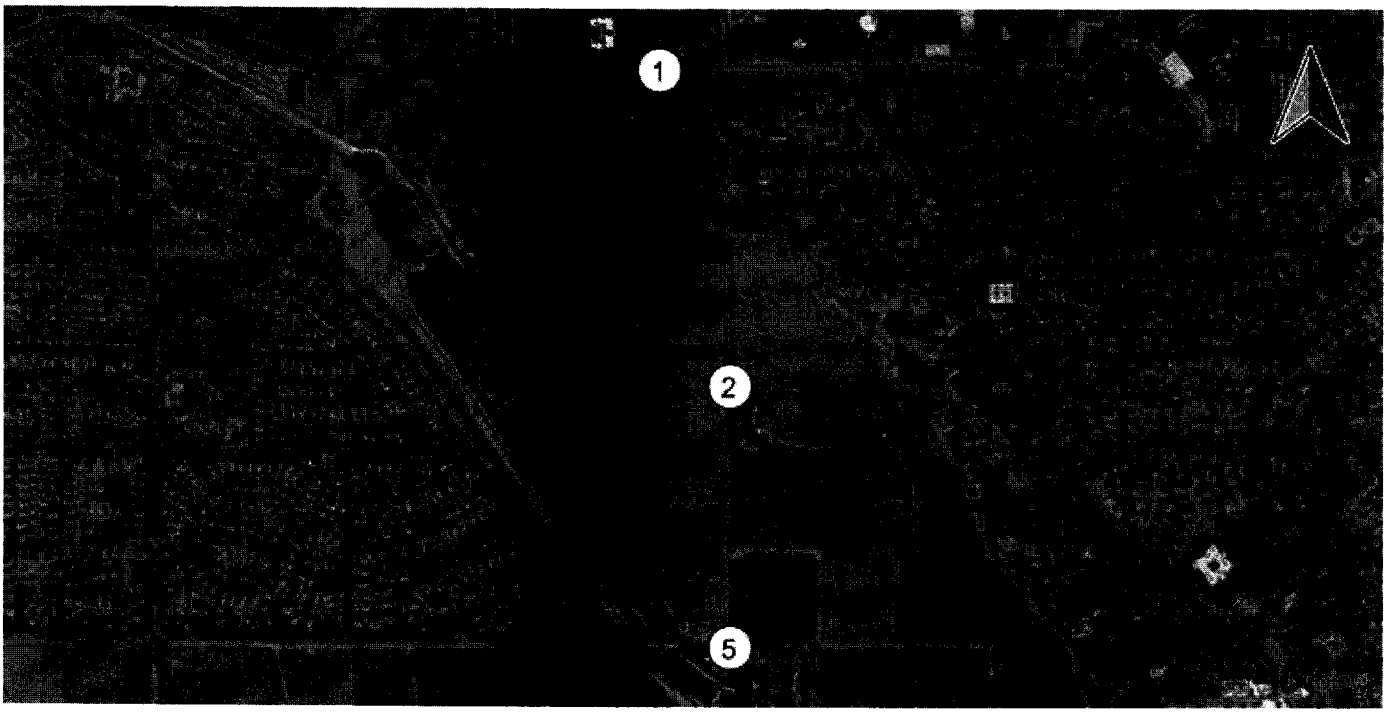
Movement, Approach, & Intersection Results

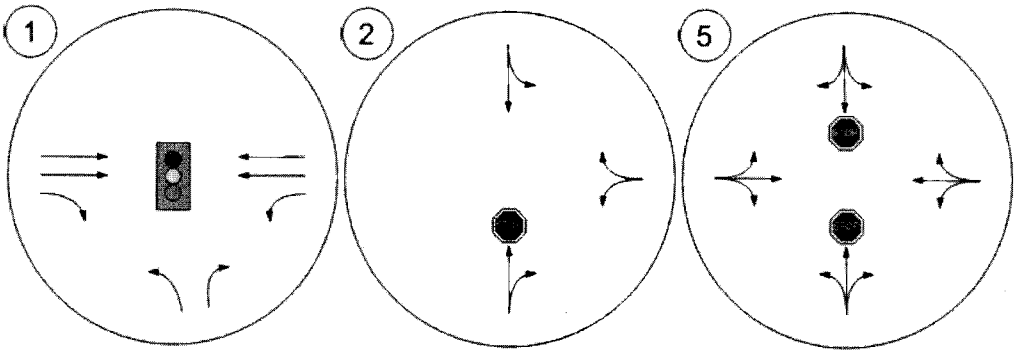
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.11	11.06	9.04	10.93	11.31	8.96	7.42	0.00	0.00	7.51	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.20	0.20	0.20	0.43	0.43	0.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	4.89	4.89	4.89	10.64	10.64	10.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.04			9.36			1.22			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.23											
Intersection LOS	B											

Study Intersections

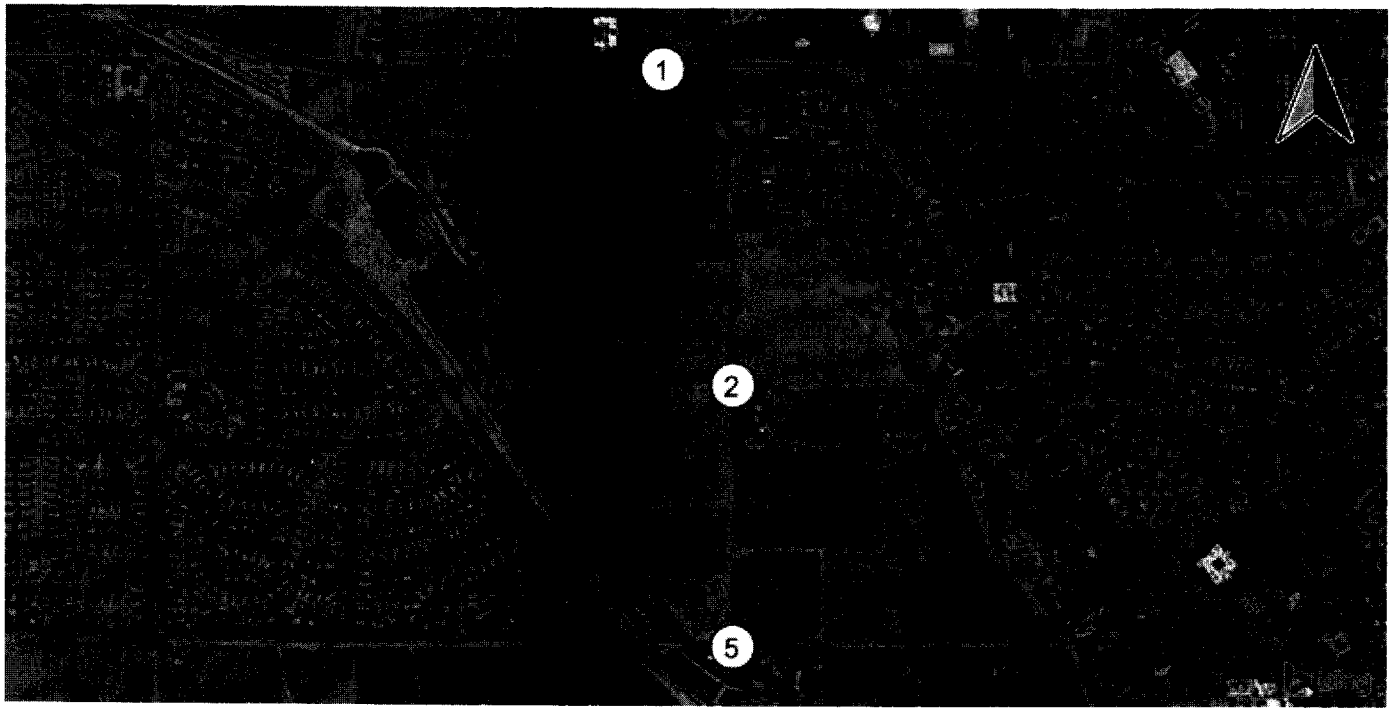


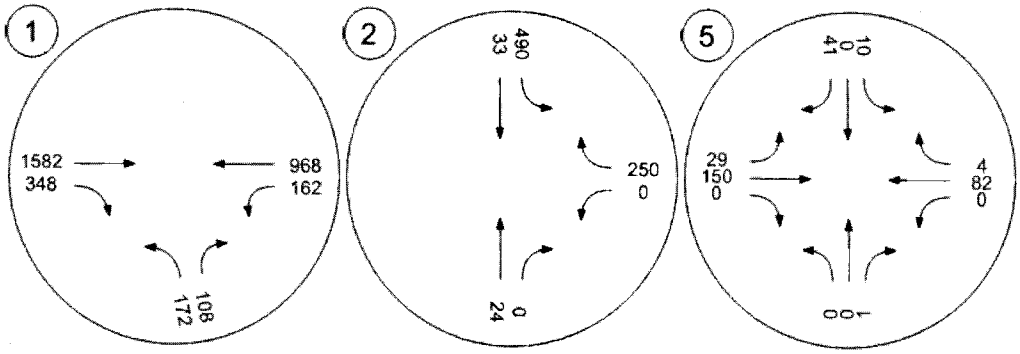
Lane Configuration and Traffic Control



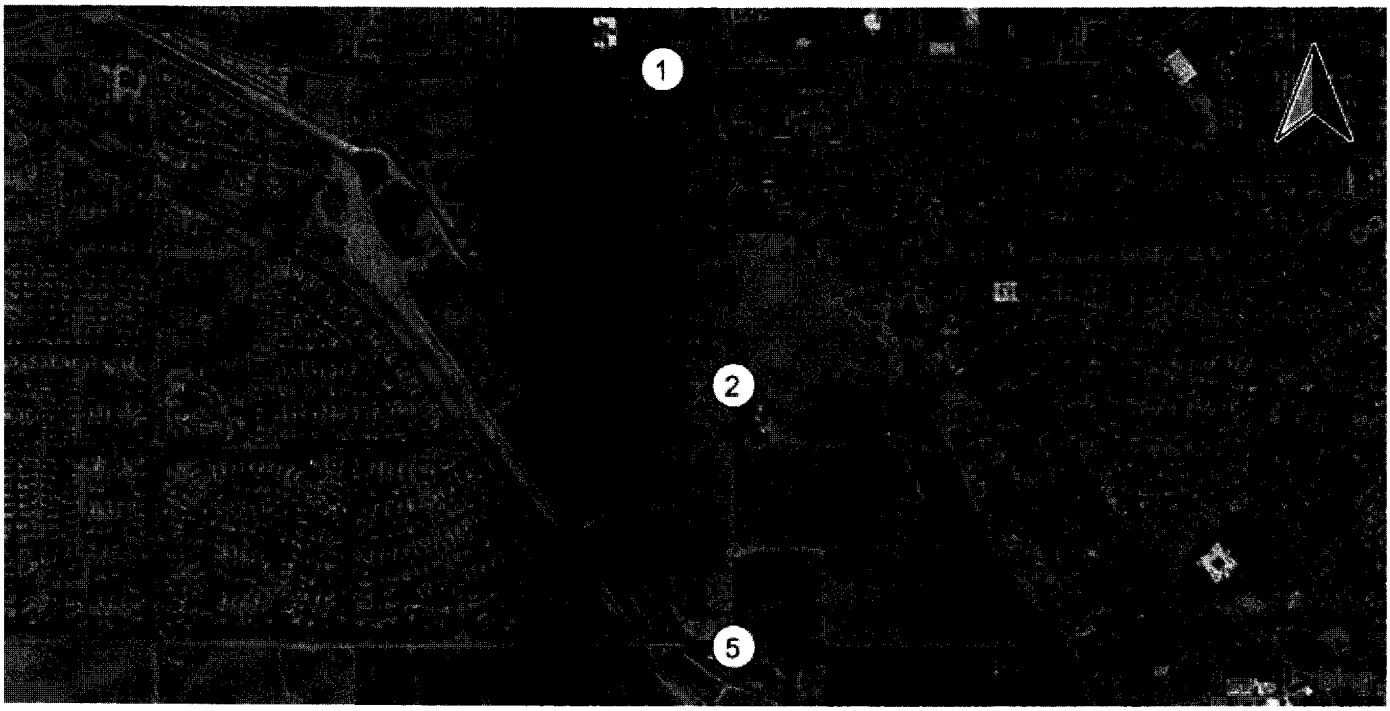


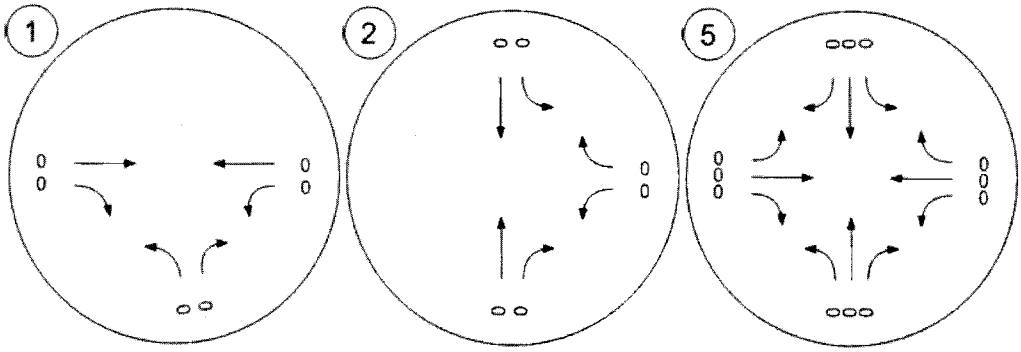
Traffic Volume - Base Volume



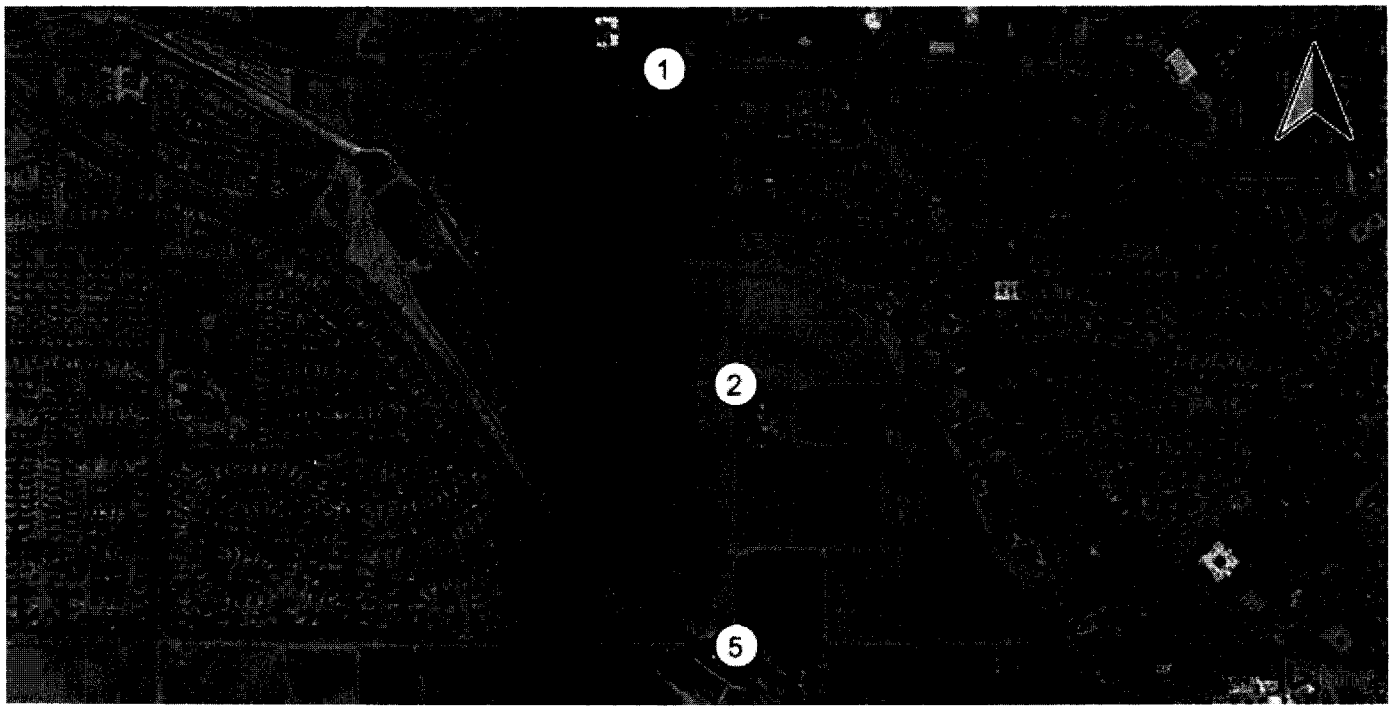


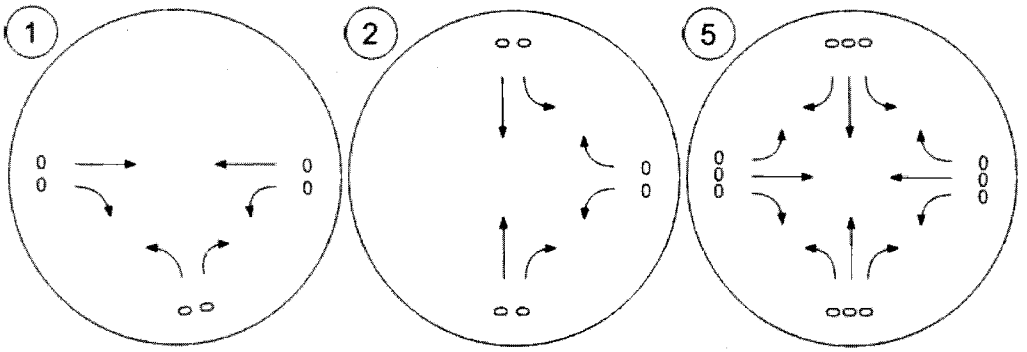
Traffic Volume - In-Process Volume



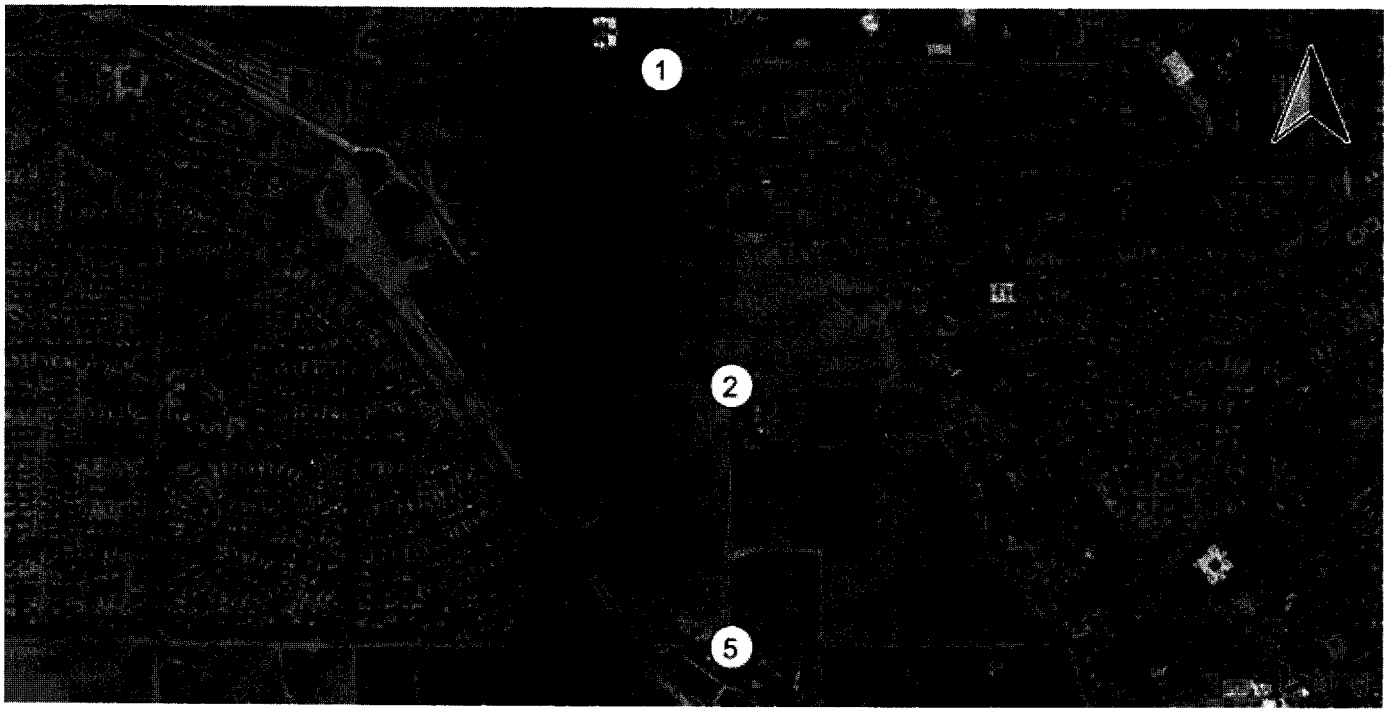


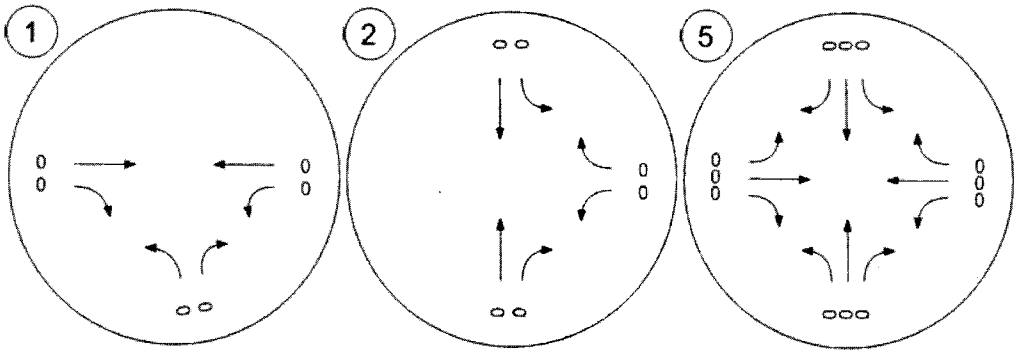
Traffic Volume - Net New Site Trips



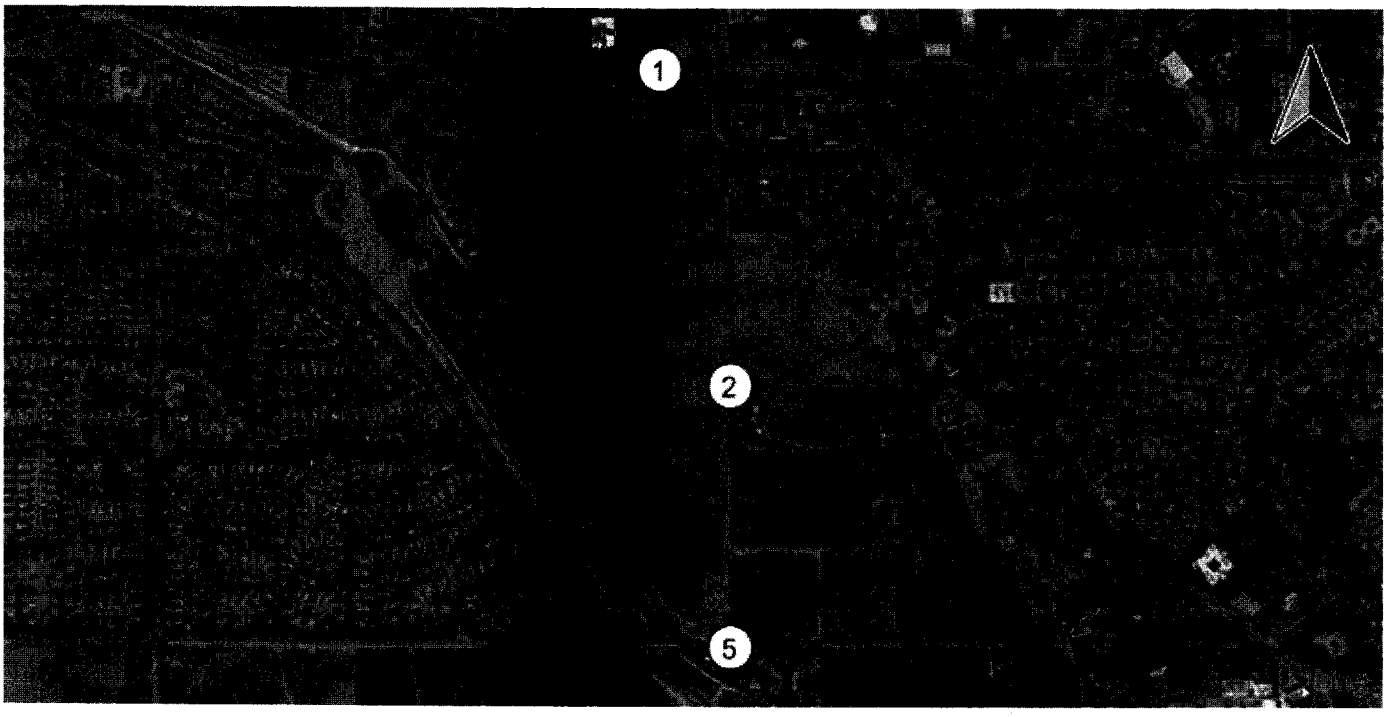


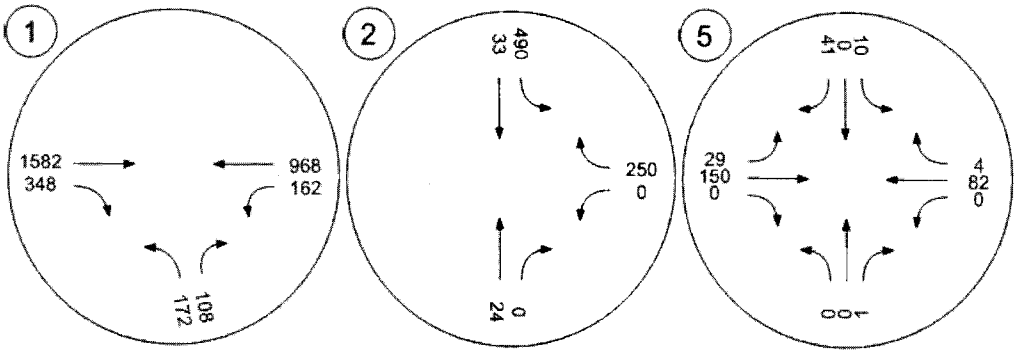
Traffic Volume - Other Volume



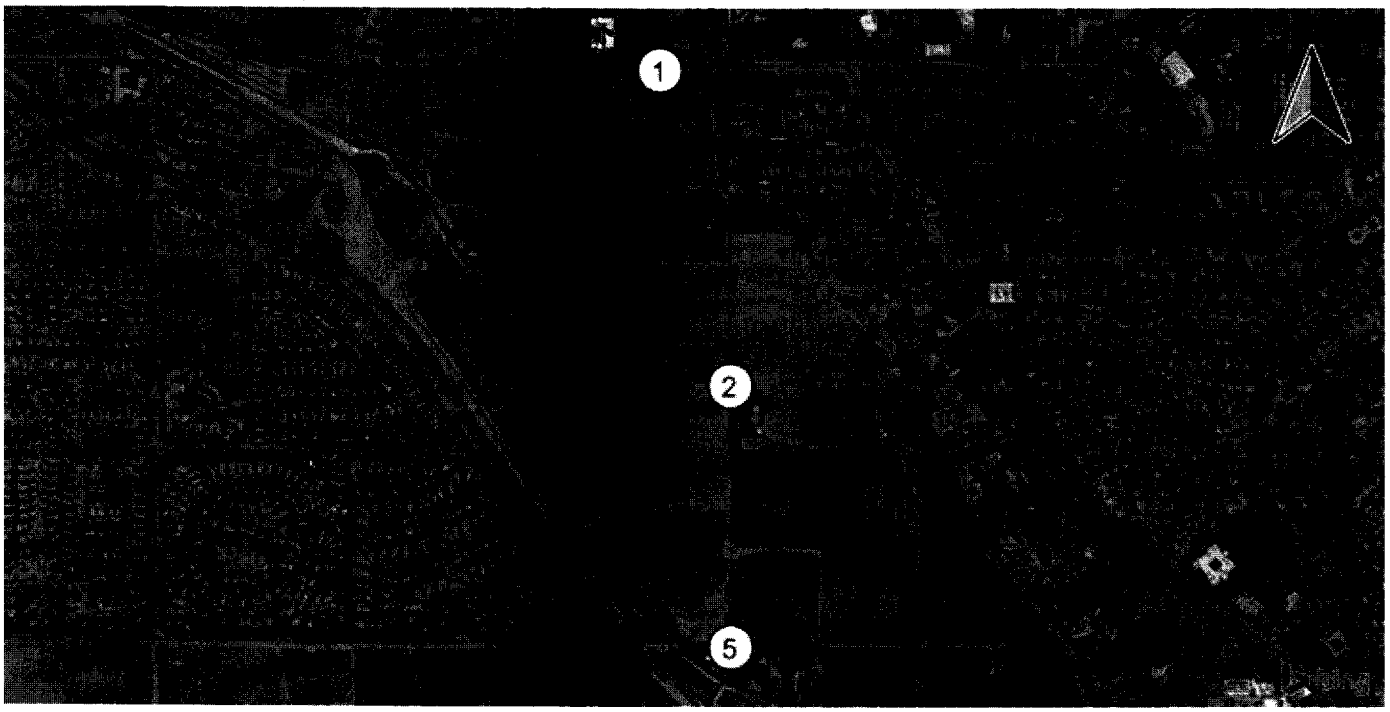


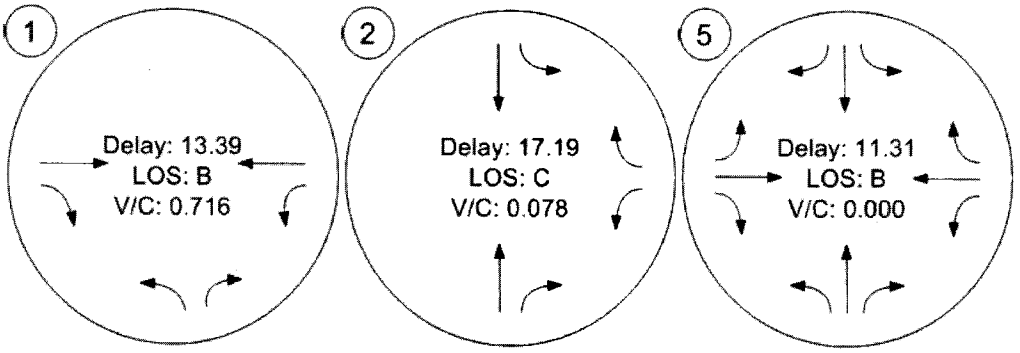
Traffic Volume - Future Total Volume





Traffic Conditions





Year 2040 With Project

Islamic Community Center of Redlands

Vistro File: J:\...\LR Friday Mid-Day.vistro

Scenario 2: Future Year (2040) With Project - Friday Mid-Day Peak Hour

Report File: J:\...\LRP Friday Mid-Day.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.676	11.5	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.094	14.8	B
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.005	9.1	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.003	9.1	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	11.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	171	120	1500	216	95	1019
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	27	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	123	1500	243	122	1019
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	32	395	64	32	268
Total Analysis Volume [veh/h]	184	129	1579	256	128	1073
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	15	0	35	0	10	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	34	34	6	44
g / C, Green / Cycle	0.14	0.14	0.57	0.57	0.09	0.73
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.44	0.16	0.07	0.30
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	247	221	2070	924	166	2642
d1, Uniform Delay [s]	24.96	24.37	9.77	6.54	26.70	3.11
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.41	2.45	2.73	0.74	7.36	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.58	0.76	0.28	0.77	0.41
d, Delay for Lane Group [s/veh]	29.38	26.82	12.50	7.29	34.06	3.57
Lane Group LOS	C	C	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	2.67	1.77	6.73	1.48	2.03	1.39
50th-Percentile Queue Length [ft]	66.67	44.20	168.22	37.05	50.76	34.84
95th-Percentile Queue Length [veh]	4.80	3.18	10.98	2.67	3.65	2.51
95th-Percentile Queue Length [ft]	120.00	79.56	274.57	66.69	91.36	62.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.38	26.82	12.50	7.29	34.06	3.57
Movement LOS	C	C	B	A	C	A
d_A, Approach Delay [s/veh]	28.32		11.77		6.82	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	11.54					
Intersection LOS	B					
Intersection V/C	0.676					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	29	1	279	45	0	261
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	54	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	1	279	99	0	261
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	73	26	0	69
Total Analysis Volume [veh/h]	38	1	294	104	0	275
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.82	11.06	0.00	0.00	7.94	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.31	0.31	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	7.85	7.85	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.72		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.81					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	23	33	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	3	23	31	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	26	56	31	4	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	15	8	1	0
Total Analysis Volume [veh/h]	8	27	59	33	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.39	0.00	0.00	0.00	9.13	8.65
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	1.77	1.77	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	1.69		0.00		9.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	23	33	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	8	1	23	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	31	34	23	3	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	8	9	6	1	1
Total Analysis Volume [veh/h]	17	33	36	24	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.13	8.53
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.49	2.49	0.00	0.00	0.48	0.48
d_A, Approach Delay [s/veh]	2.50		0.00		8.83	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.53					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	0	8	0	25	17	132	0	0	79	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	12	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	10	0	27	29	132	0	0	79	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	7	8	35	0	0	21	5
Total Analysis Volume [veh/h]	0	0	0	11	0	28	31	139	0	0	83	19
Pedestrian Volume [ped/h]	0			0			0			0		

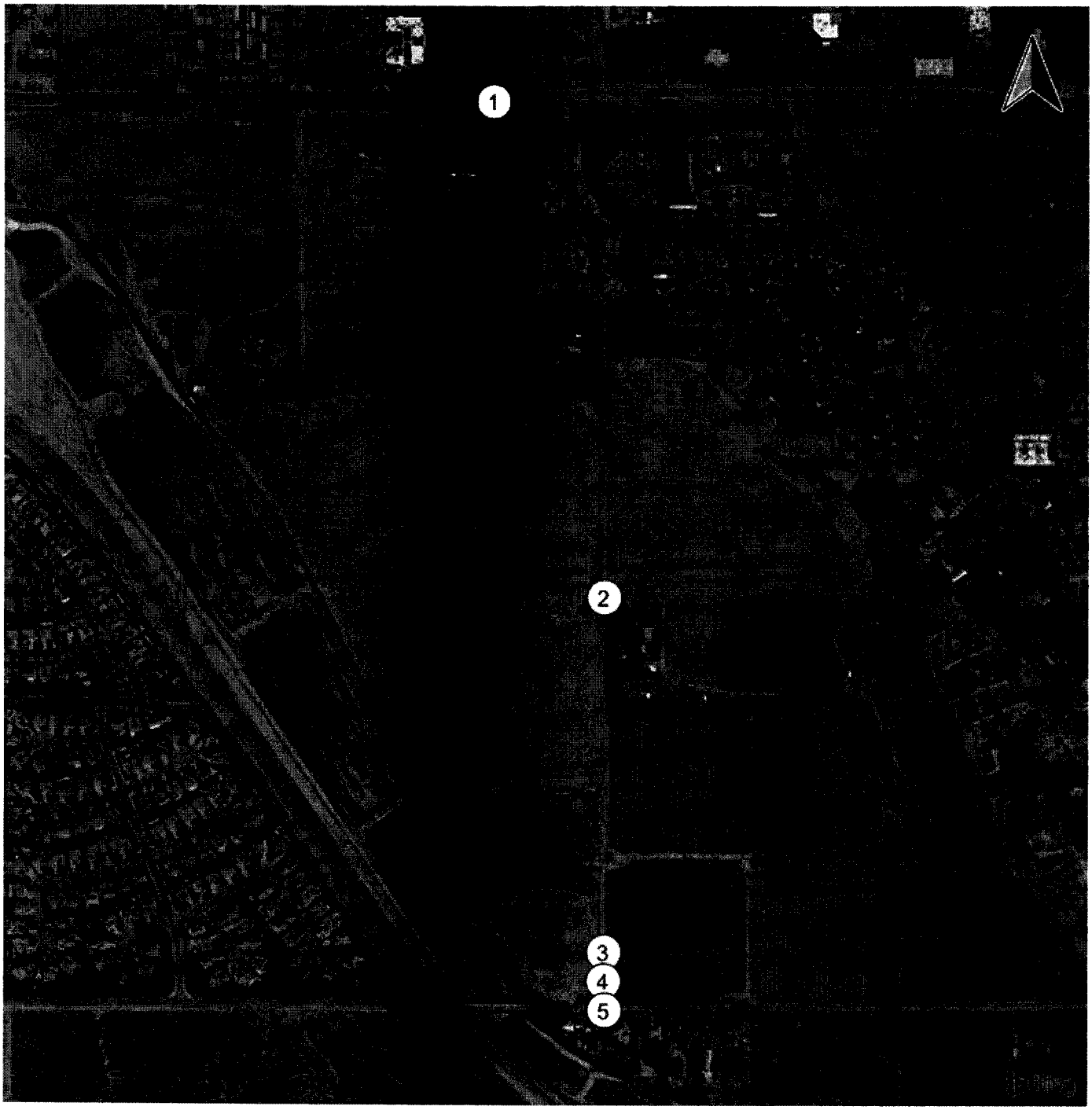
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

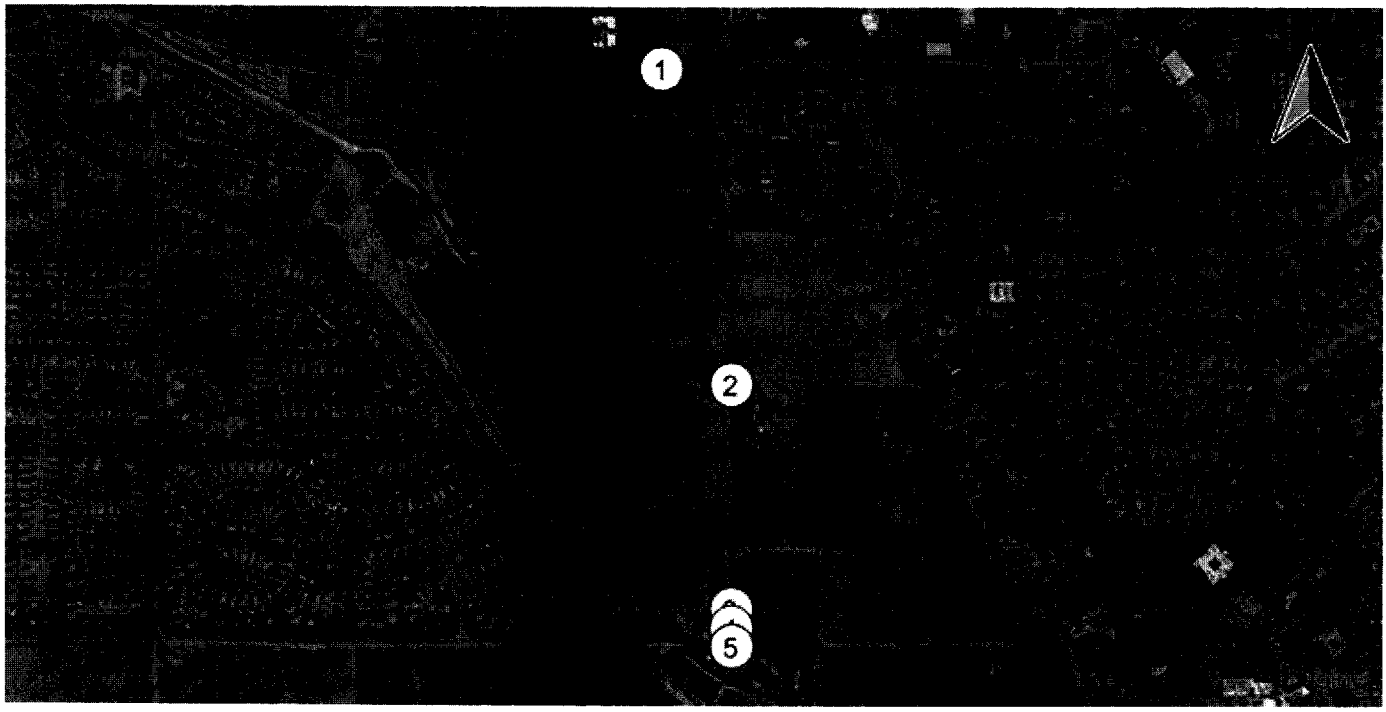
Movement, Approach, & Intersection Results

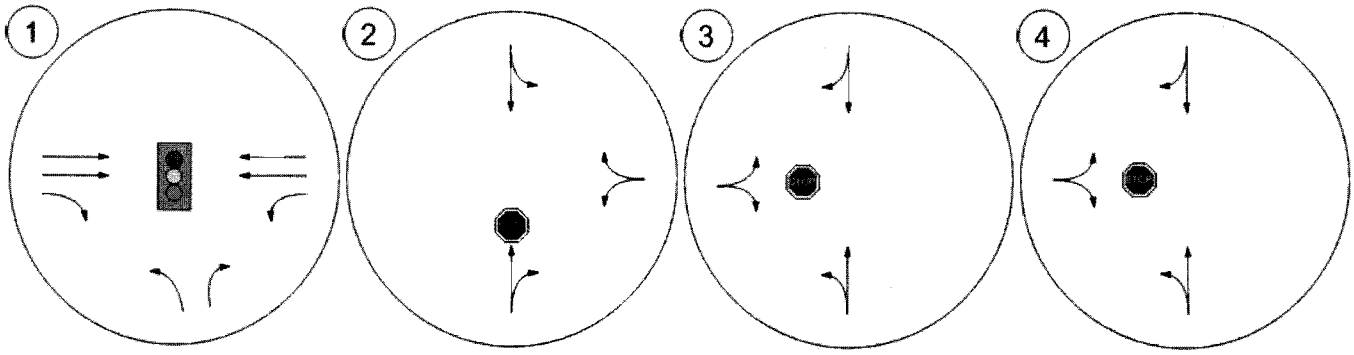
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.81	11.00	8.94	10.73	11.13	8.91	7.45	0.00	0.00	7.47	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.14	0.14	0.14	0.38	0.38	0.38	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	3.59	3.59	3.59	9.54	9.54	9.54	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.25			9.43			1.36			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.92											
Intersection LOS	B											

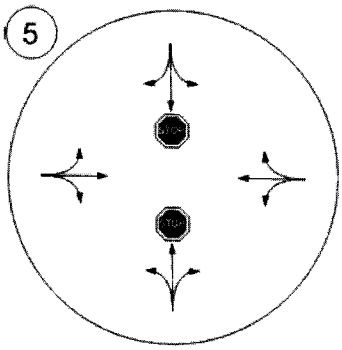
Study Intersections



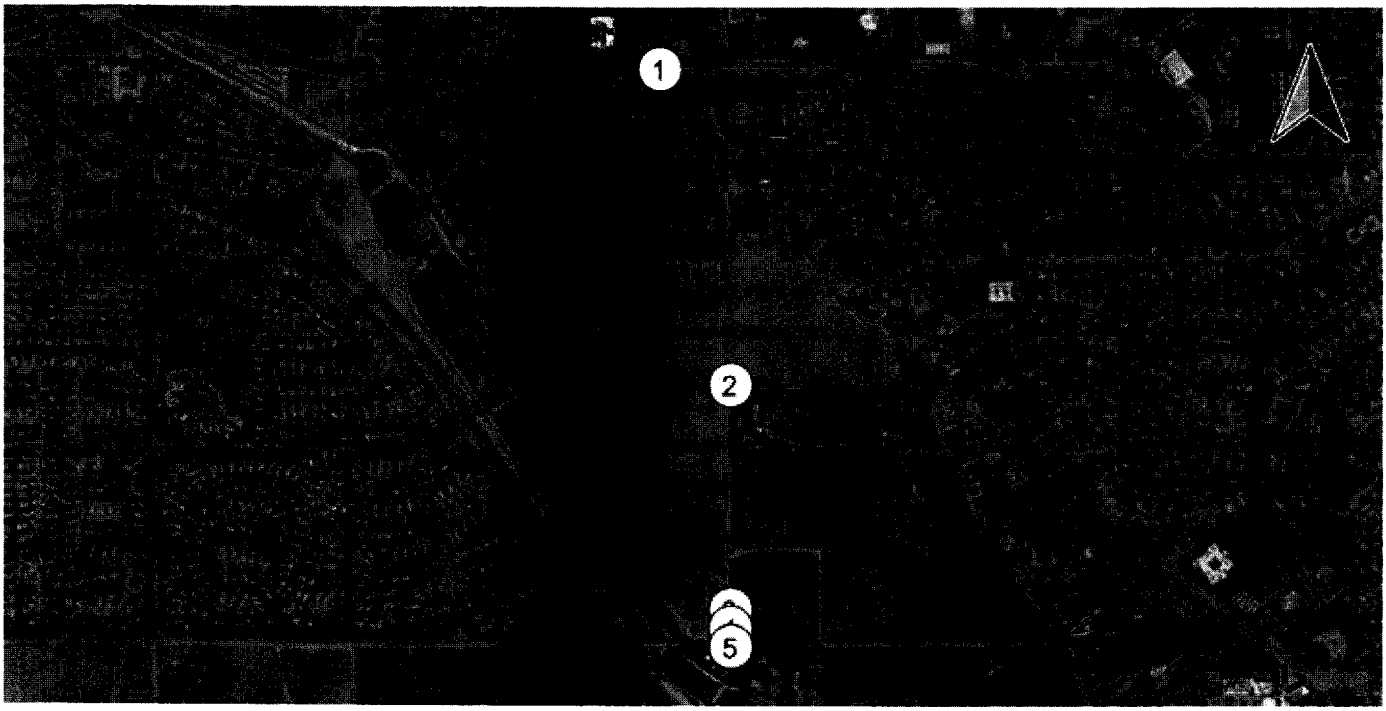
Lane Configuration and Traffic Control

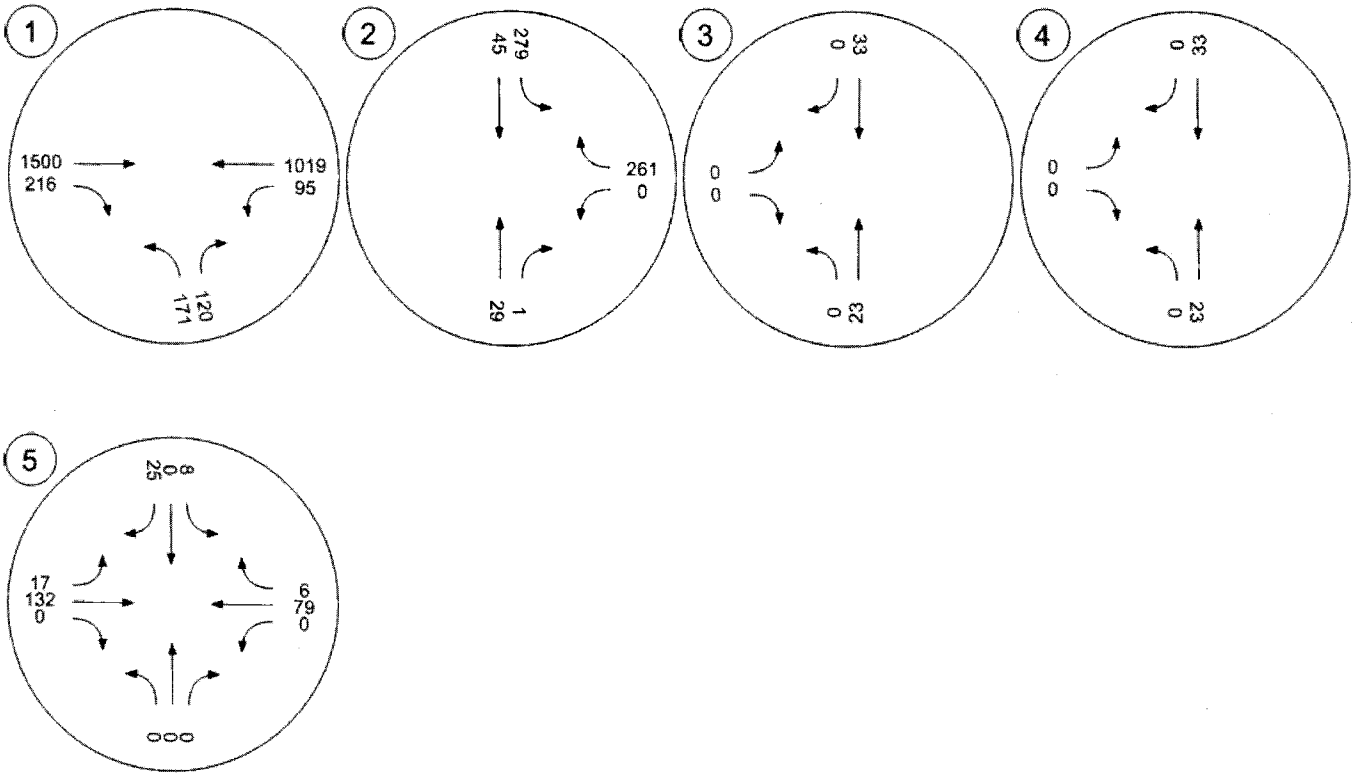




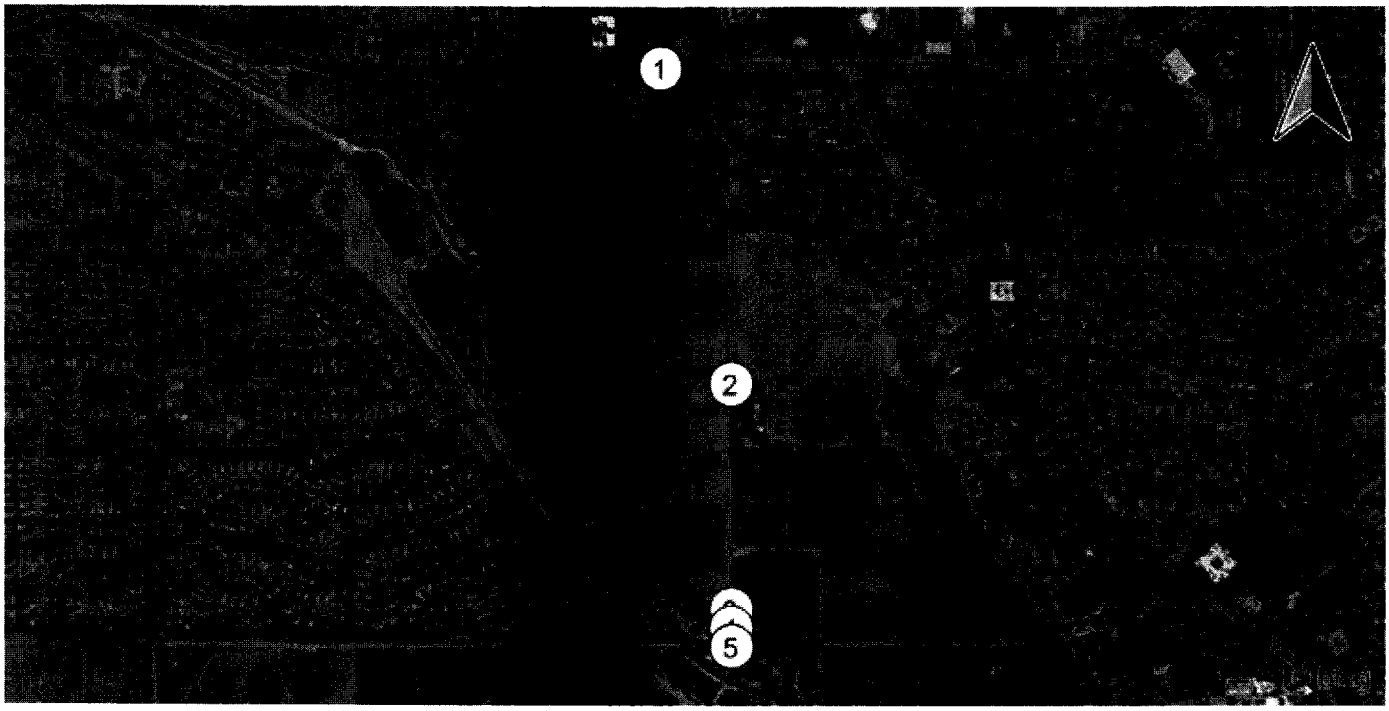


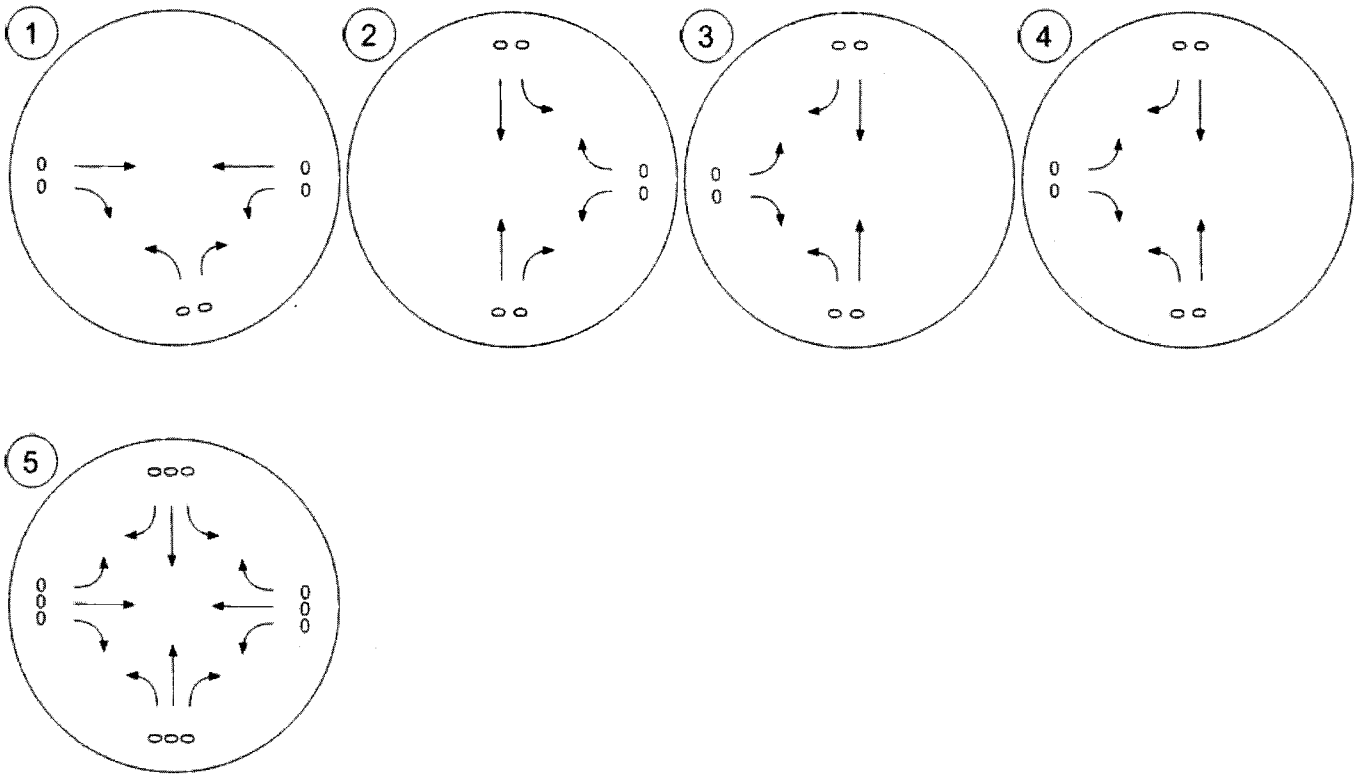
Traffic Volume - Base Volume



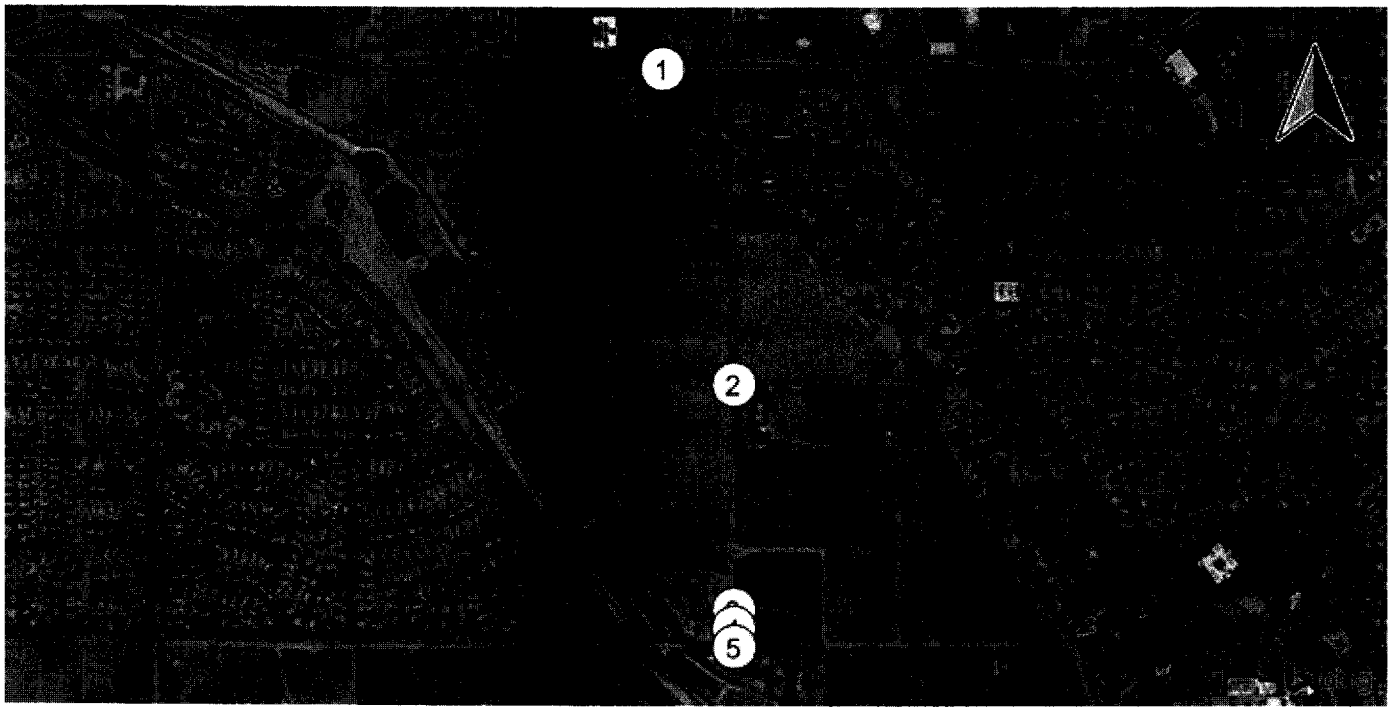


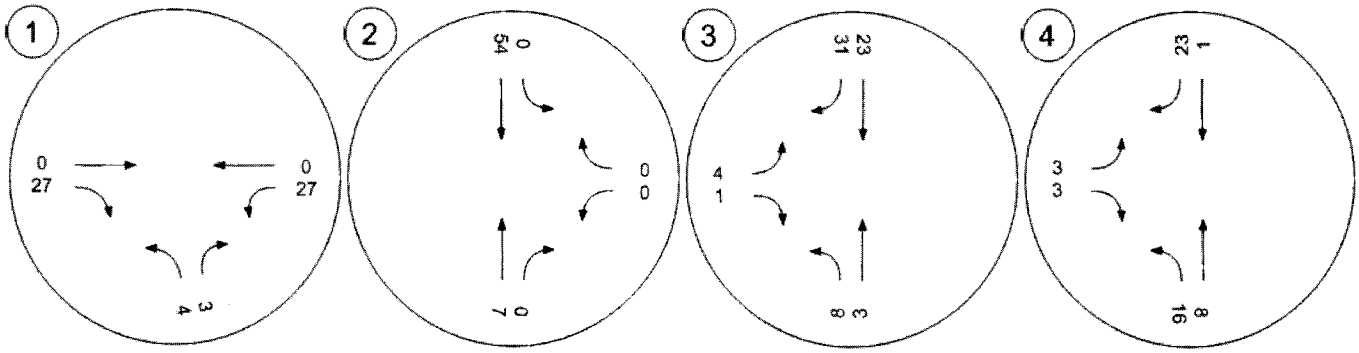
Traffic Volume - In-Process Volume

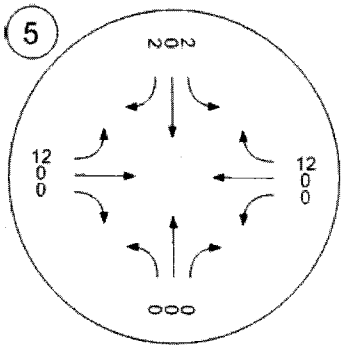




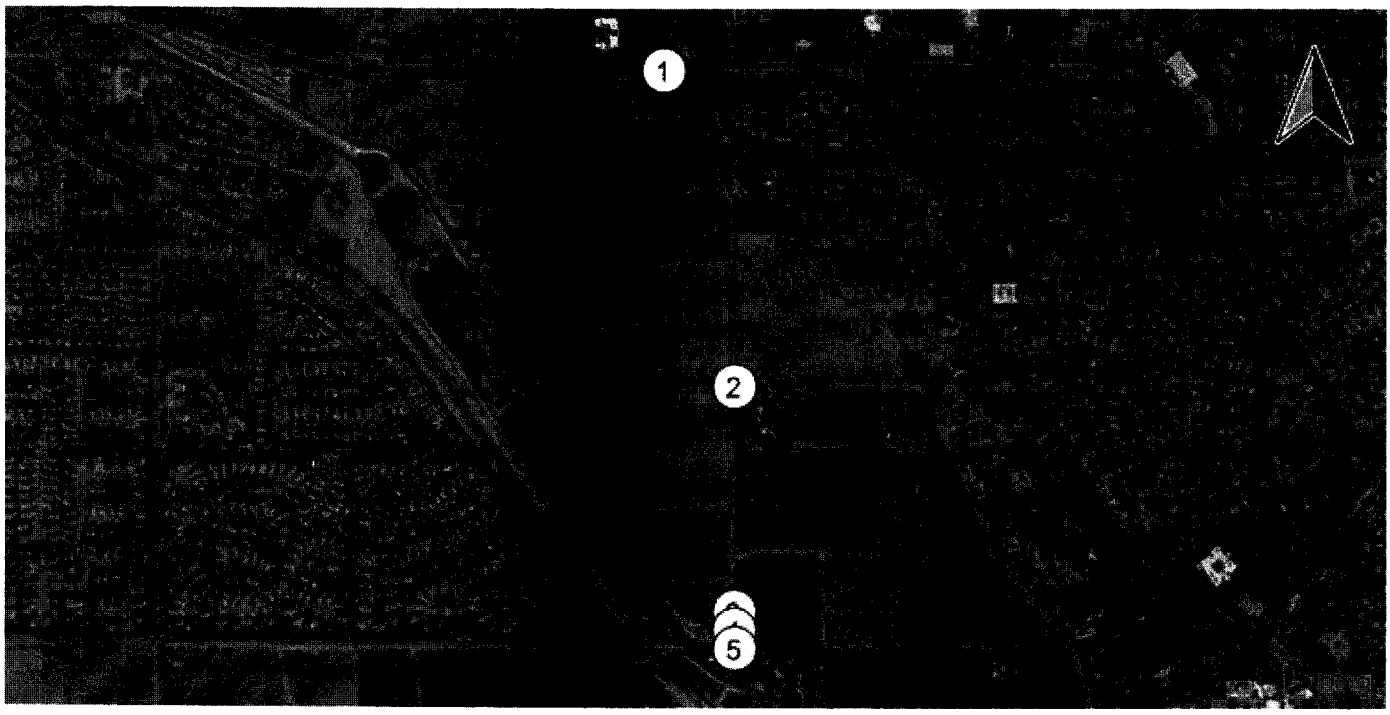
Traffic Volume - Net New Site Trips

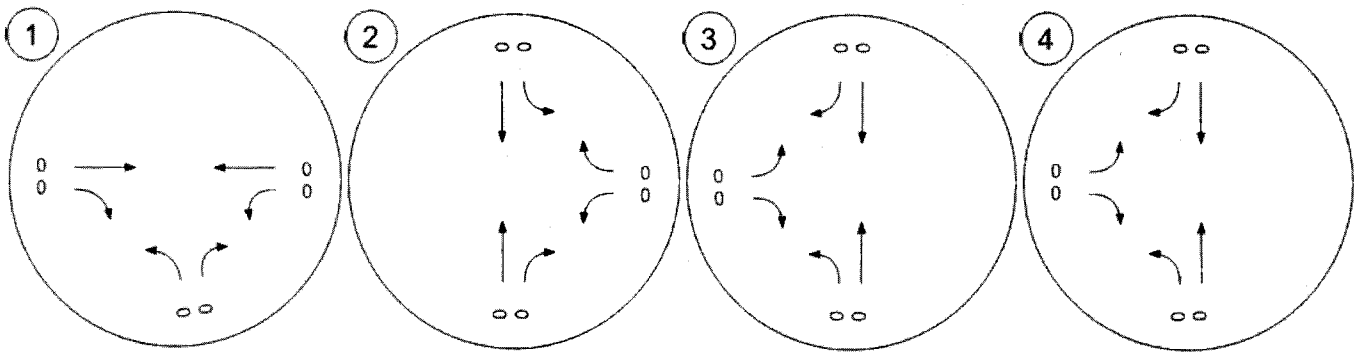


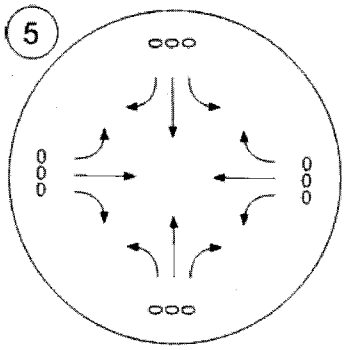




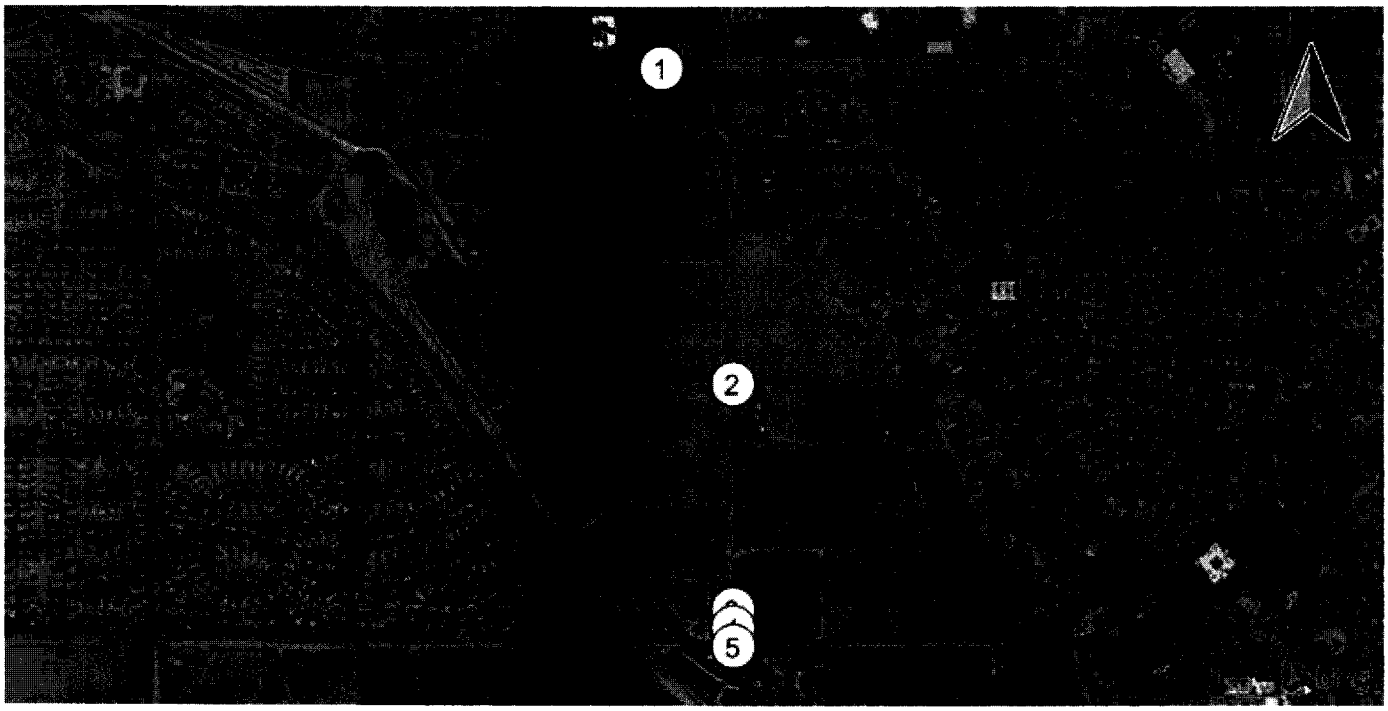
Traffic Volume - Other Volume

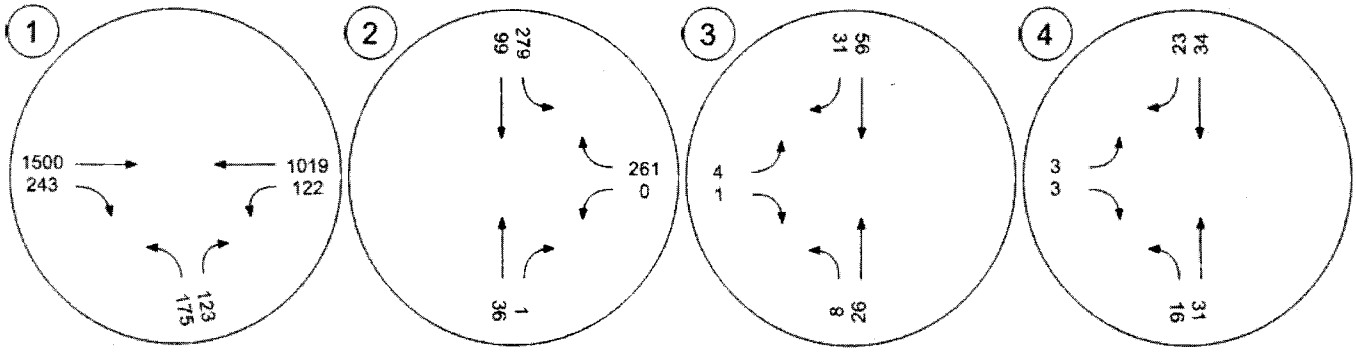


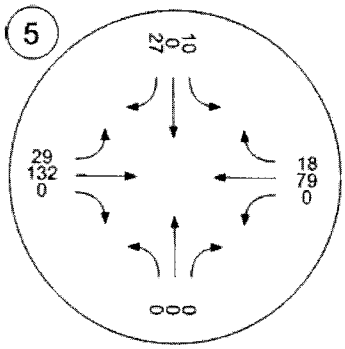




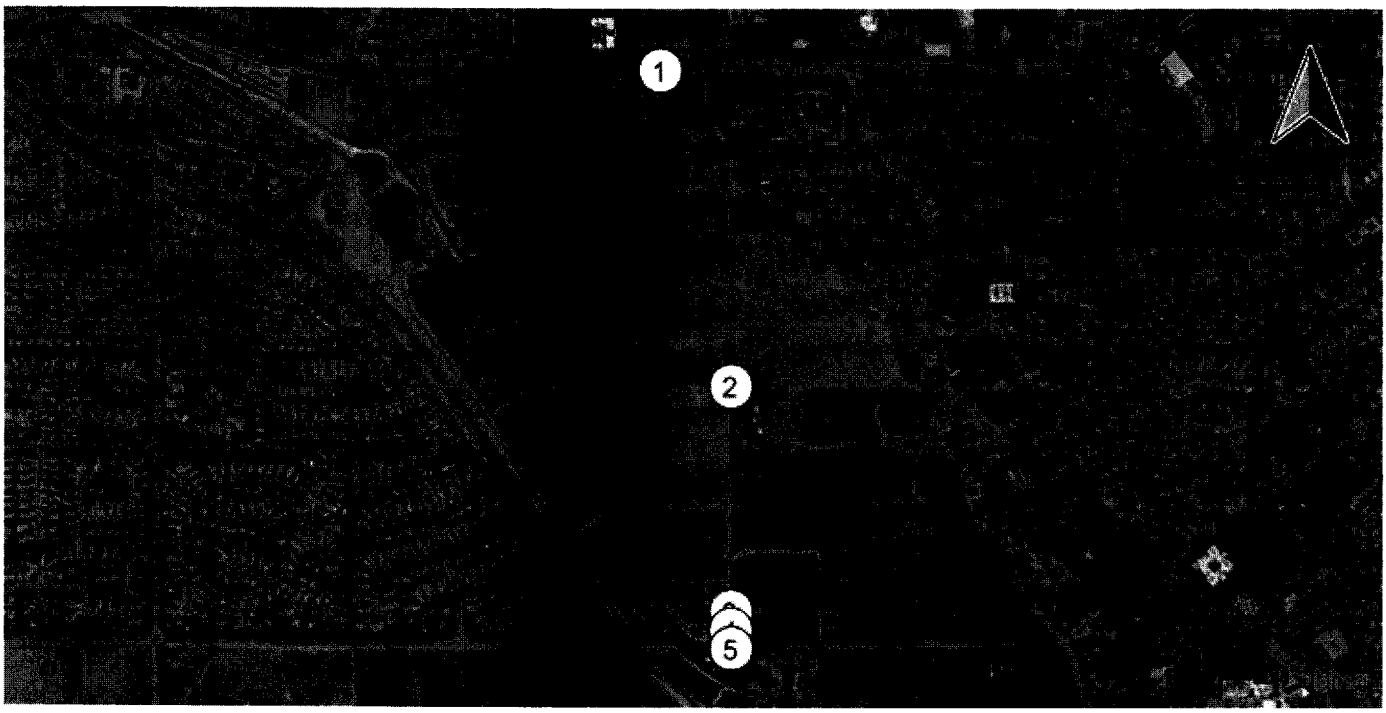
Traffic Volume - Future Total Volume

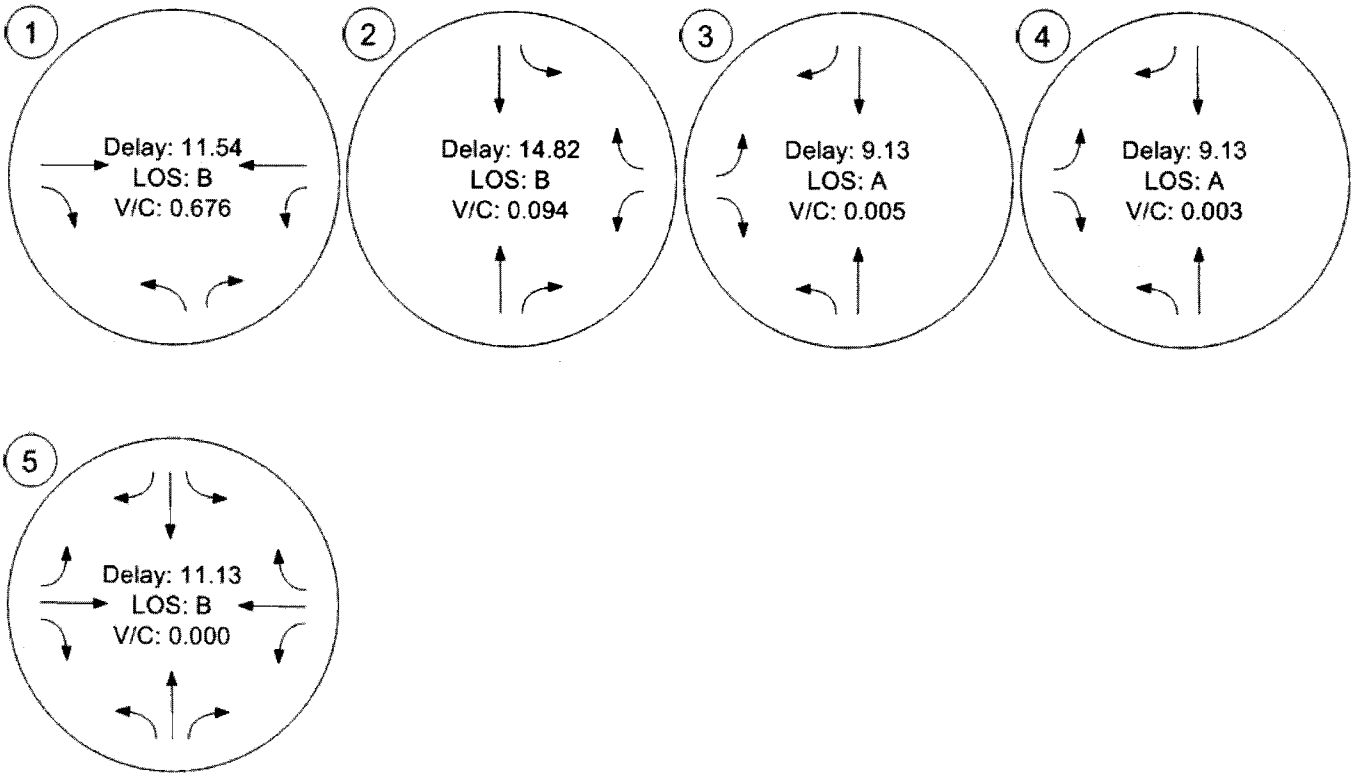




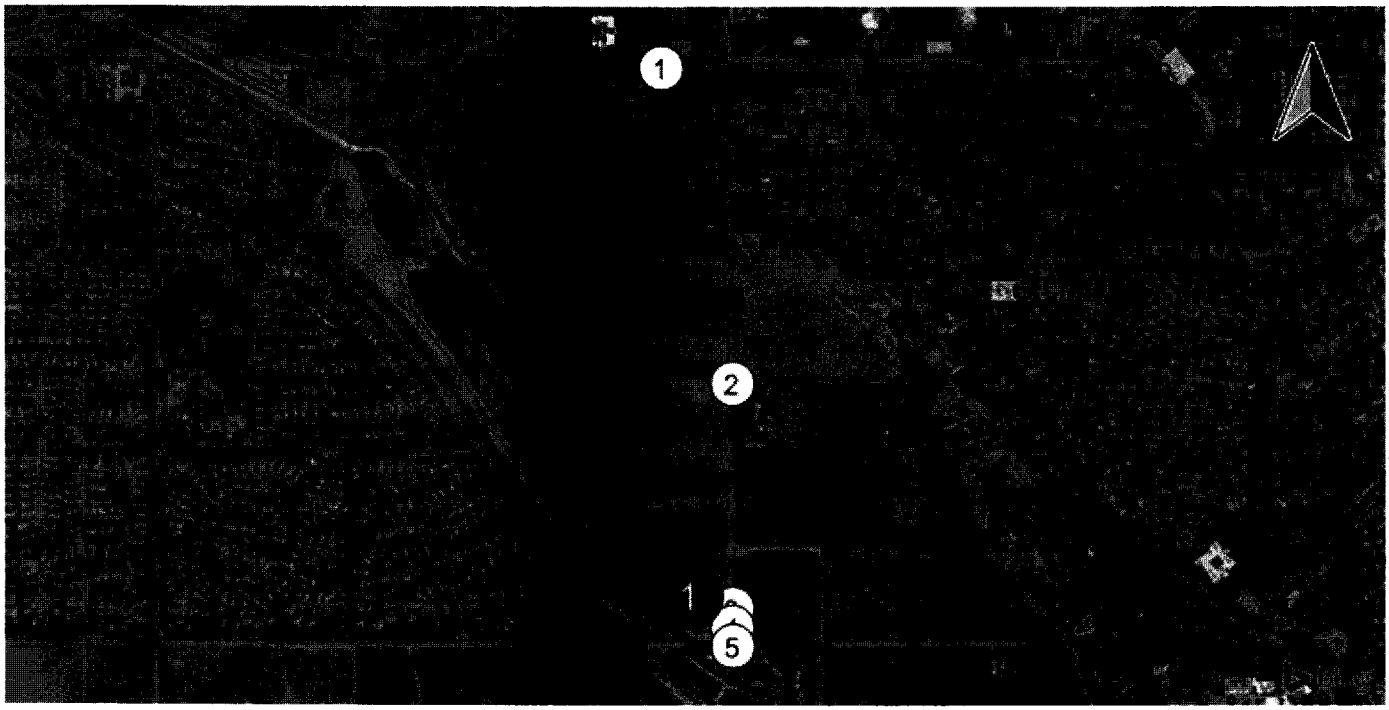


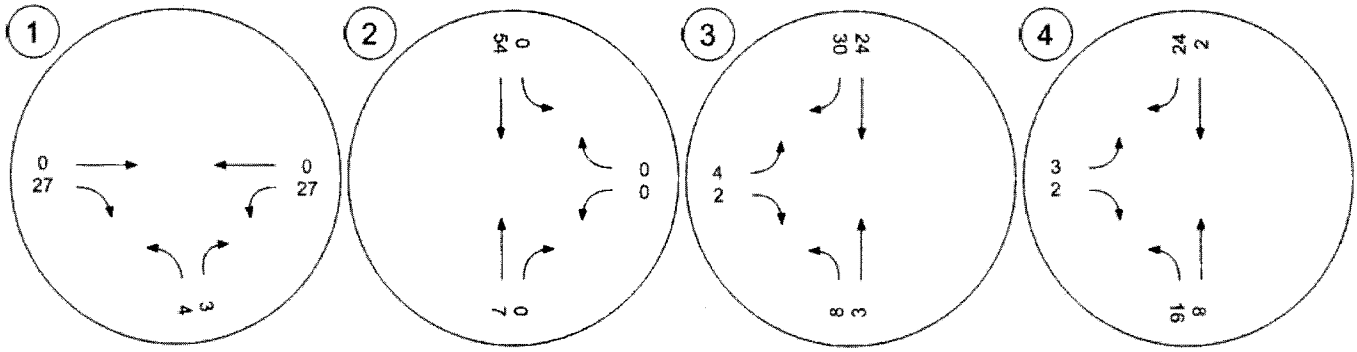
Traffic Conditions

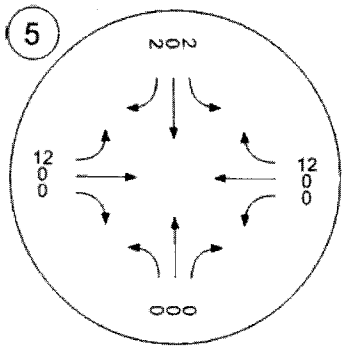




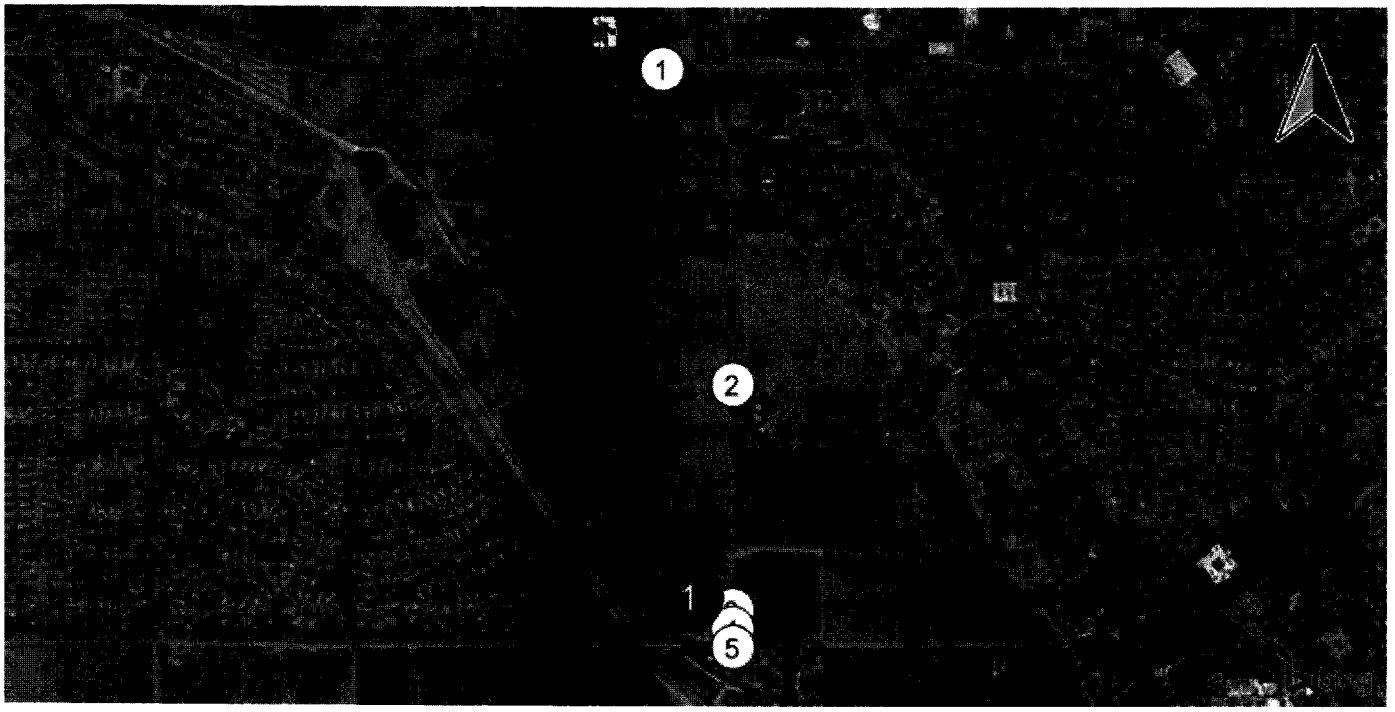
Fair Share - Fair Share Volumes - Zone 1: Project

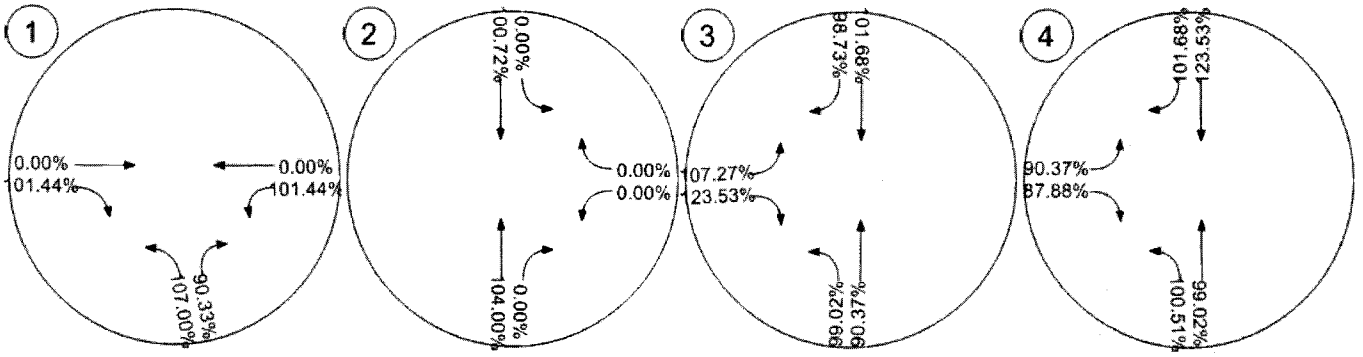


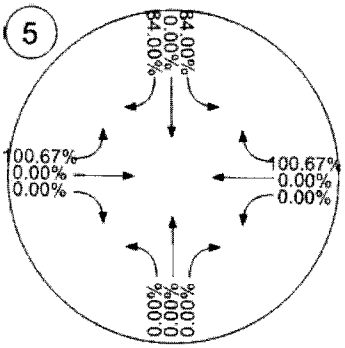




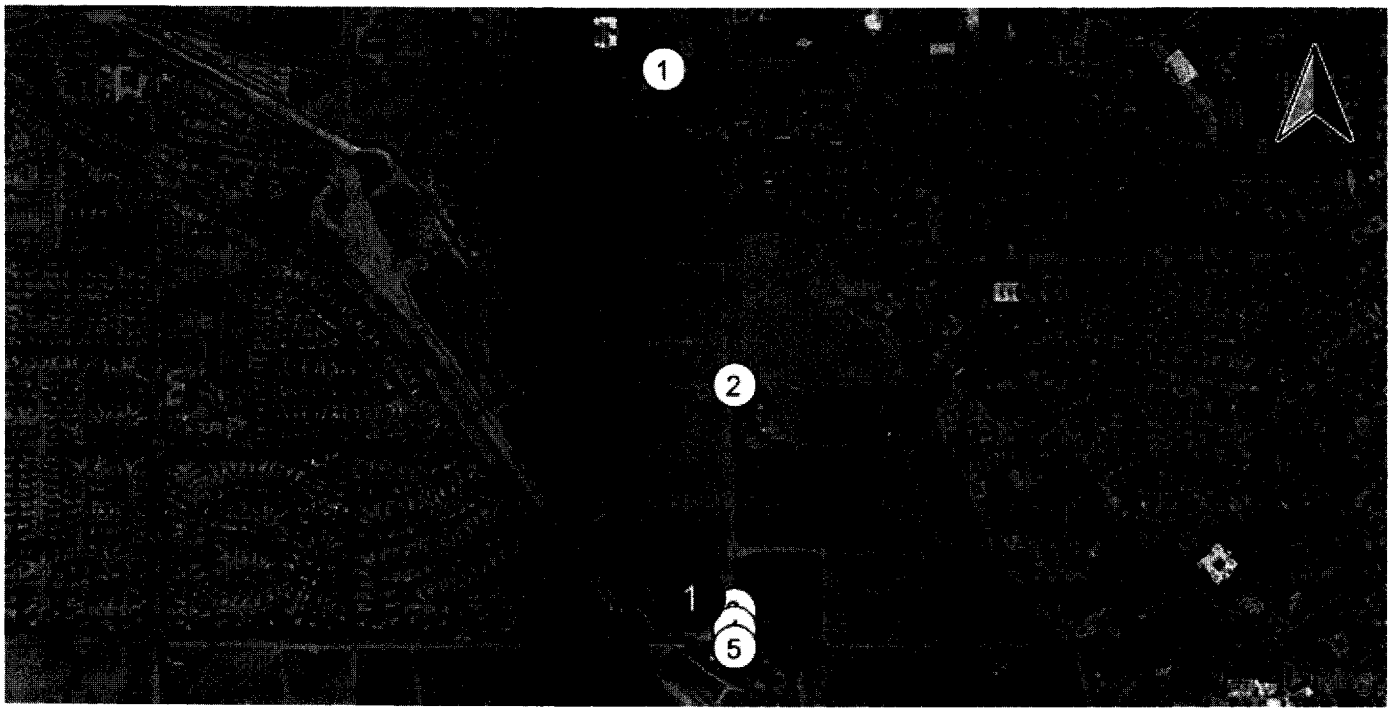
Fair Share - Fair Share % of Net New Site - Zone 1: Project

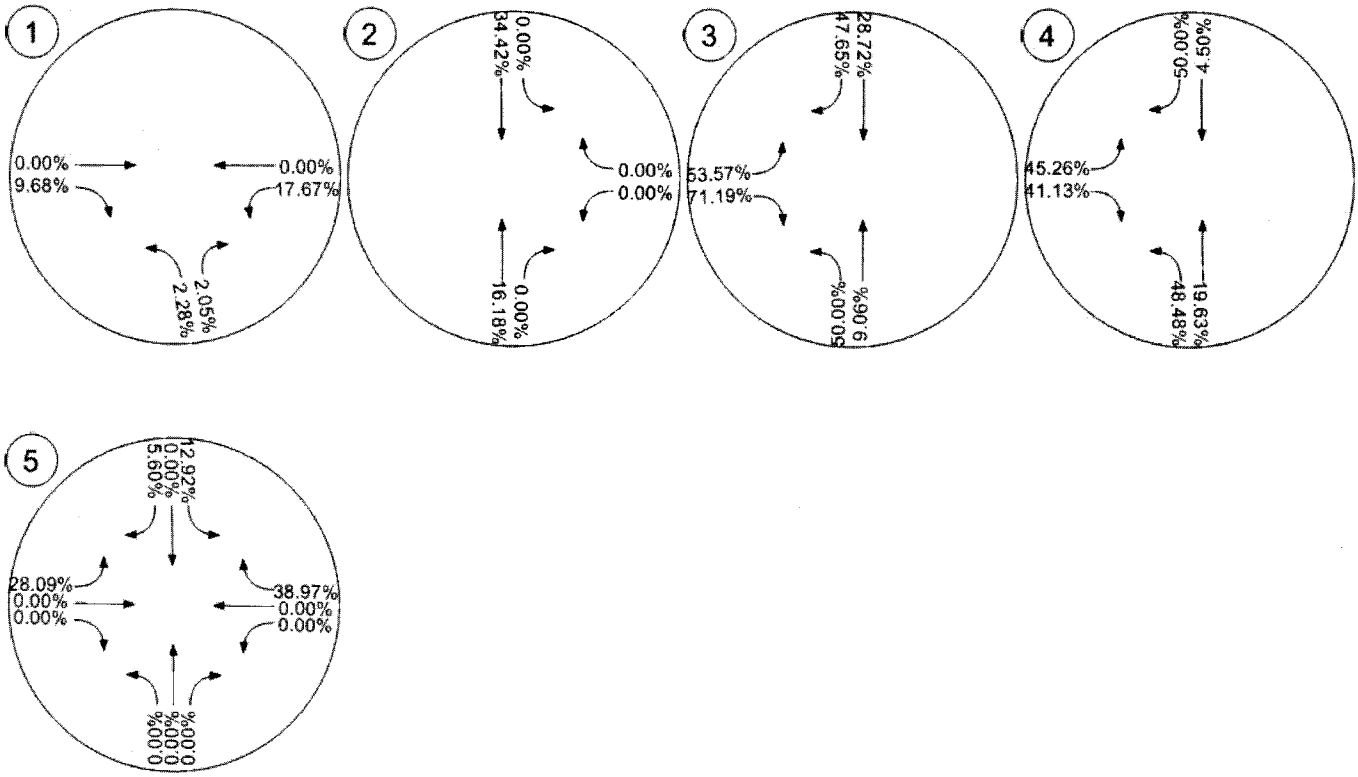






Fair Share - Fair Share % of Total Analysis - Zone 1: Project





Islamic Community Center of Redlands

Vistro File: J:\...\LR Friday Evening.vistro

Scenario 2: Future Year (2040) With Project - Friday Evening Peak Hour

Report File: J:\...\LRP Friday Evening.pdf

6/30/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	San Timoteo Canyon Road (NS) at Barton Road (EW)	Signalized	HCM 2010	WB Left	0.734	14.4	B
2	San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)	Two-way stop	HCM 2010	NB Thru	0.107	18.0	C
3	Nevada Street (NS) at Project North Access (EW)	Two-way stop	HCM 2010	EB Left	0.005	9.3	A
4	Nevada Street (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.004	9.2	A
5	Nevada Street (NS) at Beaumont Avenue (EW)	Two-way stop	HCM 2010	SB Thru	0.000	11.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: San Timoteo Canyon Road (NS) at Barton Road (EW)

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	1	1	0
Pocket Length [ft]	100.00	180.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	San Timoteo Canyon Road (NS)		Barton Road (EW)		Barton Road (EW)	
Base Volume Input [veh/h]	172	108	1582	348	162	968
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	0	24	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	111	1582	372	186	968
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	29	416	98	49	255
Total Analysis Volume [veh/h]	185	117	1665	392	196	1019
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	16	0	39	0	15	54
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	40	40	9	53
g / C, Green / Cycle	0.13	0.13	0.56	0.56	0.13	0.75
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.46	0.24	0.11	0.28
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	3618
c, Capacity [veh/h]	239	213	2038	910	242	2728
d1, Uniform Delay [s]	29.43	28.49	12.39	8.83	29.51	2.95
k, delay calibration	0.12	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.78	2.20	3.77	1.49	6.40	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

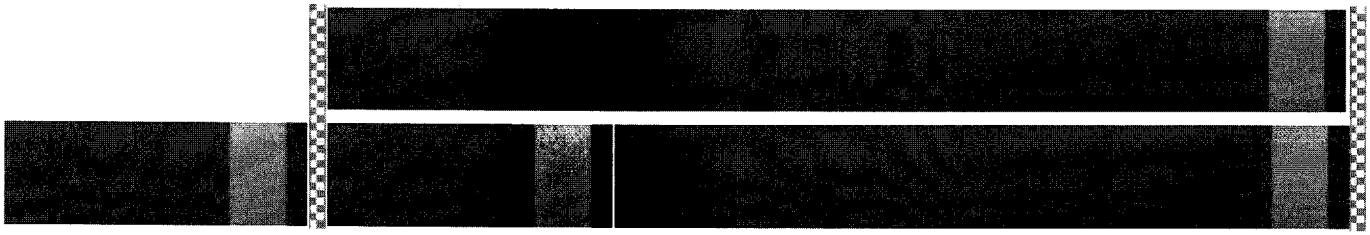
X, volume / capacity	0.78	0.55	0.82	0.43	0.81	0.37
d, Delay for Lane Group [s/veh]	35.21	30.69	16.16	10.32	35.91	3.35
Lane Group LOS	D	C	B	B	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	3.27	1.90	9.71	3.28	3.50	1.49
50th-Percentile Queue Length [ft]	81.81	47.47	242.73	81.92	87.56	37.29
95th-Percentile Queue Length [veh]	5.89	3.42	14.82	5.90	6.30	2.69
95th-Percentile Queue Length [ft]	147.27	85.45	370.49	147.45	157.61	67.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.21	30.69	16.16	10.32	35.91	3.35
Movement LOS	D	C	B	B	D	A
d_A, Approach Delay [s/veh]	33.46		15.05		8.60	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	14.41					
Intersection LOS	B					
Intersection V/C	0.734					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 2: San Timoteo Canyon Road/Nevada Street (NS) at San Timoteo Canyon Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.107

Intersection Setup

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		San Timoteo Canyon Road (NS)		San Timoteo Canyon Road (EW)	
Base Volume Input [veh/h]	24	0	490	33	0	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	48	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	490	81	0	250
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	129	21	0	66
Total Analysis Volume [veh/h]	33	0	516	85	0	263
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.01	13.14	0.00	0.00	8.52	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.35	0.35	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	8.85	8.85	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.01		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Nevada Street (NS) at Project North Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project North Access (EW)	
Base Volume Input [veh/h]	0	33	51	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	3	21	27	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	36	72	27	4	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	9	19	7	1	0
Total Analysis Volume [veh/h]	7	38	76	28	4	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	0.00	9.25	8.72
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.32	2.32	0.00	0.00	0.43	0.43
d_A, Approach Delay [s/veh]	1.15		0.00		9.15	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Nevada Street (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

volumes

Name	Nevada Street (NS)		Nevada Street (NS)		Project South Access (EW)	
Base Volume Input [veh/h]	0	33	51	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	7	1	21	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	40	52	21	3	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	11	14	6	1	1
Total Analysis Volume [veh/h]	14	42	55	22	3	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	0.00	9.24	8.61
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft]	2.84	2.84	0.00	0.00	0.49	0.49
d_A, Approach Delay [s/veh]	1.84		0.00		8.93	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.13					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Nevada Street (NS) at Beaumont Avenue (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

volumes

Name	Driveway (NS)			Nevada Street (NS)			Beaumont Avenue (EW)			Beaumont Avenue (EW)		
Base Volume Input [veh/h]	0	0	1	10	0	41	29	150	0	0	82	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	2	0	2	10	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	12	0	43	39	150	0	0	82	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	0	11	10	39	0	0	22	4
Total Analysis Volume [veh/h]	0	0	1	13	0	45	41	158	0	0	86	15
Pedestrian Volume [ped/h]	0			0			0			0		

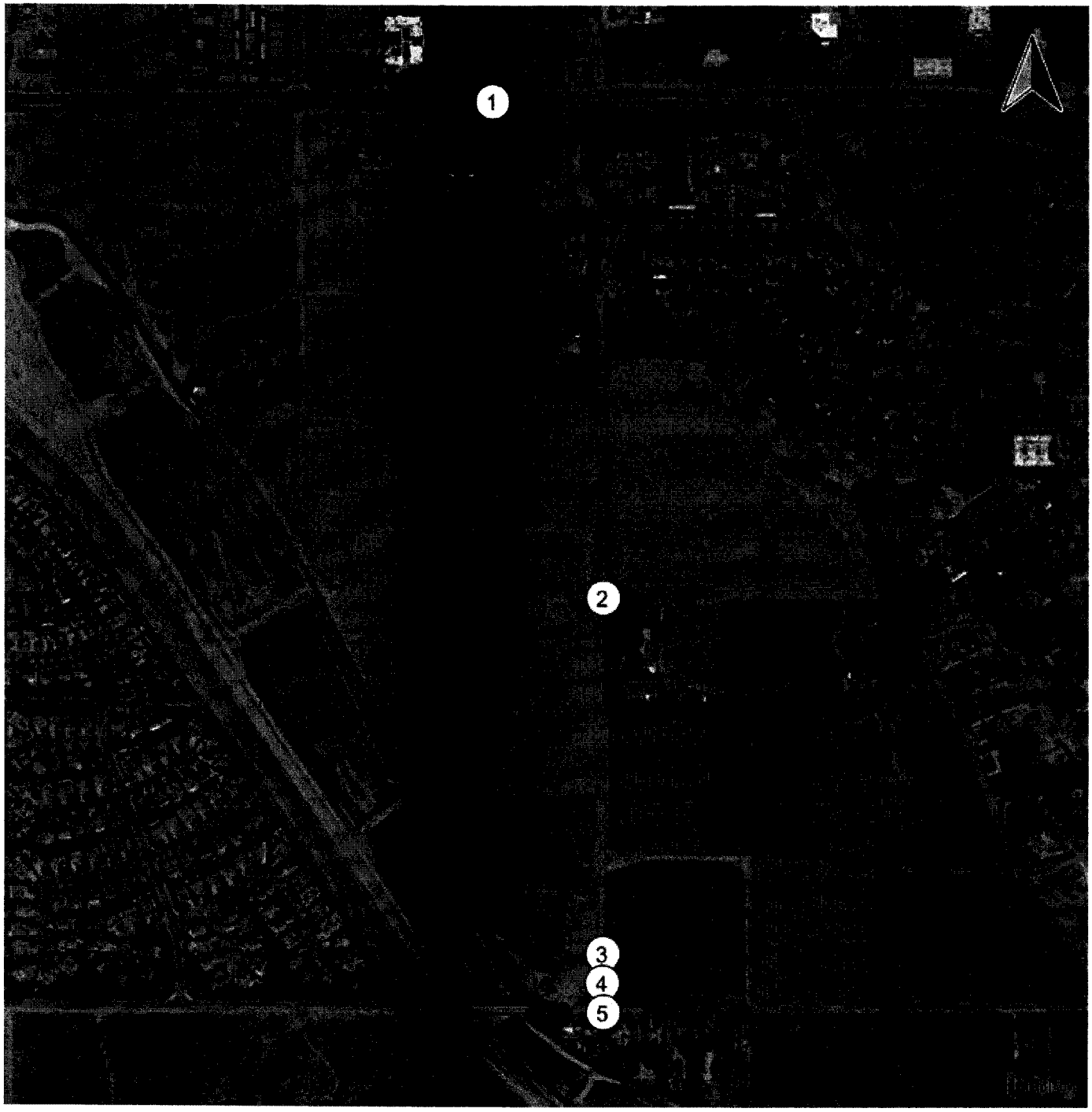
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

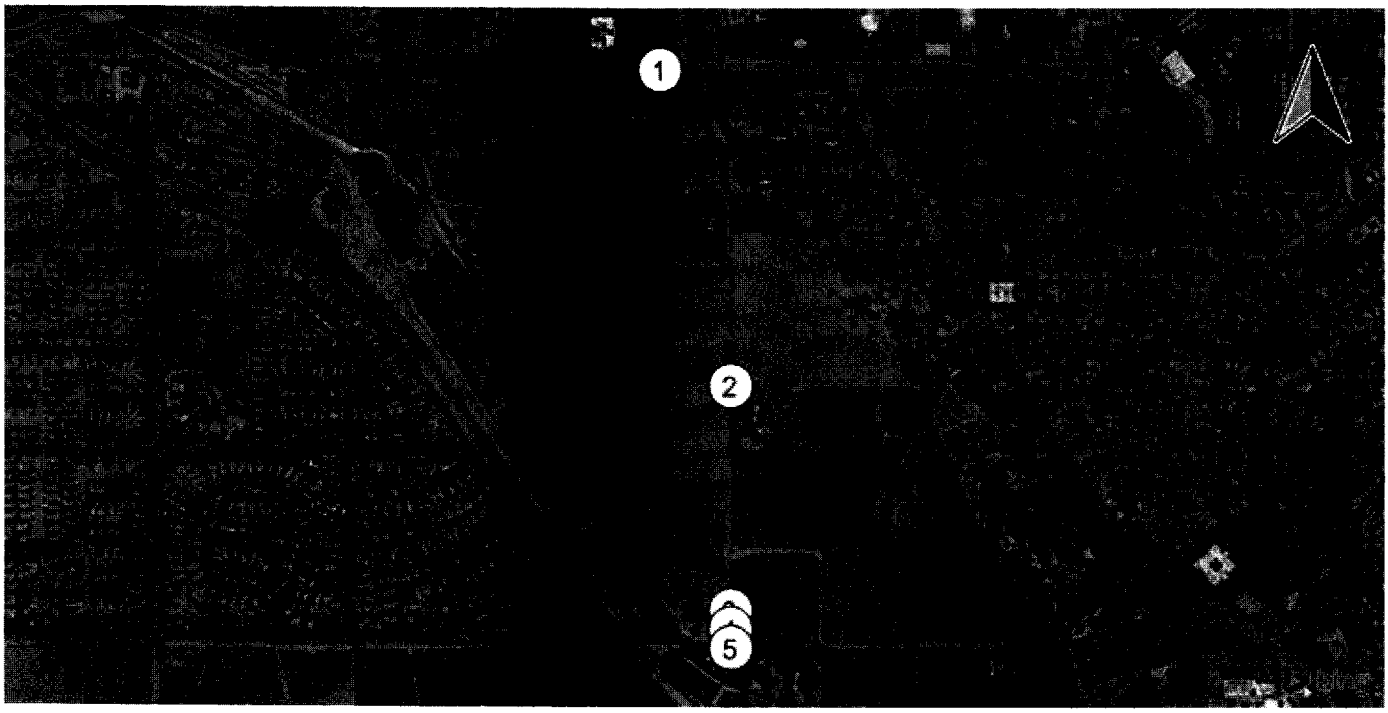
Movement, Approach, & Intersection Results

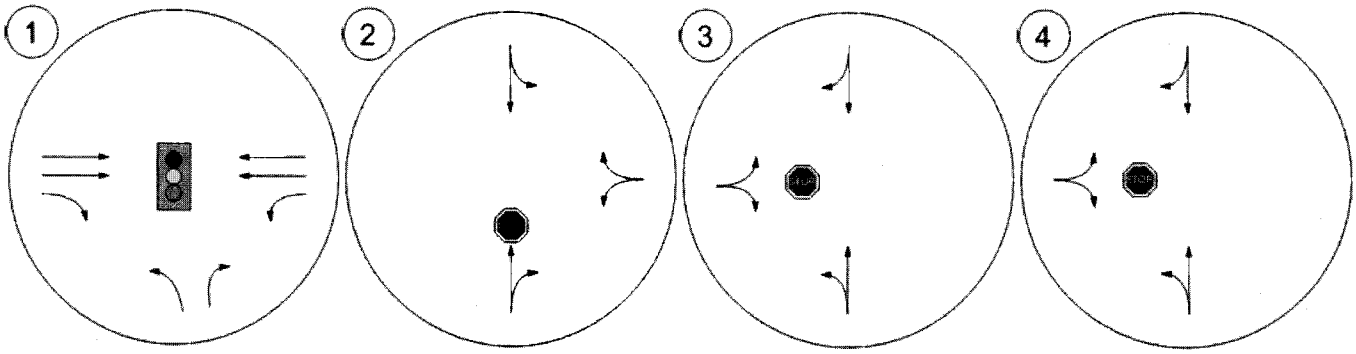
V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.41	11.36	9.04	11.22	11.60	9.02	7.46	0.00	0.00	7.51	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.22	0.22	0.22	0.46	0.46	0.46	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.08	0.08	0.08	5.44	5.44	5.44	11.40	11.40	11.40	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.04			9.51			1.54			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.41											
Intersection LOS	B											

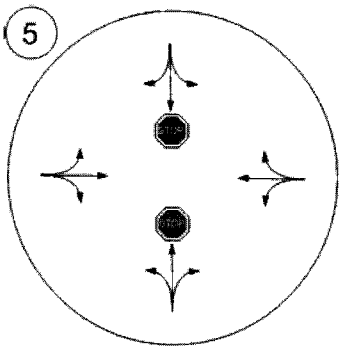
Study Intersections



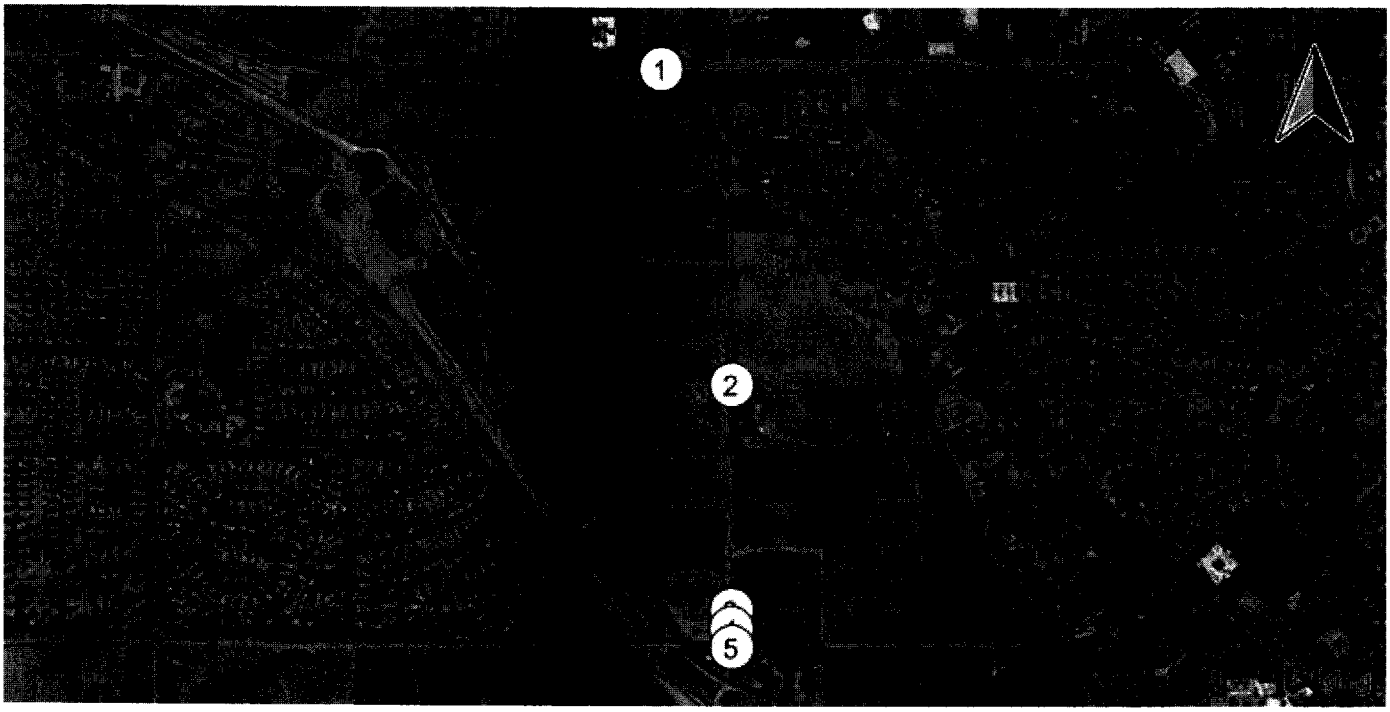
Lane Configuration and Traffic Control

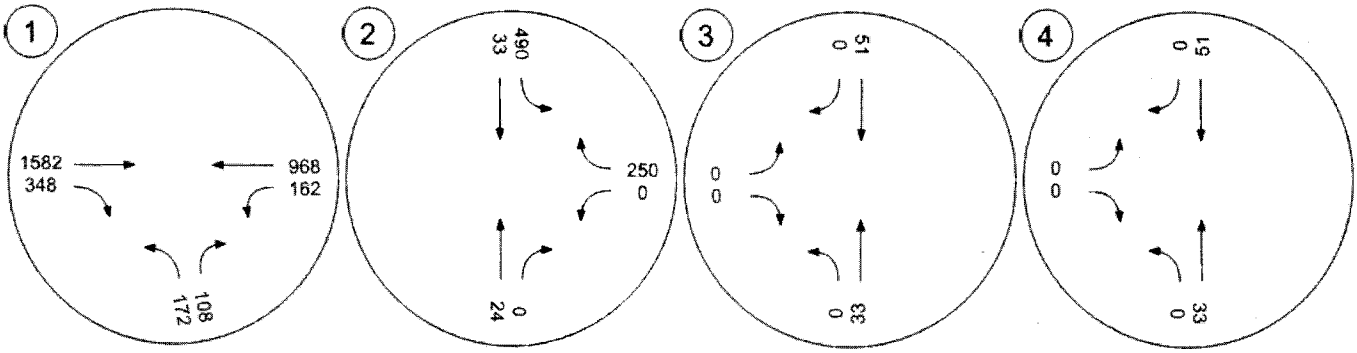


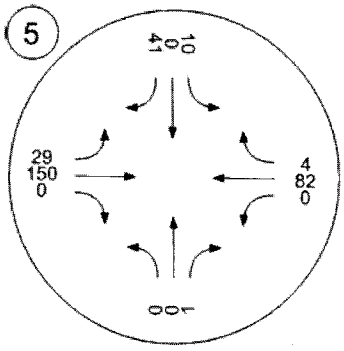




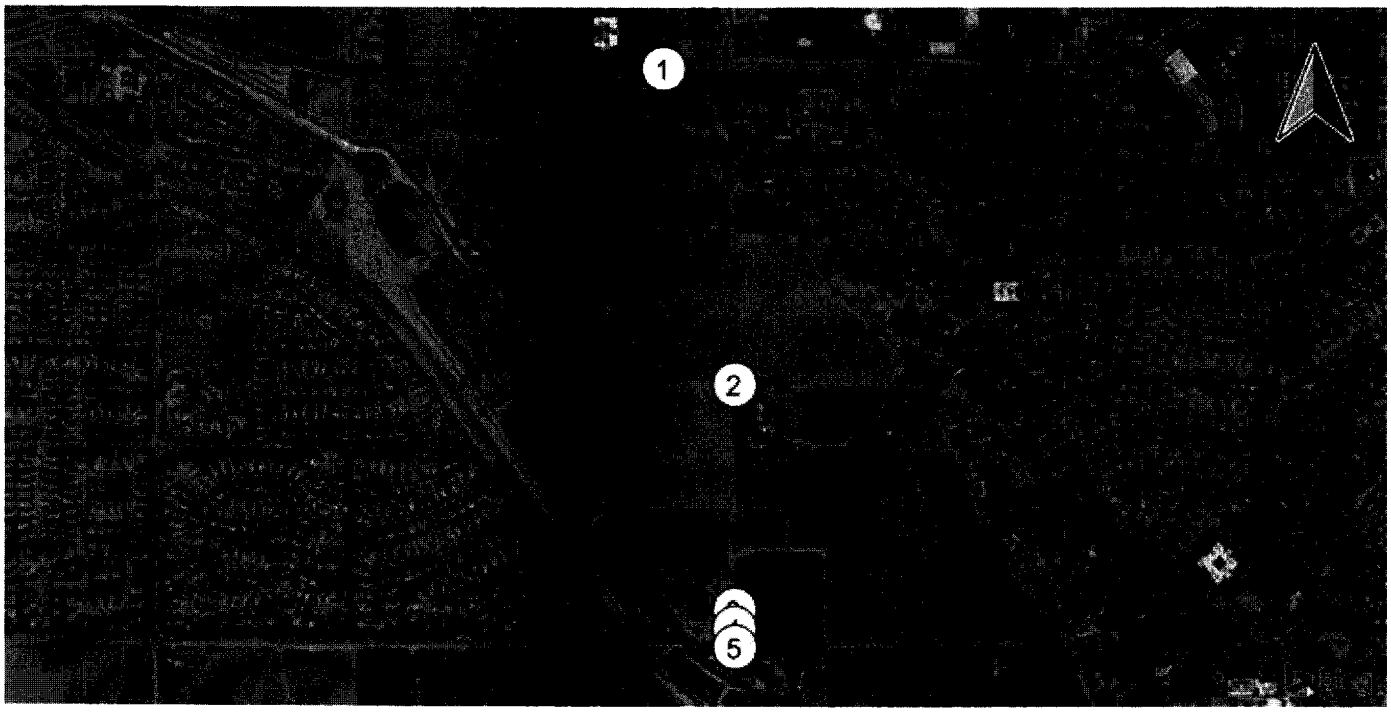
Traffic Volume - Base Volume

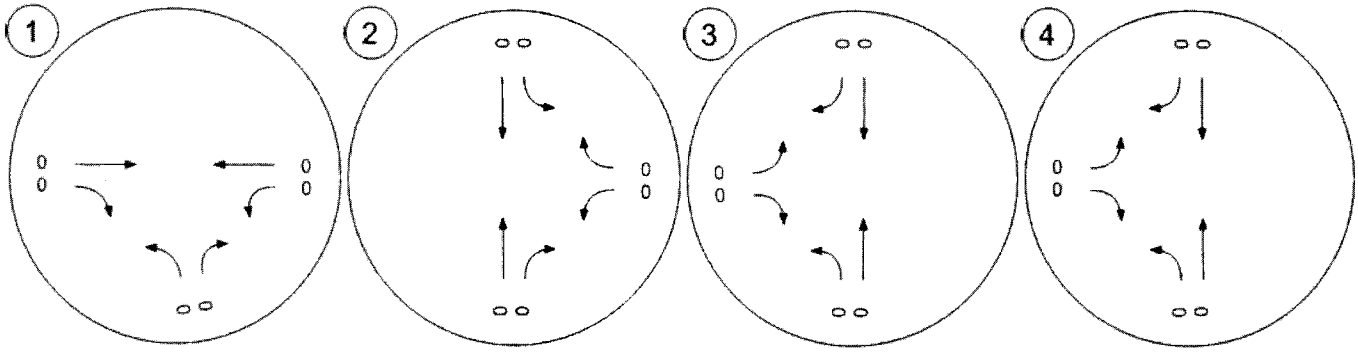


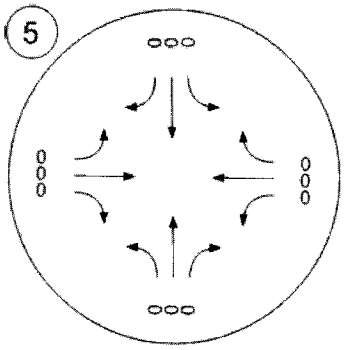




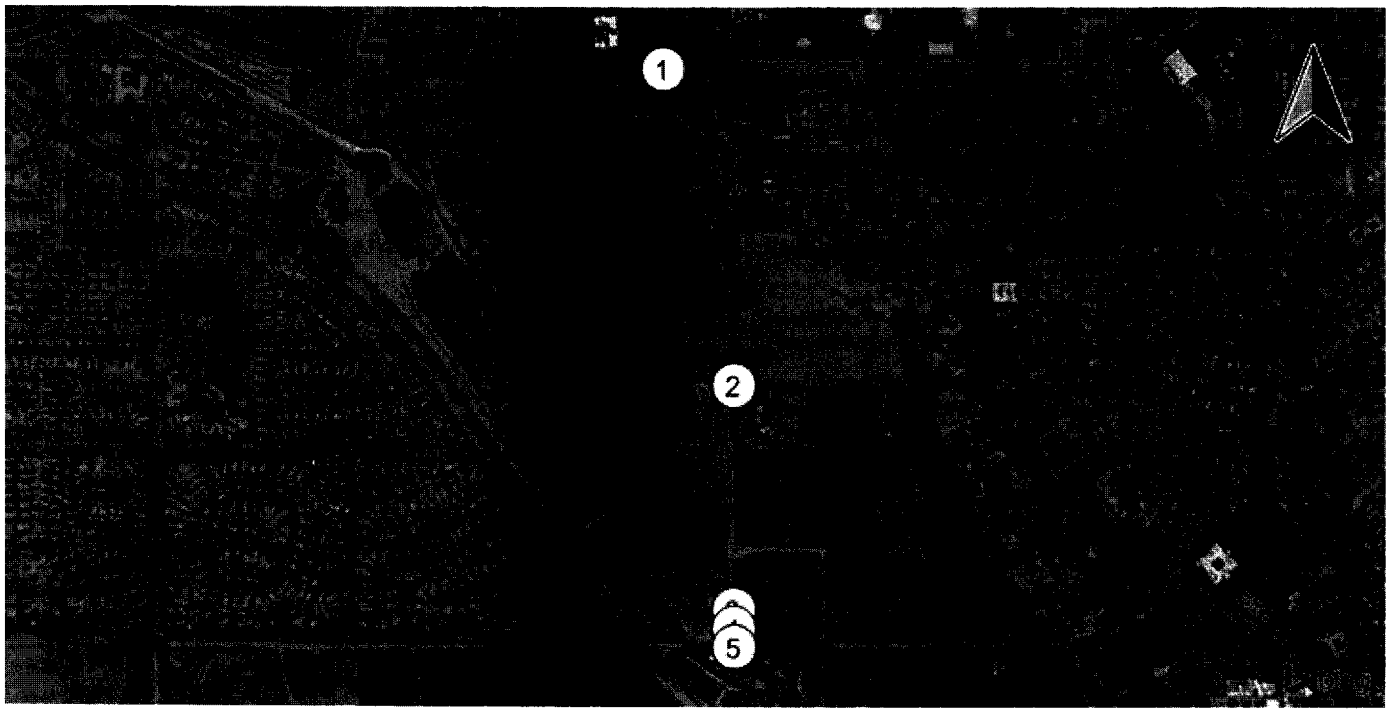
Traffic Volume - In-Process Volume

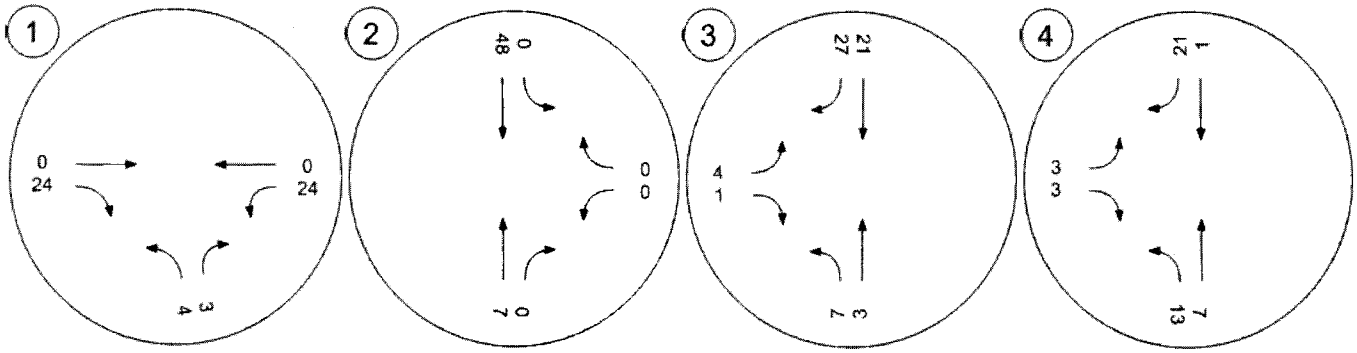


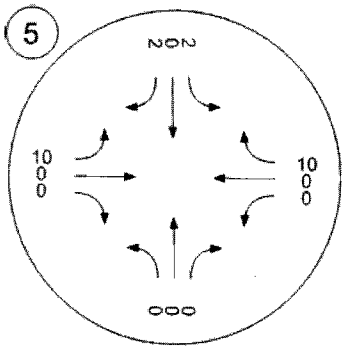




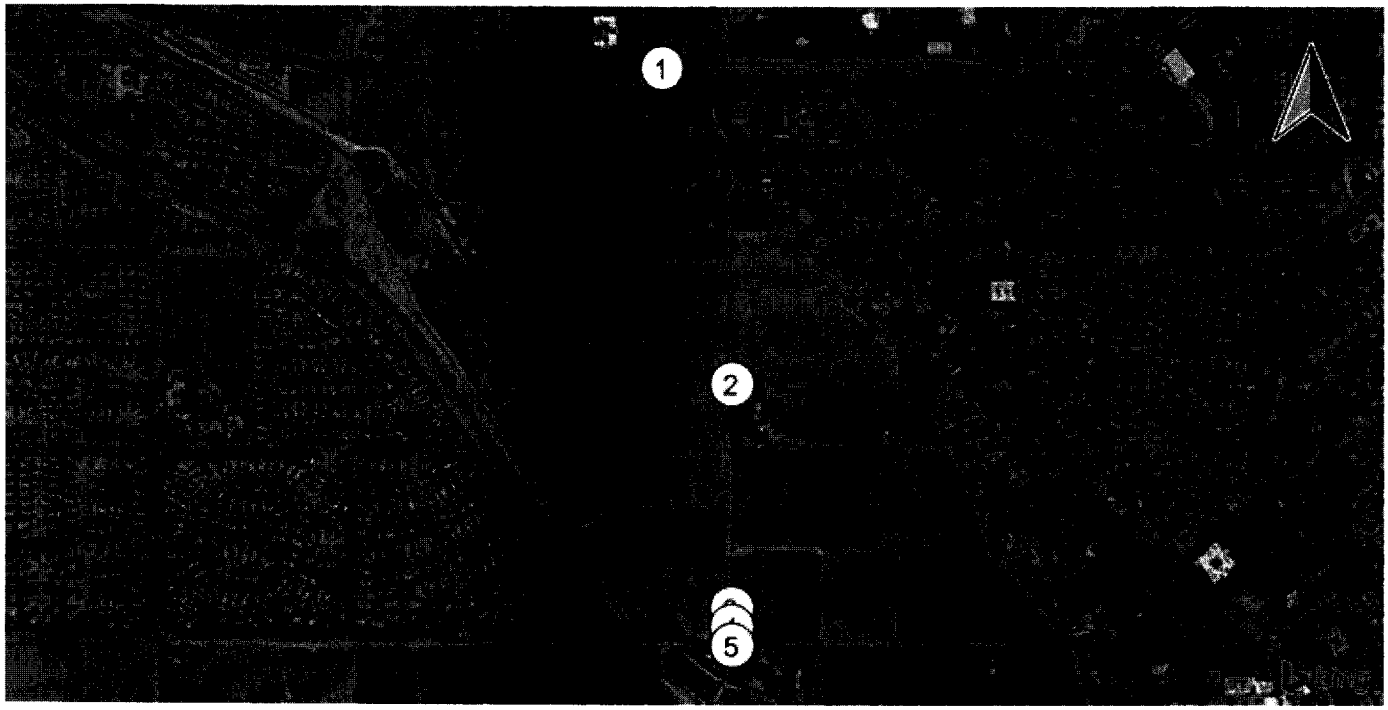
Traffic Volume - Net New Site Trips

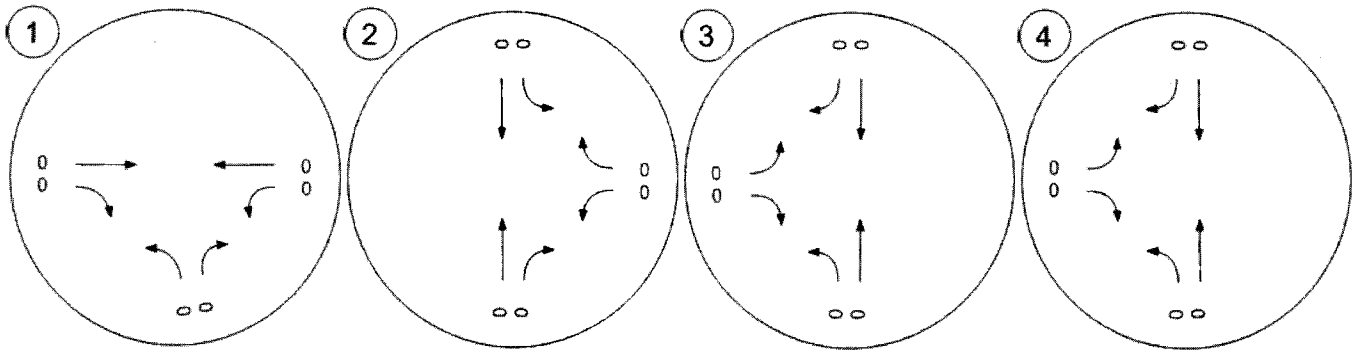


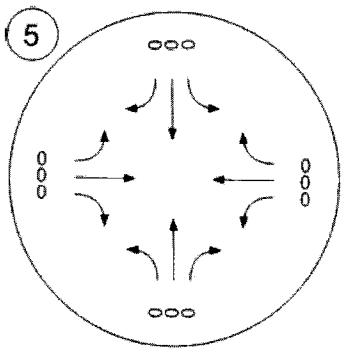




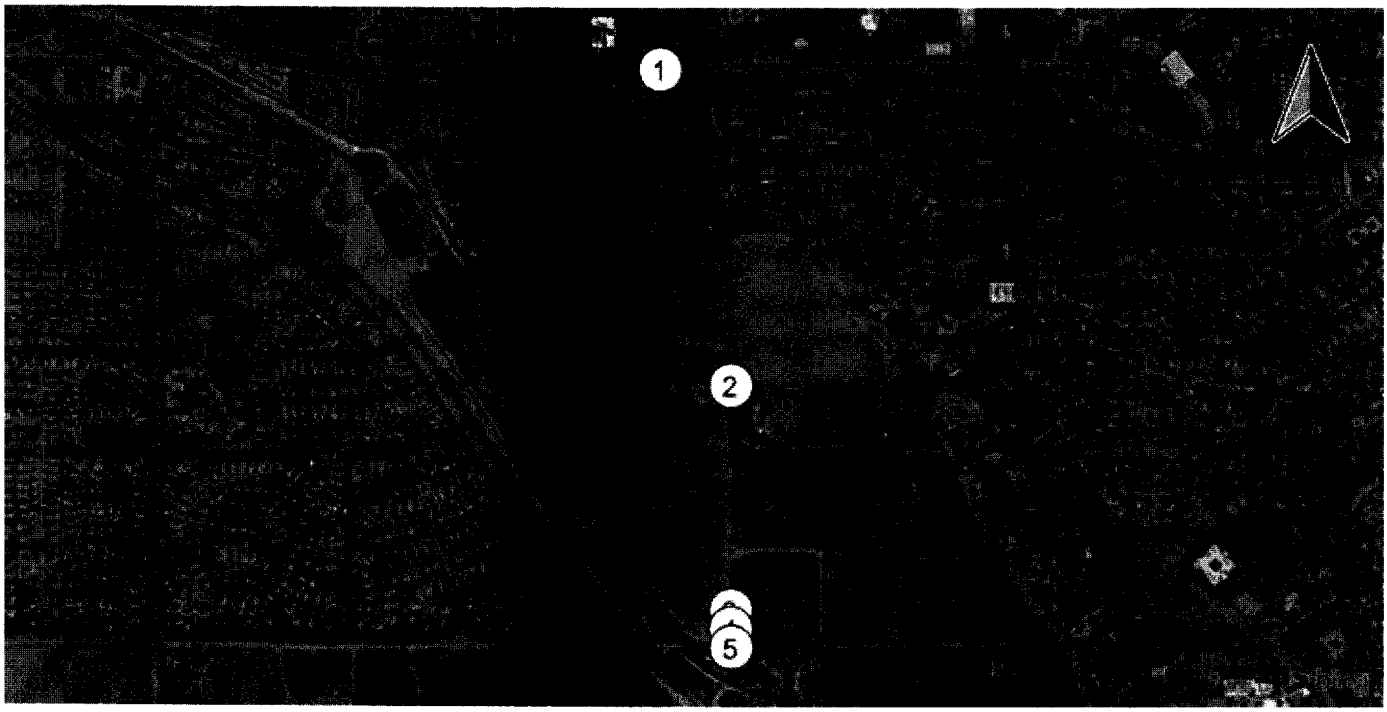
Traffic Volume - Other Volume

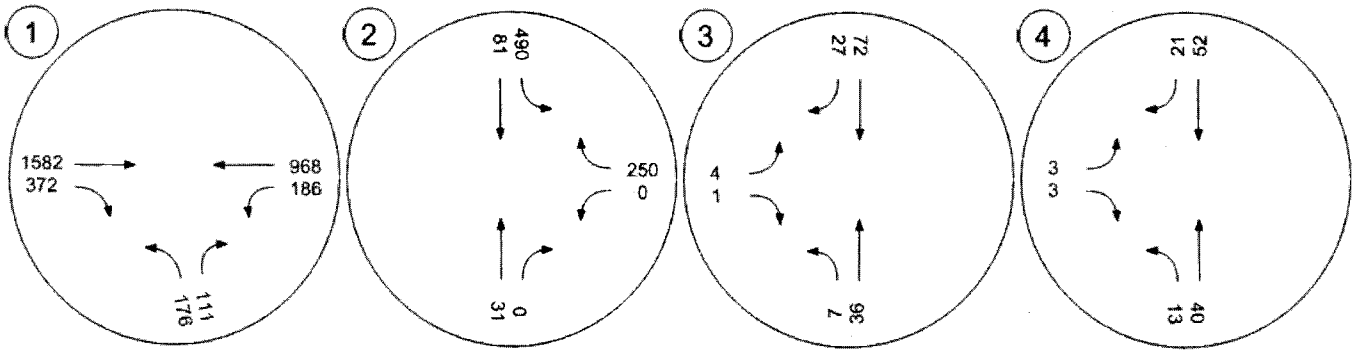


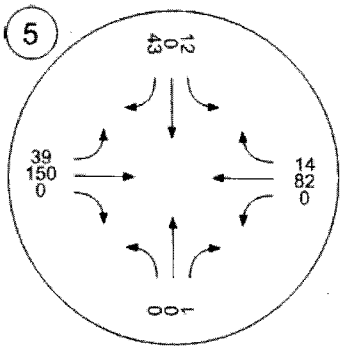




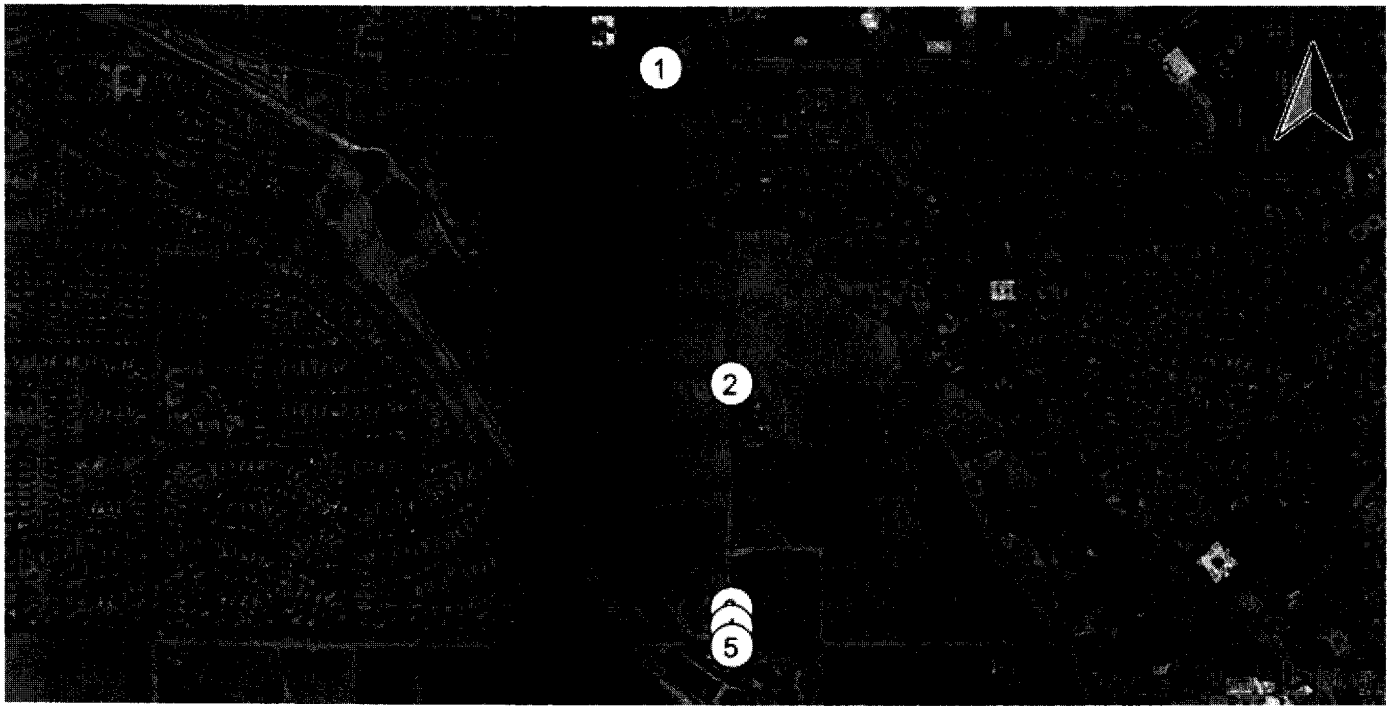
Traffic Volume - Future Total Volume

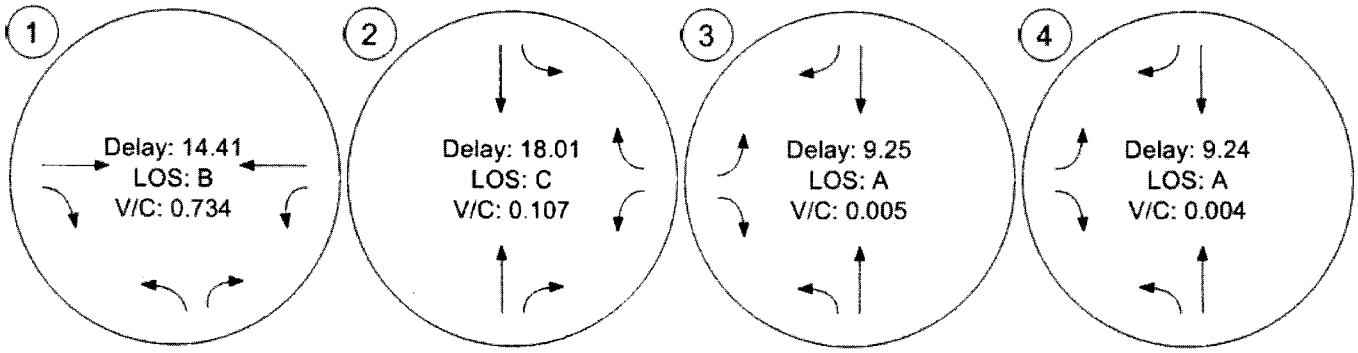


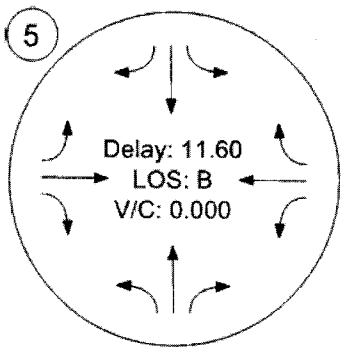




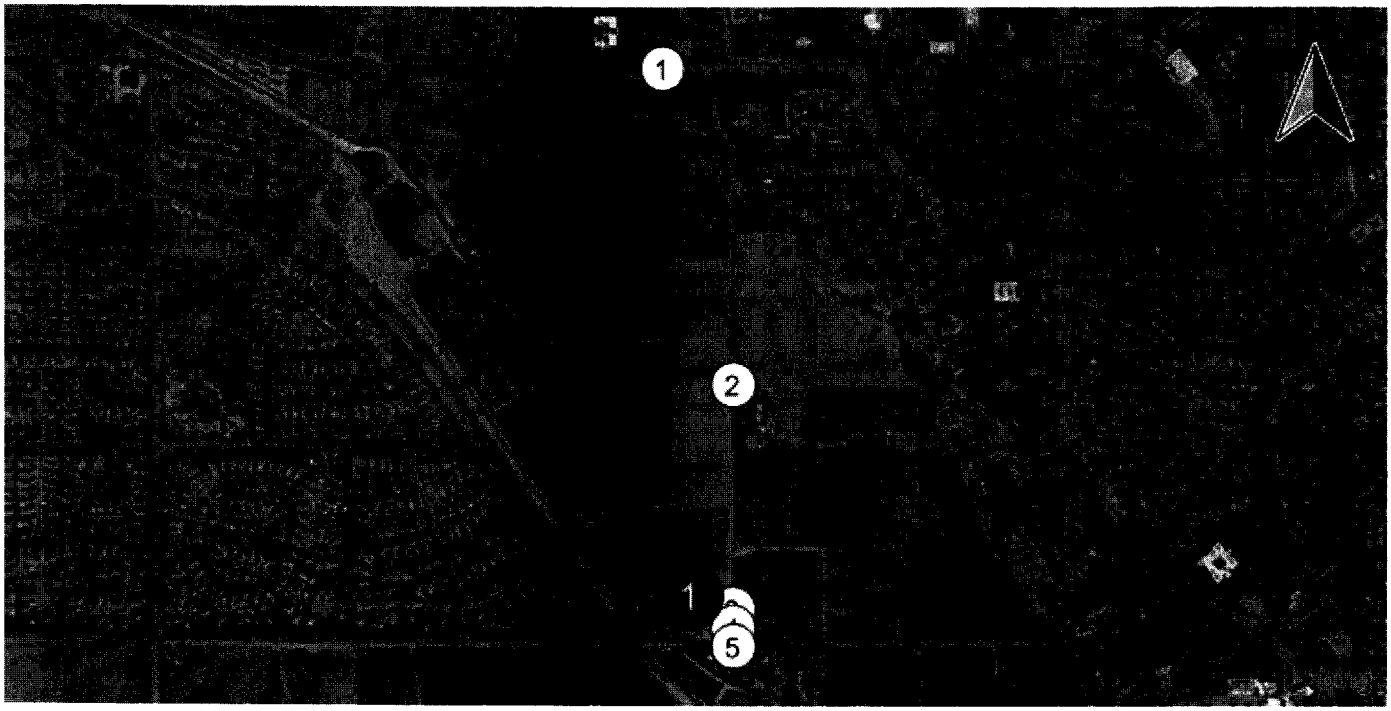
Traffic Conditions

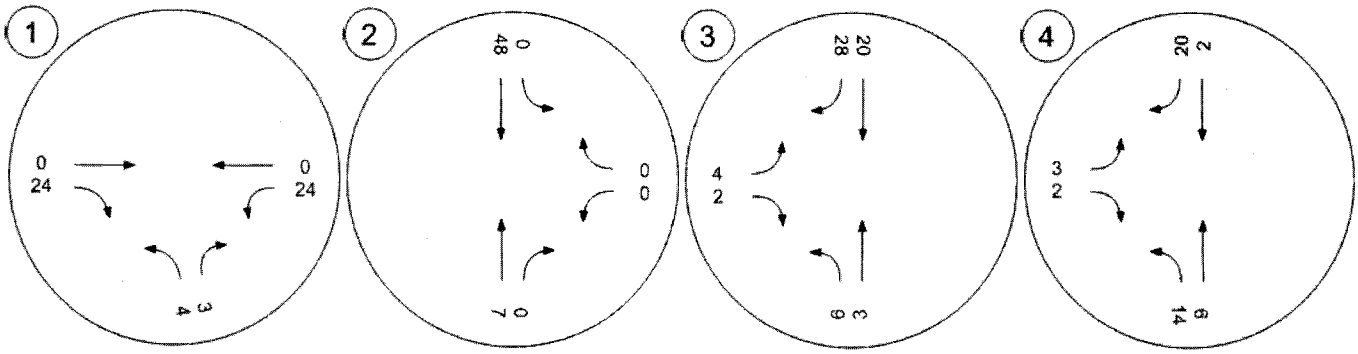


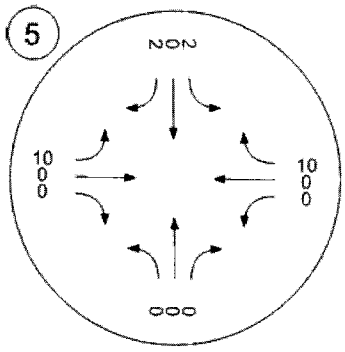




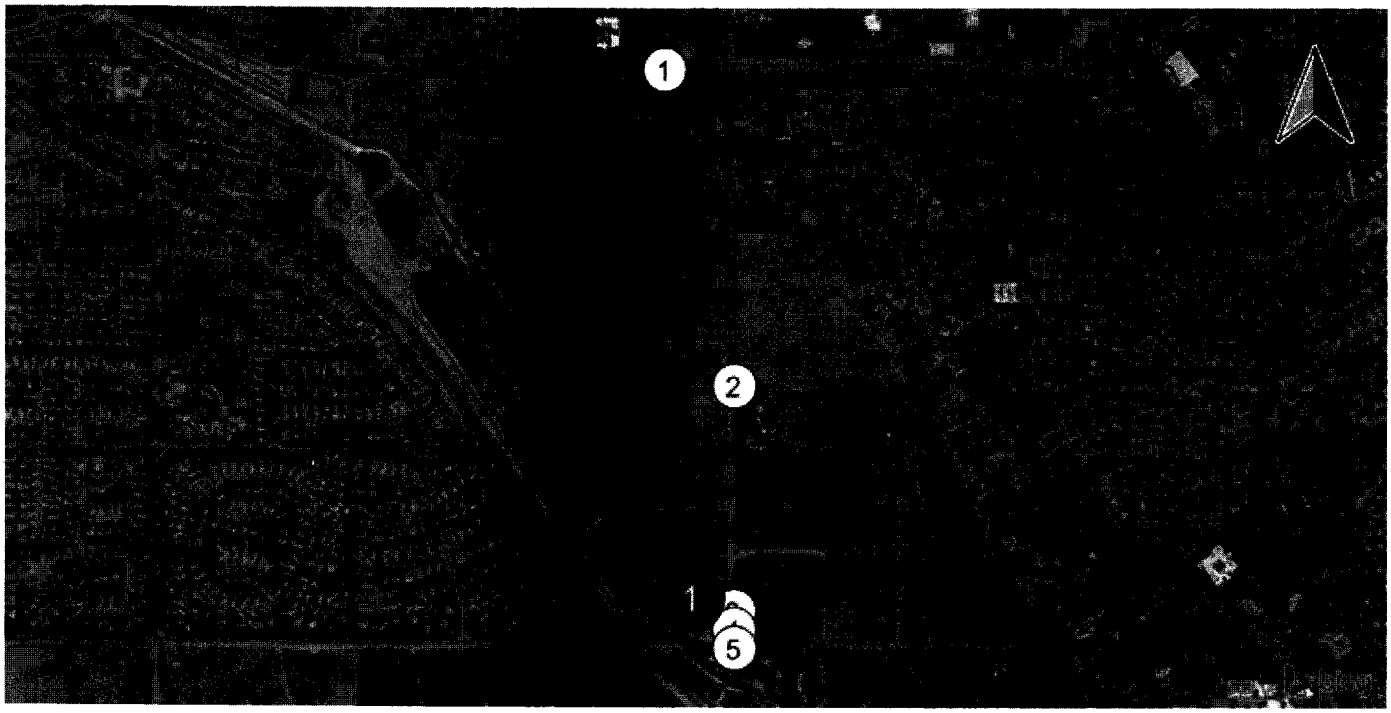
Fair Share - Fair Share Volumes - Zone 1: Project

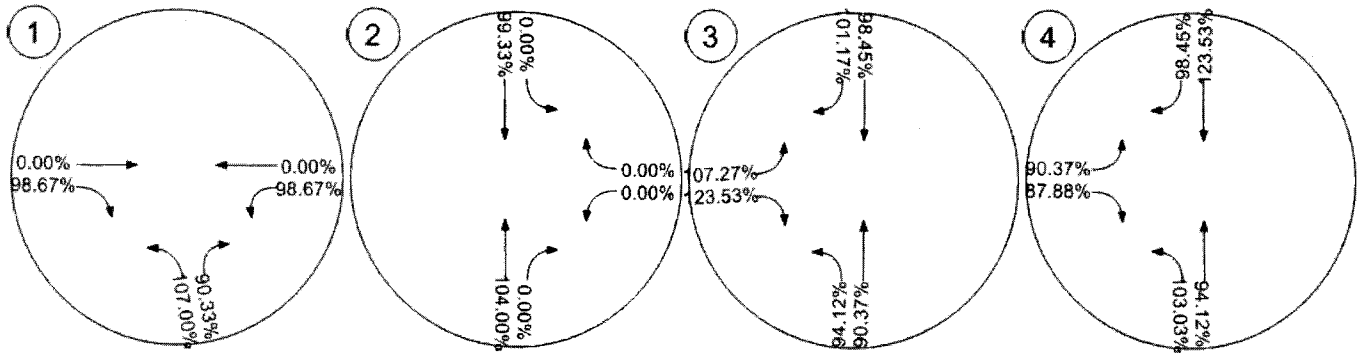


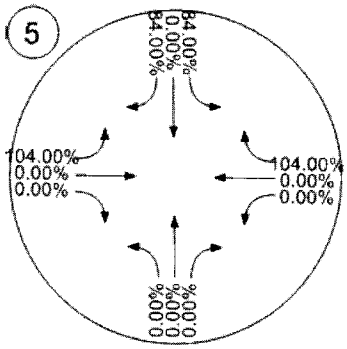




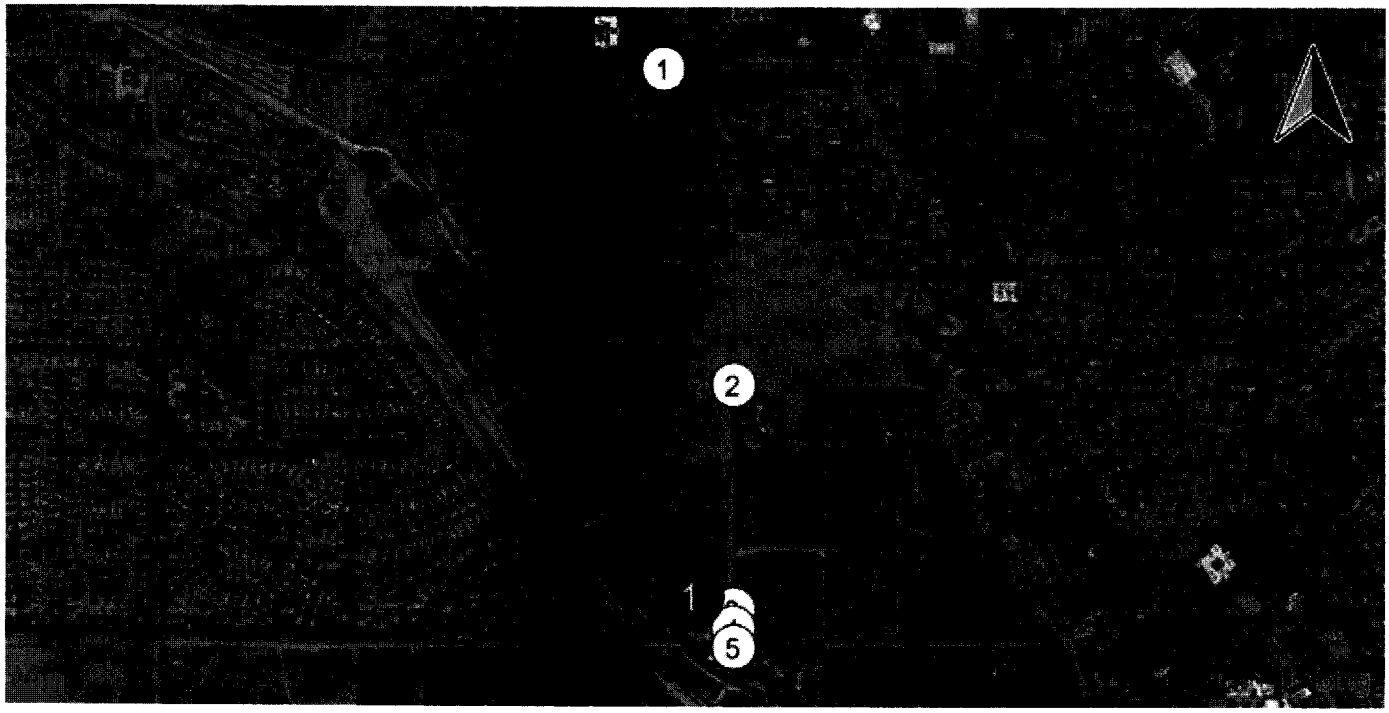
Fair Share - Fair Share % of Net New Site - Zone 1: Project

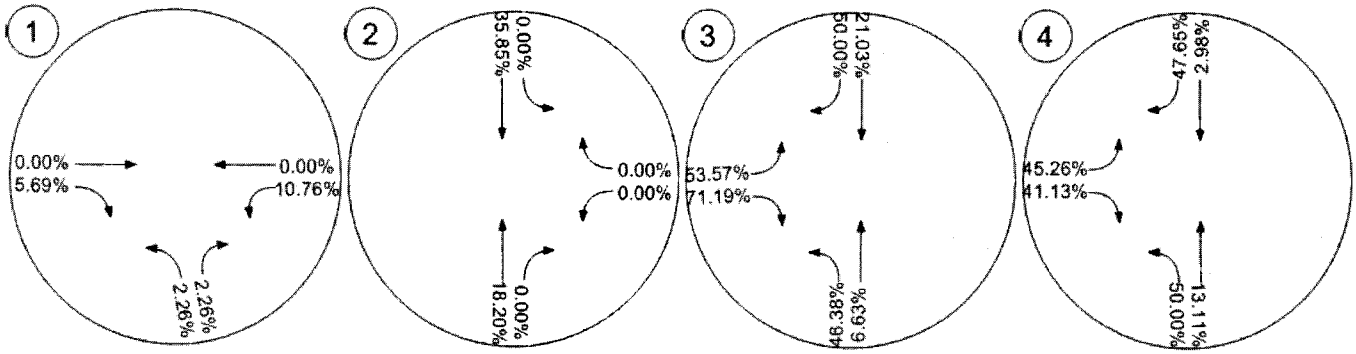


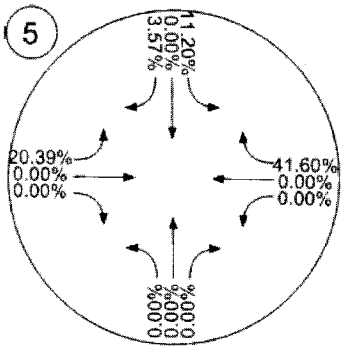




Fair Share - Fair Share % of Total Analysis - Zone 1: Project







Kunzman Associates, Inc.

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KUNZMAN ASSOCIATES, INC.
OVER 40 YEARS OF EXCELLENT SERVICE

January 6, 2017

Mr. Shakil Patel
SHAKIL PATEL & ASSOCIATES
25982 Hinkley Street
Loma Linda, CA 92354

Dear Mr. Patel:

INTRODUCTION

Kunzman Associates, Inc. is pleased to submit this letter in response to the e-mail sent from the City of Redlands Traffic Engineer, Mr. Don Young, dated October 12, regarding the Islamic Community Center of Redlands in the County of San Bernardino.

COMMENT 1: Daily trip generation values appear to be self reported without a comparison to similar community centers or discussion regarding the validity of the volumes.

RESPONSE TO COMMENT 1: The project trip generation is calculated based on information provided by the applicant. There are three levels of activity at the facility. These activity levels are daily operations (365 days a year), Special Events (30 days a year), and Major Special Events (2 days a year). The trip generation data, calculation methodology, and assumptions have been approved by the County of San Bernardino Traffic Engineer. The report is based on the Special Events trip generation because it is higher than Daily Operations. Major Special Events only occur two days per year.

COMMENT 2: Special events trip generation will cause a significant impact on those days when the events happen. Special events are excluded from the analysis but there is no explanation as to why. Will there be a CUP requirement for additional traffic control measures on those days?

RESPONSE TO COMMENT 2: The County of San Bernardino requires the church to pull permits for the Major Special Events that will occur two days per year.

COMMENT 3: The primary concern I have is safety related due to the geometric design of the Nevada/San Timoteo intersection. Northbound drivers on Nevada cannot see (or will chose not to look) for traffic traveling westbound on San Timoteo Canyon. Would the redesign of Nevada so it becomes a T intersection be appropriate? Or installation of a load activated signal (always green for San Timoteo unless northbound Nevada traffic activates it) similar to Reche Vista/Reche Canyon Road? Widening of Nevada within 150' of the intersection should be considered.

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RESPONSE TO COMMENT 3: As stated above, there is the potential to widen the south leg of the San Timoteo Canyon Road/Nevada Street and San Timoteo Canyon Road intersection and provide a northbound left and right, a southbound through and left, and a westbound free right and left. The existing northbound through movement at this intersection is 25 vehicles during the Friday Mid-day peak hour and 22 vehicles during the Friday Evening Peak Hour. The project is projected to add approximately 7 northbound through vehicles during the Friday Mid-day peak hour and add approximately 7 northbound vehicles during the Friday Evening Peak Hour. The increase in traffic is insignificant and the total of existing plus project traffic does not appear to justify these extensive improvements of the existing intersection.

As stated above, there is a potential to install a traffic signal at the intersection of San Timoteo Canyon Road/Nevada Street and San Timoteo Canyon Road. The existing northbound through movement at this intersection is 25 vehicles during the Friday Mid-day peak hour and 22 vehicles during the Friday Evening Peak Hour. The project is projected to add approximately 7 northbound through vehicles during the Friday Mid-day peak hour and add approximately 7 northbound vehicles during the Friday Evening Peak Hour. The increase in traffic is insignificant and the total of existing plus project traffic does not meet the minimum requirements for warranting a traffic signal.

Sight distance has been analyzed and attached to this response to comments letter. It appears that there are no site distance issues at the intersection of San Timoteo Canyon Road/Nevada Street and San Timoteo Canyon Road. The posted speed limit is 45 miles per hour and the advisory speed limit is posted at 15 miles per hour along San Timoteo Canyon Road at the intersection of Nevada Street. The required corner sight distance is 495 feet and the required decision site distance is 675 feet. Based on the posted speed limit and the sight distance requirements, adequate sight distance is provided at the San Timoteo Canyon Road/Nevada Street and San Timoteo Canyon Road intersection (see Figure 1).

It should be noted that there is a potential to cul-de-sac Nevada Street south of San Timoteo Canyon Road. This would have little negative effect on the traffic patterns in the area and it would eliminate the existing and future vehicle conflicts at the intersection of San Timoteo Canyon Road/Nevada Street and San Timoteo Canyon Road.

COMMENT 4: The Off-Site Improvements recommended on page 46 of the Traffic Study do not adequately address the impact this project will have on the need for area improvements. *"Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees"* is a generic traffic study mitigation recommendation that does not address the cumulative impacts in the immediate area of this project.

RESPONSE TO COMMENT 4: Based on the traffic impact analysis, the project is not projected to significantly impact the study area. The study area intersections currently operate at an acceptable Levels of Service and they are projected to continue to operate at acceptable Levels of Service with the proposed project in Year 2040 with project.

CONCLUSION

Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 973-8383.

Sincerely,

KUNZMAN ASSOCIATES , INC.

Robert Kunzman
Principal Associate

JN 6416

Figure 1
Sight Distance Analysis

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