

## Appendices

### **Appendix E      Traffic Study**

## Appendices

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June 2020 | Traffic Impact Analysis

# WILSON MIDDLE SCHOOL MULTI-PURPOSE FIELD PROJECT TRAFFIC IMPACT ANALYSIS

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# 1. Introduction

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## 1.1 PROJECT OVERVIEW

The City of Glendale Community Services and Parks Department (City or Glendale) has partnered with the Glendale Unified School District (GUSD) to develop a multipurpose field with sports field lighting on the campus of Wilson Middle School (Wilson MS) at 1221 Monterey Road in the northeast part of Glendale. Figure 1, *Local Vicinity*, and Figure 2, *Aerial Photograph*, depict the area surrounding the school.

Figure 3, *Site Plan*, shows the proposed Project improvements. The existing grass field and paved basketball courts will be redeveloped with a joint-use multipurpose field with soccer and lacrosse markings, a surrounding rubberized surface jogging track, and sports field lighting. The Project site is currently utilized by Wilson MS for physical education purposes and school sports programs. In addition to Wilson MS uses, outside sporting groups have been individually permitted by Glendale Unified School District (GUSD) to use the practice field on weekends generally between the hours of 8:30 a.m. and 6:00 p.m. on Saturdays and 8:00 a.m. and 6:00 p.m. on Sundays.

The proposed field lighting is necessary for evening use on both weeknights and extend use of the field into evening hours on the weekends. The proposed Project will also include the addition of fitness equipment, a perimeter security fence, seating, restroom and storage/maintenance building(s), walkways, landscaping, irrigation, and regrading of the existing basketball court surface. No permanent seating or bleachers are proposed. Wilson Middle School will access the proposed field during school hours, and the City's use of the proposed field would be from 5:00 p.m. to 10:00 p.m. Monday through Friday, and 8:00 a.m. to 10:00 p.m. on Saturday and Sunday.

The Wilson MS Multipurpose Field Project (proposed Project) would disturb approximately 3.85 acres—consisting of the existing athletic field and basketball courts—along the northern portion of the Wilson MS campus and would not impact other areas of the campus. This 3.85 acres will be referred to as the “project site.” The Wilson MS campus is in a medium-density residential community and bordered by Glenoaks Boulevard to the north, Monterey Road to the south, Verdugo Road to the east, and Adams Street to west. The project site is currently used by Wilson MS for physical education purposes and middle school sports programs.

The proposed Project would not expand the school's enrollment capacity, but is expected to increase traffic and parking demand around the project site due to new public use and city programming on weeknights. Regional access to the Wilson MS campus is State Route (SR) 134, approximately 0.13 mile to the south. Main vehicular access to the Wilson MS campus is provided along Monterey Road, including the student drop-off/pick-up zone and faculty/visitor parking located along Monterey Road. Limited parking is provided along the western perimeter of the campus, adjacent the classroom buildings located west of the project site. Street parking is available on Verdugo Road, Monterey Road and Adams Street. The proposed Project would make use of existing street and on-site parking, and no change in site access or parking would occur.

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### 1.2 METHODOLOGY

This study was prepared in conformance with the Los Angeles County Congestion Management Plan (CMP) Transportation Impact Analysis Guidelines, City of Glendale's General Plan Circulation Element LOS standards, and based on the anticipated level of traffic from full-capacity athletic events at the project site. A memorandum of understanding (MOU or scoping agreement) was submitted to the City of Glendale Public Works Department on May 12, 2017. The MOU included the methodologies that would be used in the project traffic impact analysis, including trip generation estimates, trip distribution, a list of study area intersections to be evaluated, identification of an ambient growth rate and scenarios to be evaluated, criteria to evaluate levels of service, and thresholds of significance. The City of Glendale traffic engineer reviewed the memorandum of understanding and provided comments on May 19, 2017 (see Appendix A). This traffic impact analysis is consistent with the methodologies and assumptions in the MOU. In 2019, changes of the lane configuration at one of the study intersections occurred. The City of Glendale traffic engineer requested this study be updated to reflect these lane changes and to update the study with more recent traffic and parking counts taken in the fall of 2019. As a result, this study was updated in December 2019 with new traffic counts, parking counts, and cumulative projects.

#### 1.2.1 Intersection LOS

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F, that is, from the best traffic conditions (uncongested, free-flowing conditions) to the worst (total breakdown with stop-and-go operation). Table 1 describes the level of service concept and the operating conditions expected under each level of service for signalized and unsignalized intersections.

The Intersection Capacity Utilization (ICU) method is used to calculate levels of service (LOS) for signalized intersections in the City of Glendale. The ICU signalized intersection methodology presents LOS in terms of volume to capacity ratio. Signalized intersections under the California Department of Transportation (Caltrans) jurisdiction are evaluated using delay-based methodology consistent with the procedures outlined in the Highway Capacity Manual 6<sup>th</sup> Edition (HCM)

For unsignalized intersections, the Highway Capacity Manual (HCM) methodology is used to calculate LOS. The HCM unsignalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle). Vistro software was used to determine the LOS at the study area intersections.

The intersection LOS analysis uses traffic volumes observed during the peak hour conditions. The peak hours selected for the analysis are the highest volumes that occur in four consecutive 15-minute periods from 4:00 PM to 6:00 PM on weekday evenings.



## 1. Introduction

**Table 1 Intersection Level of Service Descriptions**

LOS	Description	ICU Methodology (Signalized)	HCM Methodology (Signalized)	HCM Methodology (Unsignalized)
		V/C Ratio	Delay (seconds)	Delay (seconds)
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.	0.000–0.600	≤ 10.00	≤ 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.	0.601–0.700	> 10 – 20	>10 to 15
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.	0.701–0.800	> 20 – 35	>15 to 25
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.	0.801–0.900	> 35 – 55	>25 to 35
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.	0.901–1.000	> 55 - 80	>35 to 50
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.	Over 1.000	> 80	>50

Source: HCM 6<sup>th</sup> Edition, and 2010 Congestion Management Program for Los Angeles County.

### 1.2.2 Neighborhood Street Segment Analysis

The street segment level of service analysis was conducted by calculating the daily volume-to-capacity (V/C) ratio for each study roadway segment. Traffic volumes were calculated based on turn movement counts at intersections converted to 2-way roadway traffic volumes and applying a typical a peak to daily factor of 10. The environmental capacity for each roadway segment was obtained from the City of Glendale Circulation Plan according to the functional roadway classification and their characteristics. The LOS letter grade was assigned using the corresponding V/C values shown in Table 1.

### 1.2.3 Parking Analysis

A parking analysis was prepared to review the parking conditions in the vicinity of the school and to estimate the parking impacts from the project. Parking counts were taken at the school parking lots and along 26 roadway segments on a weekday evening and on a Saturday.

Parking demand was based on published parking generation rates for a soccer complex. To calculate the expected project-related parking demand, the ITE Parking Generation rates for soccer complexes were

## 1. Introduction

multiplied by the anticipated number of fields. Further details are provided in the Parking Analysis included in Section 5 of this report.

### 1.2.4 Thresholds of Significance

The study area includes intersections under the jurisdictions of the City of Glendale, and the California Department of Transportation (Caltrans).

#### City of Glendale Intersections

According to the City's Circulation Element, the City evaluates zoning in the commercial and industrial areas of the City and establishes floor area ratios based on the availability of existing or proposed street capacity to accommodate future growth. A minimum desired level of service is "D" during afternoon peak hours, except at intersections along major arterials, where a minimum desired level of service is "E".

In the City of Glendale, impacts at signalized intersections are considered significant if the project-related increase in the volume-to-capacity (V/C) ratio equals or exceeds 0.02 at intersections that have LOS D or worse. For unsignalized intersections, the impact is considered significant if the project-related increase in the delay equals or exceeds 3 seconds at intersections that have LOS D, or worse.

#### Caltrans Intersections

Caltrans traffic impact analysis guidelines do not explicitly define a significant impact in terms of existing level of service and change in that level of service. For intersections under Caltrans' jurisdiction, a significant impact would occur at a signalized study intersection when the project-related traffic causes:

- An intersection to degrade from an acceptable LOS to an unacceptable LOS<sup>1</sup>; or
- Any increase in delay for intersections already operating at an unacceptable LOS.

#### Neighborhood Street Segments

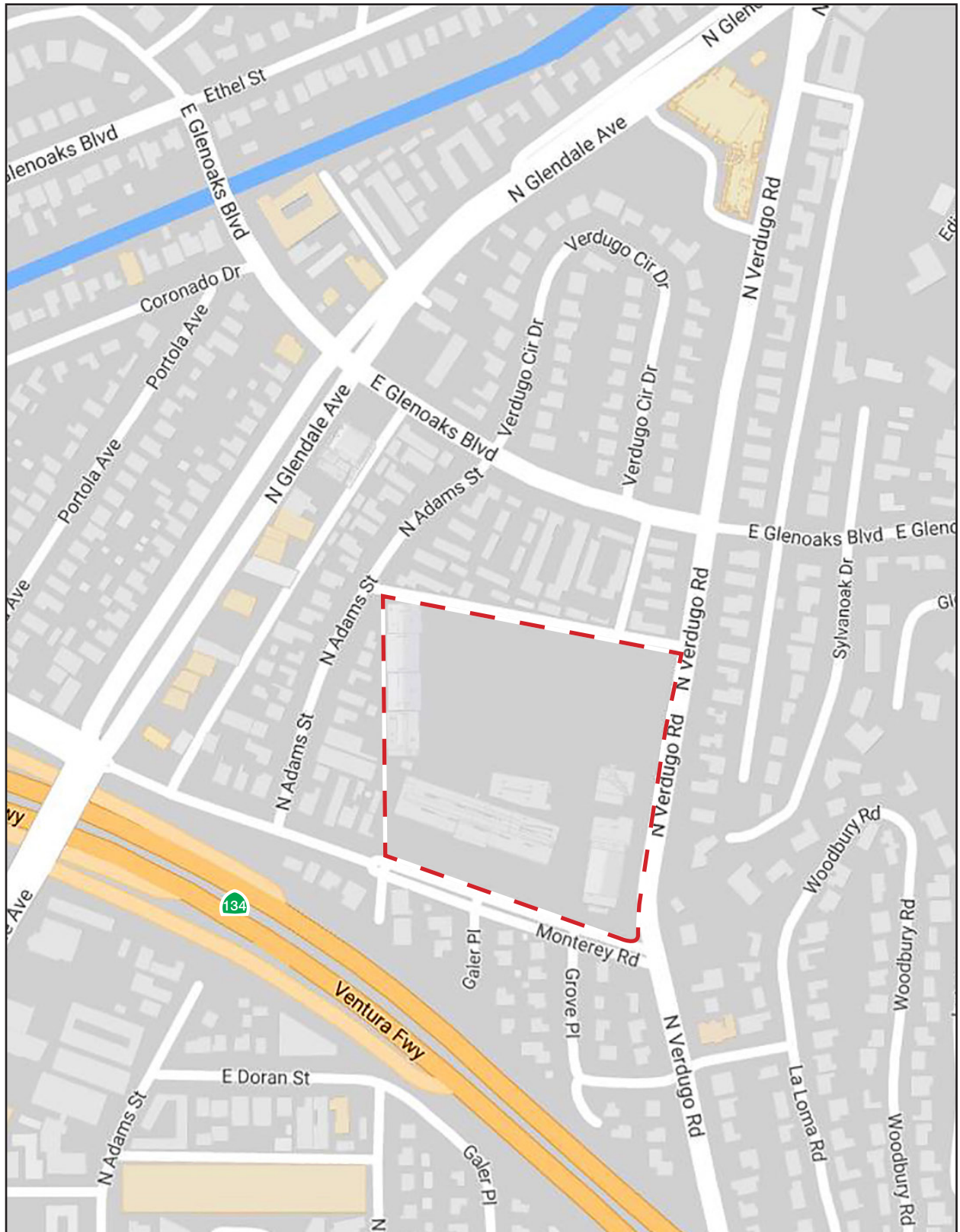
As discussed above, LOS D is the minimum desired level of service. The City of Glendale Circulation Element identifies two conditions that typically apply when evaluating local collector street impacts:

- If the addition of Project average daily trips (ADTs) to a residential street does not cause the street's capacity to be exceeded (regardless of how great an increase), the Project would result in no impacts.
- If the street's capacity is exceeded with or without the Project, no impacts occur if the Project increases the existing conditions ADT by less than 10 percent.

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<sup>1</sup> The Caltrans Transportation Concept Report states that Caltrans strives for LOS C/D, but generally accepts up to LOS E in urban environments.

Figure 1 - Local Vicinity



--- Project Site

0 300  
Scale (Feet)



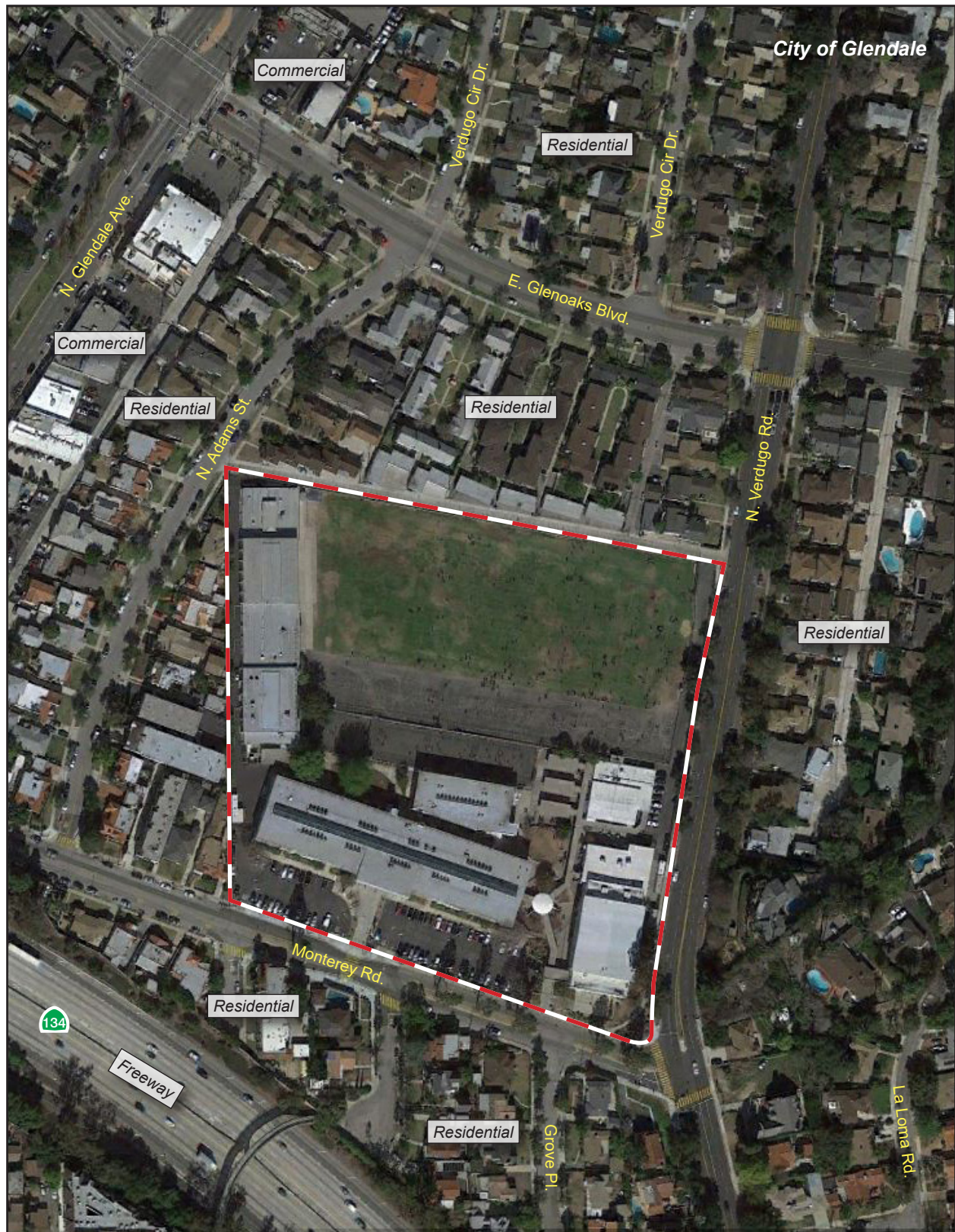
Source: Google Maps, 2017

## 1. Introduction

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Figure 2 - Aerial Photograph



— Project Site

Source: Google Maps, 2017

0 300  
Scale (Feet)



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## 1. Introduction

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Figure 3 - Site Plan



— Project Site

⊗ Lighting Locations (6)

0 125  
Scale (Feet)



Source: Google Earth Pro, 2017

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## 1. Introduction

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## 2. Existing Conditions

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### 2.1 STUDY AREA ROADWAY NETWORK

The study-area roadways discussed below are based on the City of Glendale General Plan Circulation Element (1998). Exhibit 2-2 of the Circulation Plan, Street Classifications and Characteristics, shows the roadways and classifications in the city. The following describes the surrounding street system based on field observations and according to the roadway functional classifications in the City of Glendale General Plan Circulation Element, shown on Figure 4, *City of Glendale Street Classification Map*.

#### 2.1.1 Surrounding Street System

**State Route 134 (SR-134).** SR-134, also known as Ventura Freeway is a ten-lane east-west freeway that provides regional access to the project site via the on/off ramps at Monterrey Avenue and Glendale Avenue. SR-134 is a part of the Congestion Management Program (CMP) highway network.

**Glendale Avenue.** This north-south roadway has 6 lanes at the segment nearest to the project site. Glendale Avenue is classified as a Major Arterial in the City's General Plan Circulation Element.

**Glenoaks Boulevard.** This east-west roadway has 2 lanes at the segment nearest to the project site. In the vicinity of the site it is classified as a Minor Arterial.

**Monterey Road.** This east-west roadway is the southern boundary of the Wilson MS property, and provides the primary site access to the campus. At the segment nearest to the project site, this roadway varies from 1 to 2 lanes in each direction. Between Verdugo and Glendale Avenue it is classified as an Urban Collector.

**Verdugo Road.** This north-south roadway is the eastern boundary of Wilson MS. This roadway has 4 lanes at the segment nearest to the project site, and is classified as a Major Arterial.

**Adams Street.** This north-south roadway has 2 lanes at the segment nearest to the project site. It is classified as a Local Street.

**Verdugo Circle Drive.** This short 2-lane Local Street extends from Adams Street, and creates a loop road north of Glenoaks Boulevard that provides access to residences.

#### 2.1.2 Study Area Intersections

The study area was defined based on the calculated project trip generation and distribution and in consultation with City of Glendale Transportation Engineering Division staff. The following eight intersections are analyzed in this study. All but two intersections are under the City of Glendale jurisdiction. The two intersections along

## 2. Existing Conditions

the Ventura Freeway Ramps at Monterey Road and Glendale Avenue are under Caltrans' jurisdiction. The following intersections were analyzed:

1. WB Ventura Freeway (SR-134) Ramps at Monterey Road
2. Glendale Avenue at EB Ventura Freeway (SR-134) Ramps
3. Glendale Avenue at Monterey Road
4. Glendale Avenue at Glenoaks Boulevard
5. Adams Street at Monterey Road
6. Adams Street at Glenoaks Boulevard
7. Verdugo Road at Monterey Road
8. Verdugo Road at Glenoaks Boulevard

Figure 5, *Study Area Roadway Network and Intersections*, shows the study area intersections and the number of through lanes for roadways for the study area.

### 2.1.3 Neighborhood Street Segments

Neighborhood street segment analysis has been conducted on the following roadway segments to evaluate environmental capacity:

1. Monterey Road between Glendale Avenue and Verdugo Road
2. Adams Street between Glenoaks Boulevard and Monterey Road

### 2.1.4 Study Area Parking Locations

In addition to the on-site parking lot off Monterey Road, off-site parking is available on public streets in the vicinity of the school. The parking demand along the following 26 roadway segments are analyzed in this study:

1. Briarwood Lane north of Glenoaks Boulevard
2. Glenoaks Boulevard from Briarwood Lane to Sylvanoak Drive
3. Glenoaks Boulevard from Sylvanoak Drive to Glendale Avenue
4. Glenvista Drive south of Glenoaks Boulevard
5. Glenvista Drive north of Glenoaks Boulevard
6. Sylvanoak Drive south of Glenoaks Boulevard
7. Sylvanoak Drive north of Glenoaks Boulevard
8. Verdugo Road from Glendale Avenue to south edge of lot
9. Verdugo Circle Drive north of Glenoaks Boulevard
10. Glendale Avenue from Verdugo Road to Monterey Road
11. Monterey Road from Glendale Avenue to Cordova Avenue
12. Monterey Road from Verdugo Road to Glendale Avenue

## 2. Existing Conditions

13. Woodbury Road from Grove Place to La Loma Road
14. Grove Place south of Monterey Road
15. Galer Place south of Monterey Road
16. Naranja Drive south of Monterey Road
17. Adams Street from Glenoaks Boulevard to Monterey Road
18. Portola Avenue from Monterey Road to Coronado Drive
19. Glenoaks Boulevard from Coronado Drive to Glendale Avenue
20. Doran Street from Glendale Avenue to Adams Street (accessible by bridge over SR-134)
21. Adams Street north of Lexington Drive (accessible by bridge over SR-134)
22. Doran Street from Adams Street to Galer Place (accessible by bridge over SR-134)
23. Naranja Drive from Doran Street to Lexington Drive (accessible by bridge over SR-134)
24. Galer Place from Naranja Drive to Richard Place (accessible by bridge over SR-134)
25. Richard Place from Naranja Drive to Grove Place (accessible by bridge over SR-134)
26. Grove Place north of Lexington Drive (accessible by bridge over SR-134)

Figure 6, *Off-Site Parking Locations*, shows the study area parking locations evaluated in this study.

### 2.2 EXISTING OPERATIONS

Currently, the project site is used on the weekends by American Youth Soccer Organization (AYSO) from 8:00 a.m. to 6:00 p.m. on Saturdays, and 10:00 a.m. to 6:00 p.m. on Sundays. The proposed Project would not increase capacity of the existing Wilson MS field for AYSO use, rather, the proposed Project would allow for evening uses of the field. As such, the proposed Project would not change the number of vehicle trips during the Saturday mid-day peak period. Therefore, and the project would not add trips during the Saturday midday peak hours and is not further evaluated in this analysis. Parking counts were conducted on a typical Saturday to determine if existing use of the fields on weekends currently cause a shortage of parking in the vicinity of the school during the daytime, and if the parking supply can accommodate a potential increase in parking demand due to the project in the evenings on weekdays.

Turn movement volumes for weekday PM peak hour were collected at all the study area intersections. These counts were obtained on Tuesday, October 8, 2019. The turn movement volumes for the study area intersections are provided in Appendix B. Additionally, parking counts were analyzed at the school parking lots and along all off-site parking locations. Parking counts were taken in 30-minute intervals on Saturday, October 5, 2019, 8 AM to 10 PM, and on Tuesday October 8, between 5 PM to 10 PM. All counts occurred on typical weekdays while the school was in session, in the AYSO soccer fall season, and outside holidays and major events.

## 2. Existing Conditions

### 2.2.1 Existing Conditions Intersection Analysis

The weekday PM peak hour intersection operations analysis results for all study area intersections are summarized in Table 2. Intersection turn movement volumes and LOS worksheets for existing conditions are included in Appendix C.

**Table 2 Existing Intersection Levels of Service, Weekday PM Peak Hour**

Intersection	Intersection Control	Acceptable LOS	Weekday PM Peak Hour	
			ICU (V/C) or Average Delay (sec/veh)	LOS
1. WB Ventura Freeway Ramps at Monterey Road	Signal	E	0.849	D
2. Glendale Avenue at EB Ventura Freeway Ramps	Signal	E	0.675	B
3. Glendale Avenue at Monterey Road	Signal	E	0.876	D
4. Glendale Avenue at Glenoaks Boulevard	Signal	E	0.757	C
5. Adams Street at Monterey Road	CCS	D	14.28	B
6. Adams Street at Glenoaks Boulevard	CCS	D	12.79	B
7. Verdugo Road at Monterey Road	Signal	E	0.614	B
8. Verdugo Road at Glenoaks Boulevard	Signal	E	0.511	A

Notes: CCS = Cross-Street Stop.  
LOS worksheets are included in Appendix C.

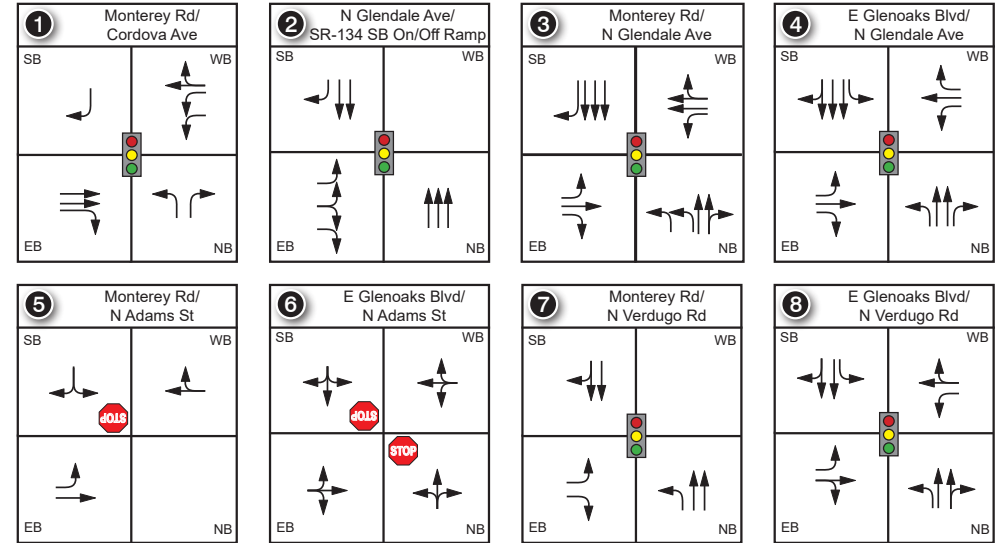
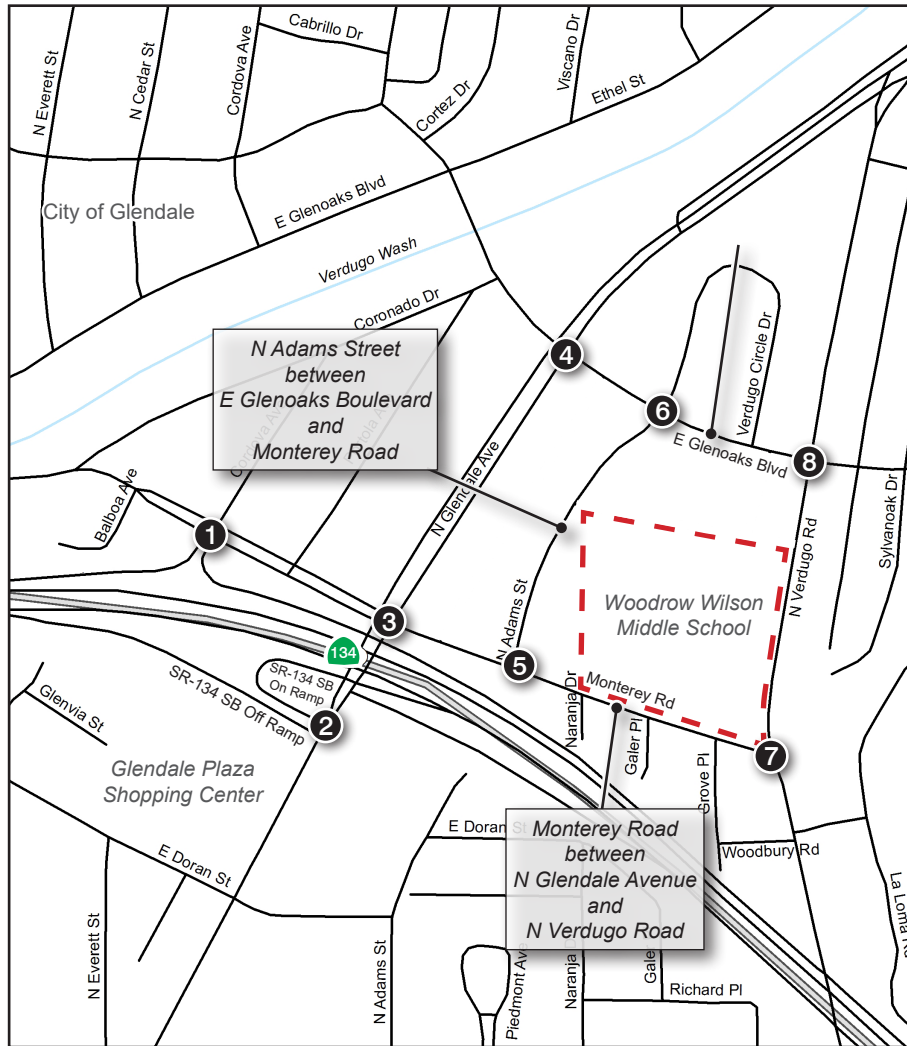
For all study intersections, a minimum desired level of service is “D” during afternoon peak hours is acceptable, except at intersections along major arterials (Glendale Avenue, Verdugo Road), where a minimum desired level of service is “E” is acceptable. As shown on Table 2, all study intersections currently operate at acceptable LOS during the Weekday PM Peak hour.



## 2. Existing Conditions

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Figure 5 - Study Area Roadway Network and Intersections



--- Project Boundary

# Study Intersections (8)

STOP One-Way Stop Intersection

Traffic Signal

0 800  
Scale (Feet)



Source: ESRI, 2017

## 2. Existing Conditions

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## 2. Existing Conditions

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## 2. Existing Conditions

### 2.2.2 Neighborhood Street Segment Analysis

A neighborhood street segment analysis for existing conditions along two study area roadways is presented in Table 3. The daily volumes were calculated based on the intersection PM peak hour turn movement volumes using a peak to daily factor of 10. As shown in Table 3, all study segments operate with volumes well below their daily capacity, with a corresponding LOS A and B, which are acceptable.

**Table 3 Existing Street Segment Volumes**

Street Segment	Functional Classification	Street Layout	Environmental Capacity (vehicles/day) <sup>1</sup>	Day	ADT	V/C	LOS
Monterey Road (Glendale Av to Verdugo Rd)	Urban Collector	2U	10,000	Weekday	6,020	0.602	B
Adams Street (Glenoaks Blvd to Monterey Rd)	Local	2D	2,500	Weekday	560	0.224	A

<sup>1</sup> 2U= 2-lane undivided road, 2D= 2-lane divided road.

<sup>2</sup> Functional Classifications and Environmental Capacity daily volumes obtained from the City of Glendale General Plan Circulation Element.

### 2.2.3 Existing Internal Circulation

Wilson Middle School has two parking lots along Monterey Road. The two parking lots are separated by a walkway that leads to a crosswalk that crosses Monterey Road. Each parking lot has two entrances/exits that allow two-way flow. School staff controls onsite circulation with traffic cones, usually restricting the parking lots to one-way circulation (i.e., enter near the crosswalk, exit on the opposite end), which facilitates onsite circulation, especially during peak periods.

### 2.2.4 Existing Parking Options Serving the Project Site

Parking supply was determined by reviewing the linear feet of curb at each road assuming 25 feet per vehicle. Driveways and areas where parking is prohibited such as red curbs were not included as parking supply. Parking counts were taken on weekday evenings from 5 to 10 PM in 30-minute intervals and between 8 AM to 10 PM on Saturdays. The parking counts were taken at the school parking lots and along both sides of the previously mentioned off-site parking locations, as shown in Figure 6. The parking survey results are included in Appendix D.

Table 4 shows the parking occupancy on weekday and on Saturdays at the hours of lowest occupancy and highest occupancy. On weekdays, the period in which the highest overall occupancy was observed started at 10 PM, and the lowest occupancy period started at 5PM. On a Saturday, the period in which the highest overall occupancy was observed started at 8:30 AM, and the lowest occupancy period started at 6:00 PM. As shown on Table 4 the overall parking occupancy ranges from 59 percent to 75 percent. The school lot has plenty of parking available on weekdays after 5PM and on weekends. In addition, there is unused parking available in several public streets in the vicinity of the school.

## 2. Existing Conditions

**Table 4 Existing Parking Occupancy**

Parking Locations		Weekday		Saturday	
		Highest Occupancy (10PM)	Lowest Occupancy (5PM)	Highest Occupancy (6 PM)	Lowest Occupancy (12:30 PM)
1	Briarwood Lane north of Glenoaks Boulevard	36%	45%	36%	64%
2	Glenoaks Boulevard from Briarwood Lane to Sylvanoak Drive	20%	7%	50%	20%
3	Glenoaks Boulevard from Sylvanoak Drive to Glendale Avenue	84%	57%	93%	80%
4	Glenvista Drive south of Glenoaks Boulevard	13%	13%	17%	17%
5	Glenvista Drive north of Glenoaks Boulevard	43%	21%	64%	57%
6	Sylvanoak Drive south of Glenoaks Boulevard	35%	30%	39%	39%
7	Sylvanoak Drive north of Glenoaks Boulevard	53%	32%	42%	47%
8	Verdugo Road from Glendale Avenue to south edge of lot	94%	66%	99%	87%
9	Verdugo Circle Drive north of Glenoaks Boulevard	74%	62%	76%	58%
10	Glendale Avenue from Verdugo Road to Monterey Road	43%	37%	51%	46%
11	Monterey Road from Glendale Avenue to Cordova Avenue	40%	20%	30%	40%
12	Monterey Road from Verdugo Road to Glendale Avenue	40%	40%	44%	40%
13	Woodbury Road from Grove Place to Woodbury Road	72%	61%	72%	94%
14	Grove Place south of Monterey Road	50%	38%	50%	38%
15	Galer Place south of Monterey Road	53%	35%	18%	35%
16	Naranja Drive south of Monterey Road	71%	14%	71%	29%
17	Adams Street from Glenoaks Boulevard to Monterey Road	97%	71%	97%	92%
18	Portola Avenue from Monterey Road to Cordova Avenue	100%	69%	83%	87%
19	Glenoaks Boulevard from Cordova Avenue to Glendale Avenue	100%	67%	83%	83%
20	Doran Street from Glendale Avenue to Adams Street	80%	77%	80%	83%
21	Adams Street north of Lexington Drive	88%	82%	89%	92%
22	Doran Street from Adams Street to Galer Place	97%	61%	76%	74%
23	Naranja Drive from Doran Street to Lexington Drive	96%	78%	98%	76%
24	Galer Place from Naranja Drive to Richard Place	34%	13%	21%	23%
25	Richard Place from Naranja Drive to Grove Place	87%	55%	74%	87%
26	Grove Place north of Lexington Drive	83%	58%	63%	92%
27	School Campus Lot	4%	47%	42%	7%
Overall Occupancy		71%	71%	59%	75%

## 3. Multipurpose Field Traffic Analysis

An analysis of potential traffic impacts are provided for these scenarios:

- Existing With Project
- Opening Year Without project
- Opening Year With project

The following presents the trip generation and trip distribution from the project, and presents the results of the impact analysis to study intersections and roadway segments.

### 3.1 TRIP GENERATION

The proposed Project would not expand the school's enrollment capacity, but is expected to increase traffic and parking demand around the project site due to new public use and city programming on weekday evenings. Currently, the project site is used on the weekends by AYSO from 8:00 a.m. to 6:00 p.m. on Saturdays, and 10:00 a.m. to 6:00 p.m. on Sundays. The proposed Project would not increase capacity of the existing Wilson MS field for AYSO use, rather, the proposed Project would allow for evening uses of the field. As such, the proposed Project would not change the number of vehicle trips during the Saturday mid-day peak period. Therefore, and the proposed Project would not add trips during the Saturday midday peak hours and it is not further evaluated in this analysis. The trip generation rates for soccer fields during the weekday AM and PM peak hours were obtained from the latest version of the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10<sup>th</sup> Edition. The ITE Trip Generation Manual is the most widely recognized resource for estimating the number of trips generated by a land use or project type. The manual provides peak hour and daily rates on weekdays under land use code 488, Soccer Complex. Table 5 summarizes the trip generation rates from the ITE manual and presents both the average rates and the high end of the statistical sample for each period.

**Table 5** ITE Trip Generation Rates for Soccer Complex

Rate Type	Weekday						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Average Rate	71.33	0.60	0.39	0.99	10.84	5.59	16.43
Highest Rate	90.81	1.07	0.81	1.88	16.67	8.20	24.88

Notes: Trip Generation rates per field.

Trip generation rates are based on the ITE Trip Generation Manual (10th edition) for the Soccer Complex Land Use (ITE Code 488).

To calculate the expected project-related trip generation, the rates shown above are multiplied by the anticipated number of fields. The proposed Project includes development of two fields, and estimated project-related trips are shown in Table 6. Using the average rates, the project would generate 2 trips in the AM peak hour and 33

### 3. Multipurpose Field Traffic Analysis

trips in the PM peak hour. Using the highest rates, the project would generate 4 trips in the AM peak hour and 49 trips in the PM peak hour. As shown in Table 7, the project would generate a negligible number of trips in the weekday AM peak hour. In addition, public use of the fields would not be allowed on weekdays in the AM peak hour. Therefore, the AM peak hour traffic will not be further evaluated in this analysis.

**Table 6 ITE Trip Generation Estimates for Soccer Complex**

Rate Type	Weekday						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Average Rate	143	1	1	2	22	11	33
Highest Rate	182	2	2	4	33	16	49

Trip generation rates for peak hour of adjacent streets, based on Soccer Complex Land Use (ITE Code 488) per the ITE Trip Generation Manual, 10th edition.

The sample size to support these rates is relatively small—less than 10 samples. Therefore, PlaceWorks also reviewed the proposed use of the fields to calculate vehicular trips based on estimates for players, spectators, and supporting personnel (coaches, referees, etc.). PlaceWorks consulted with the City of Glendale Parks and Recreation Department to obtain anticipated usage estimates. To verify the trip generation based on ITE trip rates, trip generation was also calculated based on usage estimates assuming a number of players, coaches, and referees at the soccer fields for adult soccer and youth soccer. The estimates were provided for both adult and youth because of different ridership characteristics and because they have different team sizes. Table 7 shows the trip generation rates per player/coach/referee, and Table 8 shows the estimated project trip generation for the proposed 2 fields based on usage estimates. It should be noted that under the usage estimate methodology, a 20 percent trip reduction was applied to account for carpool and walk/bike/transit modes. The project trip generation based on usage estimates is highest for youth games. As shown on Table 8, the highest trip generation would occur at 2 youth games occurring concurrently. This would result in 40 peak hour trips in the weekday PM peak hour.

**Table 7 Trip Generation Rates Based on Usage Estimates**

Land Use	Variable Type	Trip Generation-PM Peak Hour		
		In	Out	Total
Youth Game	Youth Players	1	0.5	1.5
	Coach/Referee	1	0	1
Adult Game	Players	1	0	1
	Coach/Referee	1	0	1

<sup>1</sup> Assumes 50% of parents drop off children and leave the soccer fields.

<sup>2</sup> Assumes all adults driving own cars and parking.

### 3. Multipurpose Field Traffic Analysis

**Table 8 Project Trip Generation Based on Usage Estimates**

Land Use	Variable Type	Players/Referee/Coaches	Fields	Trip Generation-PM Peak Hour		
				In	Out	Total
Youth Game	Youth Players	16	2	26	13	39
	Referee	1	1	1	0	1
	<b>Total</b>	<b>17</b>	<b>3</b>	<b>27</b>	<b>13</b>	<b>40</b>
Adult Game	Players	22	2	35	0	35
	Referees	3	1	2	0	2
	<b>Total</b>	<b>25</b>	<b>3</b>	<b>37</b>	<b>0</b>	<b>37</b>

<sup>1</sup> For Youth Games it is assumed that each team has 8 players. Each coach is also a parent that has a child in the team.

<sup>2</sup> For Adult Games it is assumed that each team has 11 players.

<sup>3</sup> Referees are needed only in one field, as one of the fields is for practices only.

In conclusion, the ITE Trip Rates using the high range provide a reasonable and technically defensible estimate to calculate trip generation for the project. Therefore, **for the purpose of this analysis, the project would generate 4 trips in the AM peak hour and 49 trips in the PM peak hour.**

## 3.2 TRIP DISTRIBUTION AND ASSIGNMENT

Traffic distribution determines the directional orientation of project traffic. Trip distribution maps are presented in Figures 7 and 8 for inbound and outbound traffic, respectively. Trip distribution patterns are influenced by the location of the project, type and intensity of proposed land uses, the circulation network, and location of employment and commercial centers. Traffic assignment is the determination of specific trip routes given the previously developed traffic distribution pattern. The project's trip distribution is based on a review of the study area arterial roadways and freeways, a review of land uses in the area, the traffic patterns, locations of residences, and traffic counts taken in the project area.

The trip distribution percentages are applied to the project trip generation to determine the traffic volumes forecast to be added at each intersection (i.e., trip assignment).

## 3.3 EXISTING WITH PROJECT TRAFFIC CONDITIONS

### 3.3.1 Intersection Level of Service

To assess Existing Year With Project traffic conditions, project traffic is added to the existing traffic levels. LOS for these conditions is summarized in Tables 9.

### 3. Multipurpose Field Traffic Analysis

**Table 9 Existing With Project Intersection LOS, Weekday PM Peak Hour**

Intersection	Traffic Control	Without Project		With Project		Change	Significant?
		ICU / Delay	LOS	ICU / Delay	LOS		
1. WB Ventura Freeway Ramps at Monterey Road	Signal	0.849	D	0.850	D	0.001	No
2. Glendale Avenue at EB Ventura Freeway Ramps	Signal	0.675	B	0.678	B	0.003	No
3. Glendale Avenue at Monterey Road	Signal	0.876	D	0.882	D	0.006	No
4. Glendale Avenue at Glenoaks Boulevard	Signal	0.757	C	0.758	C	0.001	No
5. Adams Street at Monterey Road	CCS	14.28	B	14.69	B	0.410	No
6. Adams Street at Glenoaks Boulevard	CCS	12.79	B	12.79	B	0.000	No
7. Verdugo Road at Monterey Road	Signal	0.614	B	0.625	B	0.011	No
8. Verdugo Road at Glenoaks Boulevard	Signal	0.511	A	0.513	A	0.002	No

Notes: CCS = Cross-Street Stop

**Bold** show intersections operating at unacceptable LOS.

Intersection volumes, Delay and LOS worksheets are included in Appendix E.

As shown in Tables 9, all study intersections operate at acceptable LOS during the Weekday PM Peak hour for the Existing With Project traffic conditions.





### 3. Multipurpose Field Traffic Analysis

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### 3. Multipurpose Field Traffic Analysis

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### 3. Multipurpose Field Traffic Analysis

#### 3.3.2 Neighborhood Street Segment Analysis

To assess Existing Year With Project traffic conditions, project traffic is added to the existing traffic levels along two project study area roadways. LOS for these conditions are summarized in Table 10. As shown in Table 10, all study segments operate with volumes well below their daily capacity, with a corresponding LOS A and B, which is acceptable.

**Table 10 Existing With Project Street Segment Volumes**

Street Segment	Functional Classification	Street Layout	Environmental Capacity (vehicles/day) <sup>1</sup>	Day	Without Project			With Project			Significant?
					ADT	V/C	LOS	ADT	V/C	LOS	
Monterey Road (Glendale Av to Verdugo Rd)	Urban Collector	2U	10,000	Weekday	6,020	0.602	B	6,410	0.641	B	No
Adams Street (Glenoaks Blvd to Monterey Rd)	Local	2D	2,500	Weekday	560	0.224	A	570	0.228	A	No

<sup>1</sup> 2U= 2-lane undivided road, 2D= 2-lane divided road.

<sup>2</sup> Functional Classifications and Environmental Capacity daily volumes obtained from the City of Glendale General Plan Circulation Element.

### 3.4 FUTURE TRAFFIC CONDITIONS

The Los Angeles County Guidelines for CMP Transportation Impact Analysis includes ambient growth rates for the City of Glendale in 5-year increments. To estimate future traffic conditions, opening year scenarios are based on the year 2021 traffic growth factor of 1.027 percent over a 5-year period. To conservatively estimate future year buildout conditions, this analysis used a total ambient growth of 2 percent over the 2-year period from 2019 to 2021.

Cumulative traffic is the traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by the City. Sixty-five projects were provided for consideration to be included in the traffic forecasts by the City of Glendale Planning Department. The list of cumulative projects screened to have a potential to affect traffic volumes in the vicinity of the school are included in Appendix F. For these cumulative projects, trip generation values were extracted from the ITE Trip Generation Manual. Based on a review of the circulation system, the trip generation, location, and land use type, the cumulative projects shown on Figure 9, *Cumulative Developments Location Map*, would have the potential for directly adding measurable traffic to the study area street system. The cumulative development projects assumed in this traffic analysis are estimated to generate 41,183 average daily trips (ADT) on weekdays, 1,670 trips during the weekday AM peak hour, and 1,586 trips during the weekday PM peak hour.

This traffic impact analysis assumes that all of the cumulative projects are developed and operational at the buildout of the proposed Project. This is the most conservative, worst-case approach, since it is possible that not all of these projects will be operational when the proposed Project begins operations. In addition, impacts for these cumulative projects would likely be subject to mitigation measures, which could reduce potential impacts. Under this analysis, however, those future mitigation measures are not considered.

### 3. Multipurpose Field Traffic Analysis

#### 3.4.1 Opening Year Without Project Traffic Conditions

##### Intersection Level of Service

To assess Opening Year No Project traffic conditions, existing traffic is combined with ambient growth and cumulative traffic. The intersection operations for the No Project traffic conditions are shown in Tables 11. Intersection volumes, Delay, and LOS worksheets are included in Appendix G. All intersections are forecast to operate at acceptable LOS under Opening Year Without Project conditions on Weekday PM.

**Table 11 Opening Year Without Project Intersection LOS, Weekday PM Peak Hour**

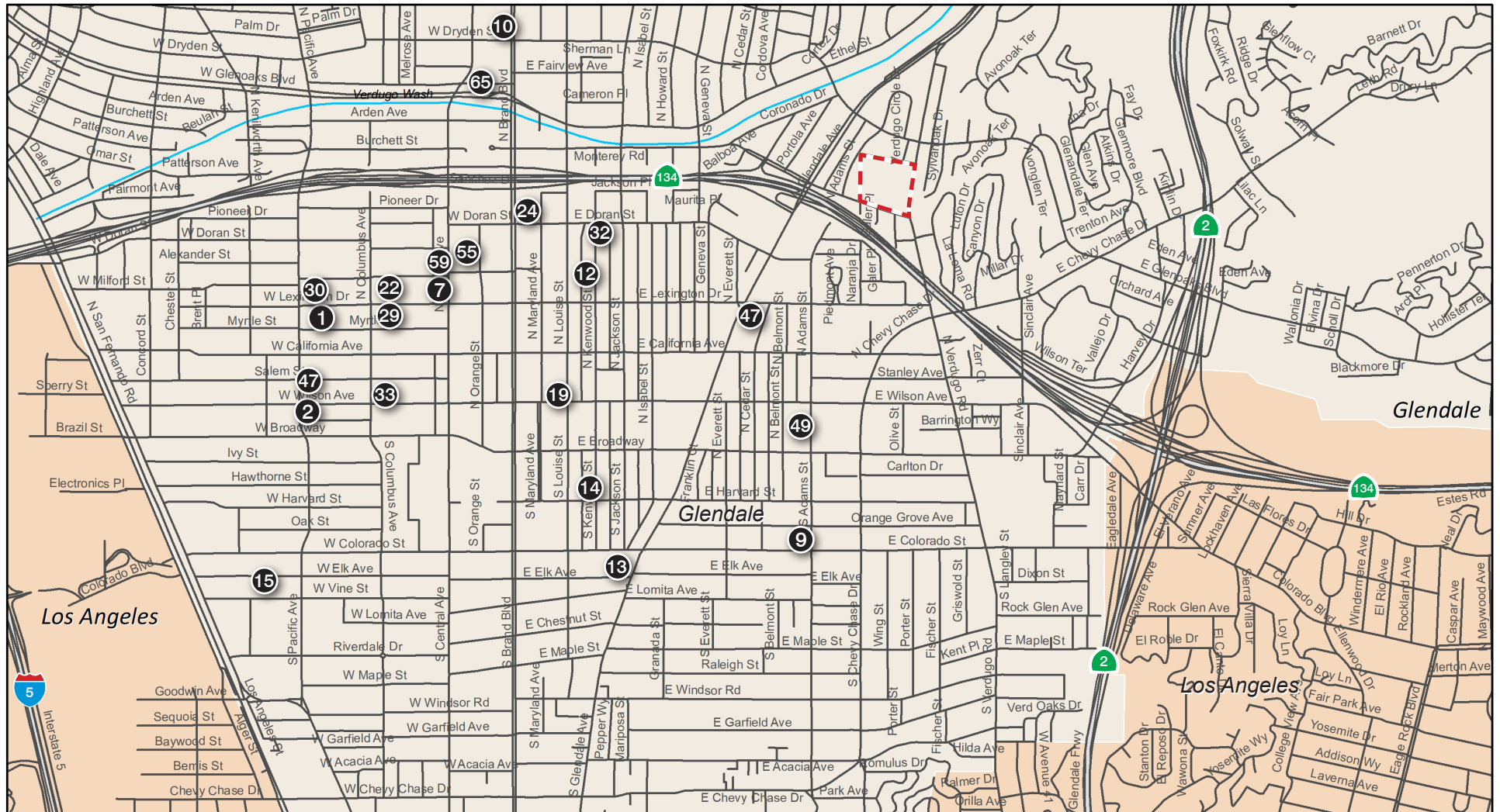
Intersection	Intersection Control	Acceptable LOS	Weekday PM Peak Hour	
			ICU (V/C) or Average Delay (sec/veh)	LOS
1. WB Ventura Freeway Ramps at Monterey Road	Signal	E	0.884	D
2. Glendale Avenue at EB Ventura Freeway Ramps	Signal	E	0.689	B
3. Glendale Avenue at Monterey Road	Signal	E	0.902	E
4. Glendale Avenue at Glenoaks Boulevard	Signal	E	0.775	C
5. Adams Street at Monterey Road	CCS	D	14.71	B
6. Adams Street at Glenoaks Boulevard	CCS	D	12.93	B
7. Verdugo Road at Monterey Road	Signal	E	0.615	B
8. Verdugo Road at Glenoaks Boulevard	Signal	E	0.516	A

Notes: CCS = Cross-Street Stop.

**Bold** show intersections operating at unacceptable LOS.

Intersection volumes, Delay and LOS worksheets are included in Appendix G.

Figure 9 - Cumulative Projects Map



--- Project Boundary      # Cumulative Project Location (20)

0 2,000  
Scale (Feet)



### 3. Multipurpose Field Traffic Analysis

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### 3. Multipurpose Field Traffic Analysis

#### Neighborhood Street Segment Analysis

To assess Opening Year Without Project traffic conditions, cumulative project traffic and ambient growth is added onto the existing traffic levels along two project study area roadways. LOS for these conditions are summarized in Table 12. As shown in Table 12, all study segments operate with volumes well below their daily capacity, with a corresponding LOS A and B, which is acceptable.

**Table 12 Opening Year Without Project Street Segment Analysis**

Street Segment	Functional Classification	Street Layout	Environmental Capacity (vehicles/day) <sup>1</sup>	ADT	V/C	LOS
Monterey Road (Glendale Av to Verdugo Rd)	Urban Collector	2U	10,000	6,200	0.620	B
Adams Street (Glenoaks Blvd to Monterey Rd)	Local	2D	2,500	570	0.228	A

<sup>1</sup> 2U= 2-lane undivided road, 2D= 2-lane divided road.

<sup>2</sup> Functional Classifications and Environmental Capacity daily volumes obtained from the City of Glendale General Plan Circulation Element.

#### 3.4.2 Opening Year With Project Traffic Conditions

To assess Opening Year With Project traffic conditions, existing traffic is combined with ambient growth, cumulative, and project traffic.

#### Intersection Level of Service

The intersection operations for the With Project traffic conditions are shown in Tables 13. Under With Project conditions, all intersections would operate at acceptable LOS.

**Table 13 Opening Year With Project Intersection LOS, Weekday PM Peak Hour**

Intersection	Traffic Control	Without Project		With Project		Change	Significant?
		ICU / Delay	LOS	ICU / Delay	LOS		
1. WB Ventura Freeway Ramps at Monterey Road	Signal	0.884	D	0.886	D	0.002	No
2. Glendale Avenue at EB Ventura Freeway Ramps	Signal	0.689	B	0.692	B	0.003	No
3. Glendale Avenue at Monterey Road	Signal	0.902	E	0.909	E	0.007	No
4. Glendale Avenue at Glenoaks Boulevard	Signal	0.775	C	0.776	C	0.001	No
5. Adams Street at Monterey Road	CCS	14.71	B	15.13	C	0.42	No
6. Adams Street at Glenoaks Boulevard	CCS	12.93	B	12.93	B	0	No
7. Verdugo Road at Monterey Road	Signal	0.615	B	0.625	B	0.01	No
8. Verdugo Road at Glenoaks Boulevard	Signal	0.516	A	0.518	A	0.002	No

Notes: CCS = Cross-Street Stop

**Bold** show intersections operating at unacceptable LOS.

Intersection volumes, Delay and LOS worksheets are included in Appendix E.

### 3. Multipurpose Field Traffic Analysis

In summary, under the proposed Project, traffic related to stadium events would not cause any intersections to deteriorate to an unacceptable LOS during the Weekday PM peak hour.

#### Neighborhood Street Segment Analysis

To assess Opening Year With Project traffic conditions, cumulative project traffic, ambient growth, and project trip generation is added to the existing traffic levels along two project study area roadways. LOS for these conditions are summarized in Table 14. As shown, with the addition of project traffic there would be a minimal increase in the V/C ratio for each study segment. All study segments would operate with volumes well below their daily capacity with a corresponding LOS A and B, which is acceptable.

**Table 14 Opening Year With Project Street Segment Volumes**

Street Segment	Functional Classification	Street Layout	Environmental Capacity (vehicles/day) <sup>1</sup>	Day	Without Project			With Project			Significant?
					ADT	V/C	LOS	ADT	V/C	LOS	
Monterey Road (Glendale Av to Verdugo Rd)	Urban Collector	2U	10,000	Weekday	6,200	0.620	B	6,410	0.641	B	No
Adams Street (Glenoaks Blvd to Monterey Rd)	Local	2D	2,500	Weekday	570	0.228	A	570	0.228	A	No

<sup>1</sup> 2U= 2-lane undivided road, 2D= 2-lane divided road.

<sup>2</sup> Functional Classifications and Environmental Capacity daily volumes obtained from the City of Glendale General Plan Circulation Element.

## 4. Nonmotorized Travel

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All roads in the vicinity of the school have paved sidewalks on both sides of the street. In addition, crosswalks are painted on all major intersections in the study area such as intersections along Glendale Avenue and Verdugo Road. Signalized intersections include actuated pedestrian signal heads. There are no market bicycle lanes in the study area. However, the existing sidewalk and crosswalks would provide adequate pedestrian travel in the area for accessing the site on foot or parking on public streets and walking to the school.

## 4. Nonmotorized Travel

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## 5. Parking Analysis

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### 5.1 PARKING GENERATION

Parking demand for the proposed Project is based on ITE's Parking Generation Manual 4<sup>th</sup> Edition for a "soccer complex" (ITE land use code 488. According to ITE's Parking Manual, the peak parking rate per soccer complex field during the weekday is 38.3.

To calculate the expected project-related parking demand, the rates shown above are multiplied by the anticipated number of fields, which is two. The peak parking demand for the proposed two fields would be 77 during the weekday. As discussed previously, the project site is currently used on the weekends by AYSO from 8:00 a.m. to 6:00 p.m. on Saturdays, and 10:00 a.m. to 6:00 p.m. on Sundays. The proposed Project would not increase capacity of the existing Wilson MS field for AYSO use, rather, the proposed Project would allow for evening uses of the field. As such, the proposed Project would not change parking demand during the Saturday mid-day peak period and it is not further evaluated in this analysis.

### 5.2 PROJECT-RELATED PARKING IMPACTS

The proposed Project will increase parking demand around the project vicinity during use of the multipurpose field for non-school use on weekdays after 5PM. There would be no increase in parking demand with the project during the daytime on weekdays and weekends, as the fields and courts are already in use during those times. There are parking spots available at the school parking lot off Monterey Road and off-site along the public streets. The highest increase in parking demand with the project would occur on weekday evenings. Table 15 shows the anticipated parking demand during the weekday PM peak hour. Parking counts were conducted along the roadways mentioned in Section 2.2.4.

**Table 15     Parking Demand in Terms of Available Parking**

	<b>Weekday PM Peak Hour</b>
Parking Demand Estimate	77
Available On-site Parking	66
Available Off-site Parking	308
<b>Total Available Parking</b>	<b>374</b>
<b>Available minus Demand</b>	<b>297</b>

Table 15 presents a worst-case scenario for a weekday, where the peak parking demand for the project would coincide with the least amount of parking supply that was observed at any time during the field surveys at the school lot and along public streets. As shown in Table 15, on weekdays there is expected to be approximately 66 available spaces at the school lot and an additional 308 curbside spaces on public streets. The available supply of 374 spaces in the study area will be able to absorb the anticipated parking demand of 77 spaces.

## 5. Parking Analysis

Therefore, the parking demand from the project can be absorbed by the available parking supply at the school lot and on public streets and will not cause an impact to the area from a parking standpoint.

## 6. Conclusion

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### 6.1 TRAFFIC IMPACTS

The City's General Plan Circulation Element has LOS policies to maintain acceptable operations during weekday peak hours. On all analyzed study area intersection and study area roadway segments, the proposed Project traffic would not degrade the operation of the circulation system on weekdays during the weekday PM. The City's LOS policies try to maintain the continuous performance of the circulation system and to work toward the mobility goals in the general plan. The level of congestion that is anticipated to occur prior to a full-capacity event at the proposed field would not affect the typical weekday commuter peak hours. Opening Year With Project traffic conditions will operate well within the designed capacity for all analyzed study area intersection and study area roadway segments. The proposed Project will not degrade existing traffic conditions, and is therefore impacts are considered less than significant.

### 6.2 PARKING IMPACTS

The proposed Project will increase parking demand around the project vicinity during use of the multipurpose field for non-school use on weekdays after 5 PM. No increase in parking demand would occur during the day on weekdays and weekends with the project. There are parking spots available at the school parking lot off Monterey Road and off-site along the public streets. On weekdays, the available supply of 374 spaces in the study area will be able to absorb the anticipated parking demand of 77 spaces. The parking demand from the project can be absorbed by the available parking supply at the school lot and on public streets, and impacts would be less than significant.

## 6. Conclusion

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## 7. References

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- California Department of Transportation. 2014. *California Manual of Uniform Traffic Control Devices*.
- City of Glendale. General Plan Circulation Element.
- Los Angeles County Metropolitan Transportation Authority. 2010 Congestion Management Program for Los Angeles County.
- Institute of Transportation Engineers. 2010. *Parking Generation*. 4th edition.
- Institute of Transportation Engineers. 2017. *Trip Generation*. 10th edition.
- Transportation Research Board. 2016. *Highway Capacity Manual*. 6th Edition

## 7. References

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## Appendices

# Appendix A. Memorandum of Understanding

## Appendices

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## Fernando Sotelo

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**From:** Casanova, Pastor <PCasanova@Glendaleca.gov>  
**Sent:** Monday, November 18, 2019 12:05 PM  
**To:** Vierheilig, Peter; Fernando Sotelo  
**Cc:** Julian Capata; Alexander Kessel  
**Subject:** RE: Wilson Traffic Study

Peter / Fernando,

As indicated by Fernando, there is no change in the methodology. They will be updating traffic counts, using latest HCM, and incorporating current lane geometries, in particular at Glendale/Monterey intersection.

The study should also update the cumulative/related projects.

Fernando's approach is ok.

Thank You,

Pastor E. Casanova, T.E., Principal Traffic Engineer • City of Glendale • Public Works Department, Engineering Division/Traffic

633 E. Broadway, Room 205 • Glendale, CA 91206 • (818) 548-3945 • [PCasanova@glendaleca.gov](mailto:PCasanova@glendaleca.gov)

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**From:** Vierheilig, Peter  
**Sent:** Wednesday, November 13, 2019 8:43 AM  
**To:** 'Fernando Sotelo'; Casanova, Pastor  
**Cc:** Julian Capata; Alexander Kessel  
**Subject:** RE: Wilson Traffic Study

Fernando,

I have emailed planning to see if your list of cumulative projects is current.

Pastor, please let us know if the traffic and parking methodology (below) is ok.

Thanks!

Peter Vierheilig, PLA, Project Manager • (818) 548-2057 •

---

**From:** Fernando Sotelo [mailto:fsotelo@placeworks.com]  
**Sent:** Tuesday, November 12, 2019 4:34 PM  
**To:** Vierheilig, Peter; Casanova, Pastor  
**Cc:** Julian Capata; Alexander Kessel  
**Subject:** RE: Wilson Traffic Study

**CAUTION:** This email was delivered from the Internet. Do not click links, open attachments, or reply if you are unsure as to the sender.

Hi Peter and Pastor,

We received updated traffic and parking counts to update our traffic and parking study completed in 2018. I just want to go over a few key assumptions and requests to revise the study properly.

#### Project Description

Has the project description and anticipated use changed since the NOP in 2017?

#### Cumulative Projects

Could you request planning to review and provide us a list of cumulative projects to include in the study? Below is the table of cumulative projects we included in the 2018 study that would affect the study area:

#### **Cumulative Projects Trip Generation**

ID	Address	Land Use	ITE Code	Unit Amount	Unit	Weekday Daily	PM	
							In	
1	534 N Kenwood Street	Apartment	220	11	DU	73	4	
2	429 N Kenwood Street	Apartment	220	21	DU	140	8	
3	528 N Maryland Avenue	Apartment	220	5	DU	33	2	
4	1128 Stanley Avenue	Apartment	220	4	DU	27	2	
5	818 E Colorado Street	Specialty Retail Center	826	10	TSF	443	12	

<sup>1</sup> Trip Generation Rates from ITE Trip Generation Manual 10<sup>th</sup> Edition

#### Traffic and Parking Study area and Methodology

We won't be changing the methodology, except for using the latest Highway Capacity Methodology for unsignalized intersections (HCM 6<sup>th</sup> Edition) where applicable. Everything else will be consistent with the 2018 traffic study. We will review the study area again to identify changes to the network and parking conditions, in particular to the intersection of Monterey at Glendale. Basically we are updating the study with 20189 counts, with updated cumulative projects and the latest network lane geometries and parking configurations.

P

Let me know if you agree or if we should send a formal MOU similar to what we did in 2017.

Thanks

**FERNANDO SOTELO, PE, PTP**  
Senior Associate

## Fernando Sotelo

---

**From:** Casanova, Pastor <PCasanova@Glendaleca.gov>  
**Sent:** Friday, May 19, 2017 5:04 PM  
**To:** Fernando Sotelo; Vierheilig, Peter  
**Cc:** Julian Capata; Ambayec, Dennis; Vartanian, Sevak; Dombroski, Tad; Brown, Jeff  
**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to to determine study intersections and other study requirements?

Good afternoon Fernando,

We reviewed the Wilson MS Multi-purpose Field MOE and offer the following comments related to the Traffic Study:

- Add the following intersections to your proposed intersection study list:
  - Adams St and Glenoaks Blvd
  - Adams St and Monterey Rd
  - Monterey Rd and Ventura Fwy WB Ramps
- Add a neighborhood street segment analysis component to the traffic study (to evaluate Environmental capacity) that includes the following street segments:
  - Monterey Rd between Glendale Ave and Verdugo Rd
  - Adams St between Glenoaks Blvd and Monterey Rd
- Provide trip distributions assumptions for trips “to” the project.
- Revise trip distribution exhibits to include additional study intersections

The following are comments related to the Parking analysis:

- Revise parking analysis assumptions per comments shown in red (and underlined) below:

A parking analysis will be prepared to estimate the project-related parking impacts in the vicinity of the school. Parking counts will be taken on a weekday evening from 5 to 10 PM in 30 minute intervals and between ~~10 AM to 12PM~~ 8am to 10pm on a Saturday. The parking counts will be taken at the school parking lots and along both sides of the following roadway segments, as shown in Figure 2:

- Verdugo Road from Monterey Road to north of Glenoaks Boulevard
- Glenoaks Boulevard from Adams Street to east of Verdugo Road
- Adams Street between Monterey Road and Glenoaks Boulevard
- Monterey Road from Verdugo Road to west of Adams Street
- Grove Place between Monterey Road and Woodbury Road
- Woodbury Road between Grove Place and La Loma Road

Exhibit B proposes the installation of Solar Array just east of the alley between N. Adams Street and North Verdugo Road. This area may be an additional parking alternative that would significantly increase parking options for this project.

You may proceed with scheduling the traffic counts based on our comments. However, please revise and resubmit the project MOE for confirmation. You may contact me directly if you have any questions.

Thank You,



---

**From:** Fernando Sotelo [mailto:[fsotelo@placeworks.com](mailto:fsotelo@placeworks.com)]

**Sent:** Friday, May 12, 2017 11:51 AM

**To:** Vierheilig, Peter; Casanova, Pastor

**Cc:** Julian Capata

**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to to determine study intersections and other study requirements?

Hello Pastor,

We prepared this memorandum of understanding to outline key assumptions and methodologies to be used for the traffic and parking study for the Wilson Field. Please review the MOU as soon as possible so we can setup traffic and parking counts, we would like to have counts taken before the memorial day weekend.

In summary, we propose traffic counts during the weekday PM peak hour and midday on Saturday at the following intersections:

1. Glendale Avenue at Glenoaks Boulevard
2. Glendale Avenue at Monterey Road
3. Glendale Avenue at EB Ventura Freeway
4. Verdugo Road at Glenoaks Boulevard
5. Verdugo Road at Monterey Road

And parking counts would be taken on a weekday evening from 5 to 10 PM in 30 minute intervals and between 10 AM to 12PM on a Saturday. The parking counts will be taken at the school parking lots and along the following roadway segments, as shown in Figure 2 of the MOU:

- Verdugo Road from Monterey Road to north of Glenoaks Boulevard
- Glenoaks Boulevard from Adams Street to east of Verdugo Road
- Adams Street between Monterey Road and Glenoaks Boulevard
- Monterey Road from Verdugo Road to west of Adams Street
- Grove Place between Monterey Road and Woodbury Road
- Woodbury Road between Grove Place and La Loma Road

Please review the attached MOU and let me know if you agree with our approach and the count locations and periods. Don't hesitate to contact me if you have questions or would like to discuss. Thanks

**FERNANDO SOTELO, PE, PTP**



**Senior Associate**

3 MacArthur Place, Suite 1100 | Santa Ana, California 92707  
714.966.9220 | fsotelo@placeworks.com | placeworks.com

---

**From:** Julian Capata



**Sent:** Wednesday, May 03, 2017 2:47 PM

**To:** Vierheilig, Peter; Casanova, Pastor; Fernando Sotelo

**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to determine study intersections and other study requirements?

Pastor,

Thank you for your time regarding this project. I have copied Fernando Sotelo, PlaceWorks' traffic engineer so that he can reach out to you and ensure that our traffic study meets the City's standards and project needs.

Thank you,

Julian

**JULIAN F. CAPATA**  
Senior Associate

700 S. Flower Street, Suite 600, Los Angeles, CA 90017  
213.623.1443 | [jcapata@placeworks.com](mailto:jcapata@placeworks.com) | [placeworks.com](http://placeworks.com)

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**From:** Vierheilig, Peter [<mailto:PVierheilig@Glendaleca.gov>]

**Sent:** Wednesday, May 3, 2017 2:31 PM

**To:** Casanova, Pastor <[PCasanova@Glendaleca.gov](mailto:PCasanova@Glendaleca.gov)>



**Cc:** Julian Capata <[jcapata@placeworks.com](mailto:jcapata@placeworks.com)>

**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to determine study intersections and other study requirements?

Hello Pastor,

Julian Capata, from our consultant PlaceWorks, wants to contact you to discuss the traffic study they will be performing around the Wilson Middle School site for our Multi-Purpose Sports Field project. I am copying him on this email, so he can reach you.

**JULIAN F. CAPATA**  
Senior Associate

700 S. Flower Street, Suite 600, Los Angeles, CA 90017  
213.623.1443 | [jcapata@placeworks.com](mailto:jcapata@placeworks.com) | [placeworks.com](http://placeworks.com)



Julian, Pastor's phone number is (818) 937-8324.

Thank you!

Peter Vierheilig, PLA, Project Manager • (818) 937-8263 •

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**From:** Ambayec, Dennis

**Sent:** Wednesday, May 03, 2017 2:25 PM

**To:** Vierheilig, Peter

**Cc:** Casanova, Pastor

**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to to determine study intersections and other study requirements?

Peter,

Please work with Pastor. Thanks.

Dennis H. Ambayec, P.E., Deputy Director of Public Works/City Engineer • City of Glendale • Public Works Engineering  
633 E. Broadway Rm 204 • Glendale, CA 91206 • (818) 548-3945 • [Dambayec@glendaleca.gov](mailto:Dambayec@glendaleca.gov)



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**From:** Vierheilig, Peter

**Sent:** Wednesday, May 03, 2017 1:28 PM

**To:** Ambayec, Dennis

**Subject:** RE: Wilson MS Multi-purpose Field: EIR - traffic counts Who does consultant talk to to determine study intersections and other study requirements?

Hello Dennis,

In Wayne Ko's absence, can Pastor confer with my EIR consultant's traffic sub-consultant with regards to the traffic study required for the Wilson Middle School Multi-Purpose Field EIR – or has someone else been assigned Wayne's duties?

Thanks,

Peter Vierheilig, PLA, Project Manager • (818) 937-8263 •



May 11, 2017

City of Glendale Public Works Department  
Pastor Casanova  
613 East Broadway, Room 120  
Glendale, CA 91206  
pcasanova@glendaleca.gov

Subject: Memorandum of Understanding (MOU) for the Traffic Impact Analysis for the Multi-Purpose Field Development at Wilson Middle School

Dear Mr. Casanova:

PlaceWorks is preparing a traffic study and processing CEQA environmental documents for the development of a multi-purpose field with sports field lighting on the campus of Wilson Middle School, at 1221 Monterey Road in Glendale. The City has determined that an EIR will be required to analyze project impacts on the physical environment, including a Traffic and Parking Study. This memorandum of understanding (MOU) describes the project and outlines the proposed methodologies and basic assumptions for the traffic and parking impact analysis for the project. This has been prepared for The City of Glendale for review and comment to ensure that the study uses appropriate assumptions to evaluate potential traffic and parking impacts from the project. The MOU includes a description of the project, trip generation estimates for the project, trip distribution, a list of study area intersections to be evaluated, and identification of an ambient growth rate, scenarios to be evaluated, criteria to evaluate levels of service and to determine thresholds of significance. In addition, the proposed parking survey and parking study area are included in this memo.

### **Project Description**

The project includes the development of a multi-purpose field on the campus of Wilson Middle School. In addition to an artificial turf multi-purpose field with soccer and lacrosse markings, the proposed amenities include rubberized surface jogging track, fitness equipment, seating, restroom and storage/maintenance building(s), walkways, re-grading of the existing basketball court surface, and sports field lighting. The school playing field areas would remain "open" for public use and for city programming. Wilson Middle School would access the field during school hours, and the city would access the field during the hours of 5 p.m. to 10 p.m. Monday through Friday, and 8 a.m. to 10 p.m. Saturday and Sunday.

The project site is within a medium-density residential community. The location of the fields is bordered to the east by Verdugo Road and to the north by residential uses. The facility will make use of existing street and on-site parking. Primary site access would be the main school parking lot on Monterey Road; curbside parking is allowed on the roadways in the vicinity of the school including Verdugo Road, Monterey Road, and Adams Street.

### **Trip Generation and Distribution**

The proposed project would not expand the school's enrollment capacity, but is expected to increase traffic and parking demand around the project site due to new public use and city programming on weekday evenings and weekends.

The trip generation rates for soccer fields were obtained from ITE's Trip Generation Manual. The manual provides peak hour and daily rates on weekdays and weekends under land use code 488, Soccer Complex. Table 1 summarizes the trip generation rates obtained from the ITE Trip Generation Manual, and presents both the average rates and the high end of the statistical sample for each period.

**Table 1 ITE Trip Generation Rates For Soccer Complex**

Rate Type	Weekday							Saturday			
	Daily	AM Peak Hour			PM Peak Hour			Daily	Peak Hour		
		In	Out	Total	In	Out	Total		In	Out	Total
Average Rate	71.33	0.64	0.48	1.12	11.86	5.84	17.70	117.43	14.56	15.78	30.34
Highest Rate	90.81	1.10	0.81	1.88	16.67	8.20	24.88	117.43	16.42	17.78	34.20

1 Trip Generation rates per field.

2 Trip generation rates are based on the ITE Trip Generation Manual 9th Edition for the Soccer Complex Land Use (ITE Code 488).

3 Peak hour of the generator is not defined in the ITE Manual. For the purpose of this analysis it is assumed to overlap with the traffic peak hour on weekends during midday.

To calculate the expected project-related trip generation, the rates shown above are to be multiplied by the anticipated number of fields. The proposed project includes the development of two fields; estimated project-related trips are shown in Table 2. Utilizing the average rates, the project would generate 2 trips in the weekday AM peak hour, 36 trips in the weekday PM peak hour, and 61 trips in on weekend peak hours. As shown on Table 2, based on ITE's Trip Generation Manual rates using the highest rates, the project would generate 4 trips in the weekday AM peak hour, 49 trips in the weekday PM peak hour and 69 trips in on weekend peak hours. The weekend peak hour normally occurs between 11 AM to 2 PM. As shown in Table 2, the project would generate negligible trips in the weekday AM peak hour. In addition, public use of the fields would not be allowed on weekdays in the AM peak hour. Therefore, AM peak hour traffic will not be further evaluated in this analysis.

**Table 2 Project Trip Generation, ITE Rates**

Rate Type	Weekday							Saturday			
	Daily	AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
		In	Out	Total	In	Out	Total		In	Out	Total
Average Rate	143	1	1	2	24	12	36	235	29	32	61
Highest Rate	182	2	2	4	33	16	49	235	33	36	69

Trip generation rates for peak hour of adjacent streets, based on Soccer Complex Land Use (ITE Code 488) per the ITE Trip Generation Manual 9th Edition.

The sample size to support these rates is relatively small with less than 10 samples. To verify the trip generation based on ITE trip rates, we will also review the proposed use of the fields to calculate vehicular trips based on estimates for players, spectators and supporting personnel (coaches, referees, etc.). PlaceWorks consulted with the City of Glendale Parks and Recreation Department to obtain anticipated usage estimates. The estimates were provided for both adult and youth because of different ridership characteristics and different team sizes. Table 3 shows the trip generation rates per player/coach/referee and Table 4 shows the project trip generation for the proposed 2 fields based on usage estimates. It shall be noted that a 20% trip reduction was applied to account for carpool and walk/bike/transit modes. The project trip generation based on usage estimates is highest for youth games. As shown on Table 4, the highest trip generation would occur at 2 youth games occurring concurrently. This would result in 40 peak hour trips in the weekday PM peak hour and 78 peak hour trips in the weekend.

**Table 3 Trip Generation Rates Based on Usage Estimates**

Land Use	Variable type	PM Peak Hour			Weekend Peak Hour		
		In	Out	Total	In	Out	Total
Youth Game	Youth Players	1	0.5	1.5	1.5	1.5	3
	Coach/Referee	1	0	1	1	1	2
Adult Game	Players	1	0	1	1	1	2
	Coach/Referee	1	0	1	1	1	2

1 Assumes 50% of parents drop-off children and leave the soccer fields.

2 Assumes all adults driving own cars and parking.

**Table 4 Project Trip Generation Based on Usage Estimates**

Land Use	Variable type	Players/ Referee/ Coaches	Fields	Trip Generation					
				PM Peak Hour			Weekend Peak Hour		
				In	Out	Total	In	Out	Total
Youth Game	Youth Players	16	2	26	13	39	38	38	76
	Referee	1	1	1	0	1	1	1	2
	<b>TOTAL</b>	<b>17</b>	<b>3</b>	<b>27</b>	<b>13</b>	<b>40</b>	<b>39</b>	<b>39</b>	<b>78</b>
Adult Game	Players	22	2	35	0	35	35	35	70
	Referees	3	1	2	0	2	2	2	4
	<b>TOTAL</b>	<b>25</b>	<b>3</b>	<b>37</b>	<b>0</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>74</b>

1 For Youth Games it is assumed that each team has 8 players. Each coach is also a parent that has a child in the team.

2 For Adult Games it is assumed that each team has 11 players.

3 Referees are needed only in one field, as one of the fields is for practices only.

In conclusion, the ITE Trip Rates using the high range provide a reasonable and technically defensible estimate to calculate trip generation for the project. Therefore, for the purpose of this analysis, the project would generate 4 trips in the AM peak hour, 49 trips in the PM peak hour and 69 trips in on weekend peak hours.

### Study Area Intersections, Roadways and Scenarios

Based on the calculated project trip generation and distribution, the following intersections will be analyzed during weekday PM peak hours and Saturday midday (11 AM to 2 PM):

1. Glendale Avenue at Glenoaks Boulevard
2. Glendale Avenue at Monterey Road
3. Glendale Avenue at EB Ventura Freeway
4. Verdugo Road at Glenoaks Boulevard
5. Verdugo Road at Monterey Road

Figure 1 shows the estimated trip distribution around the project study area and the intersection study locations. The trip distribution is based on a review of the study area circulation network, city boundaries, the existing sports fields utilized for the City's Park and Recreation Programs, and a review of residential land uses in the area.

### **Traffic Study Scenarios**

The traffic study will analyze multiple scenarios based on the anticipated project buildout. The following analysis scenarios will be provided:

- Existing Conditions
- Existing Conditions with Project
- Opening Year with Cumulative Developments without Project
- Opening Year with Cumulative Developments with Project

The Los Angeles County Guidelines for CMP Transportation Impact Analysis includes ambient growth rates for the City of Glendale in 5-year increments. To estimate future traffic conditions, opening year scenarios will use the year 2020 traffic growth rate factor of 1.027%. A list of cumulative projects to be fully operational by project opening year, as provided by the city, will also be included to the background traffic conditions. Trip generation and trip distribution for the cumulative developments will be estimated for inclusion in the background traffic conditions at project opening year.

### **LOS Criteria and Threshold of Significance**

The 2010 Congestion Management Plan (CMP) for Los Angeles County requires use of the Intersection Capacity Utilization (ICU) method to calculate levels of service (LOS) for signalized intersections. The Highway Capacity Manual (HCM) 2010 methodology will be used to calculate LOS at unsignalized intersections.

In the City of Glendale, impacts are considered significant if the project-related increase in the volume-to-capacity (V/C) ratio equals or exceeds 0.02 that have LOS D or worse. The impact is considered significant for unsignalized intersections if the project-related increase in the delay equals or exceeds 3 seconds that have LOS D, or worse.

### **Parking**

A parking analysis will be prepared to estimate the project-related parking impacts in the vicinity of the school. Parking counts will be taken on a weekday evening from 5 to 10 PM in 30 minute intervals and between 10 AM to 12PM on a Saturday. The parking counts will be taken at the school parking lots and along the following roadway segments, as shown in Figure 2:

- Verdugo Road from Monterey Road to north of Glenoaks Boulevard
- Glenoaks Boulevard from Adams Street to east of Verdugo Road
- Adams Street between Monterey Road and Glenoaks Boulevard
- Monterey Road from Verdugo Road to west of Adams Street
- Grove Place between Monterey Road and Woodbury Road
- Woodbury Road between Grove Place and La Loma Road

Parking demand will be based on ITE's Parking Generation manual for a "soccer complex" (ITE land use code 488), as shown in Table 5.

**Table 5      Parking Demand Rates for Soccer Complex**

Weekday Peak Hour	Saturday Peak Hour
38.3	58.8
Parking Demand based on the average rates for the Soccer Complex Land Use (ITE Code 488) per the ITE Parking Generation Manual 4th Edition.	

To calculate the expected project-related parking demand, the rates shown above are to be multiplied by the anticipated number of fields. The calculated parking demand is summarized in Table 6.

**Table 6      Parking Demand Estimates for Soccer Complex**

Weekday Peak Hour	Saturday Peak Hour
77	118
Parking Demand based on the average rates Soccer Complex Land Use (ITE Code 488) per the ITE Parking Generation Manual 4th Edition.	

Please review the following assumptions and let us know if we can schedule traffic and parking counts as proposed in this MOU. Or feel free to call if you have any questions or would like to discuss.

Respectfully submitted,

**FERNANDO SOTELO, PE, PTP**  
**Senior Associate**



3 MacArthur Place, Suite 1100 | Santa Ana, California 92707  
714.966.9220 | [fsotelo@placeworks.com](mailto:fsotelo@placeworks.com) | [placeworks.com](http://placeworks.com)

## Attachment A.

- Proposed Trip Distribution Map and Intersection Study Locations
- Parking Counts Locations
- Proposed Site Plan



Figure 1 - Project Trip Distribution

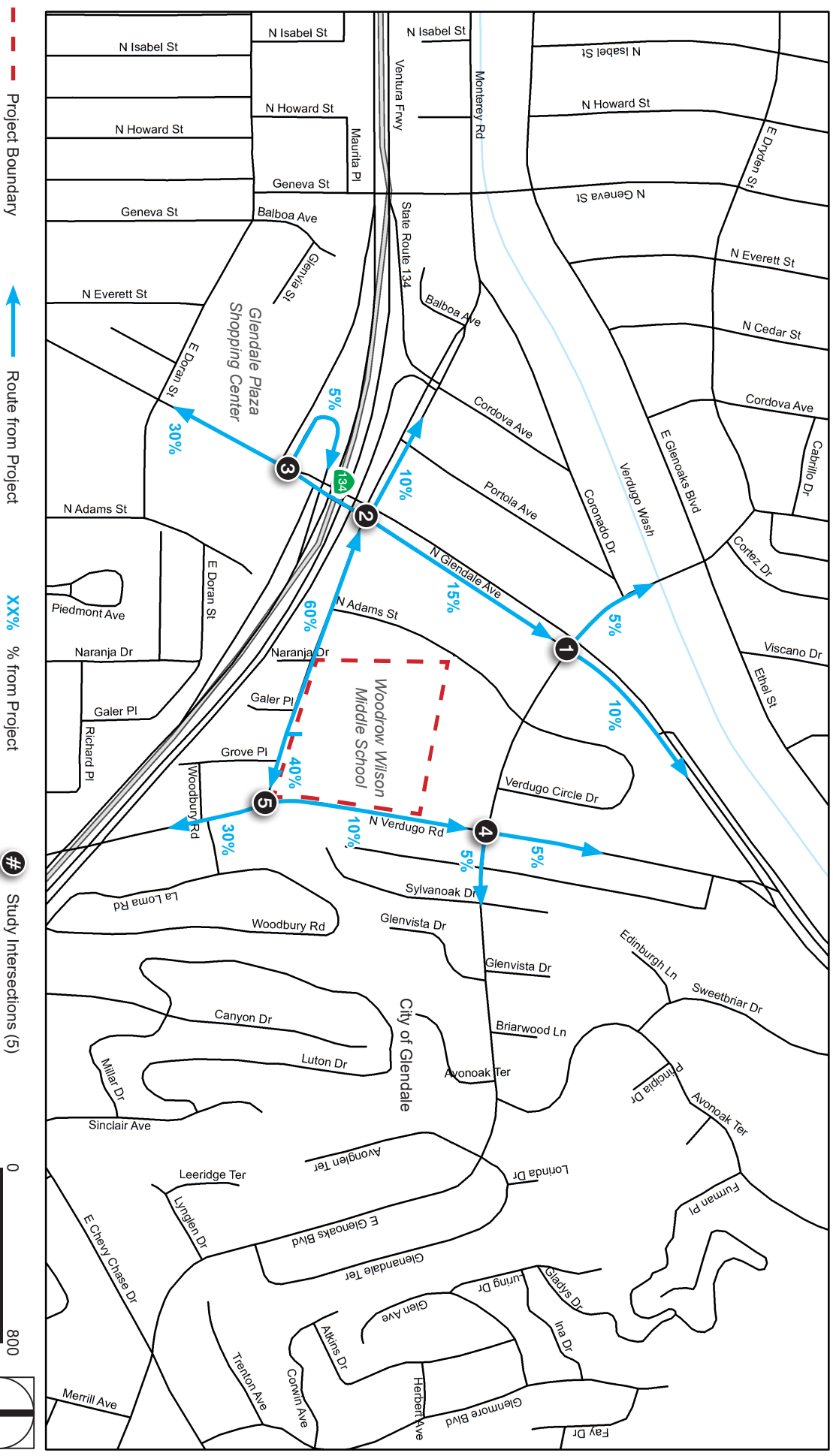
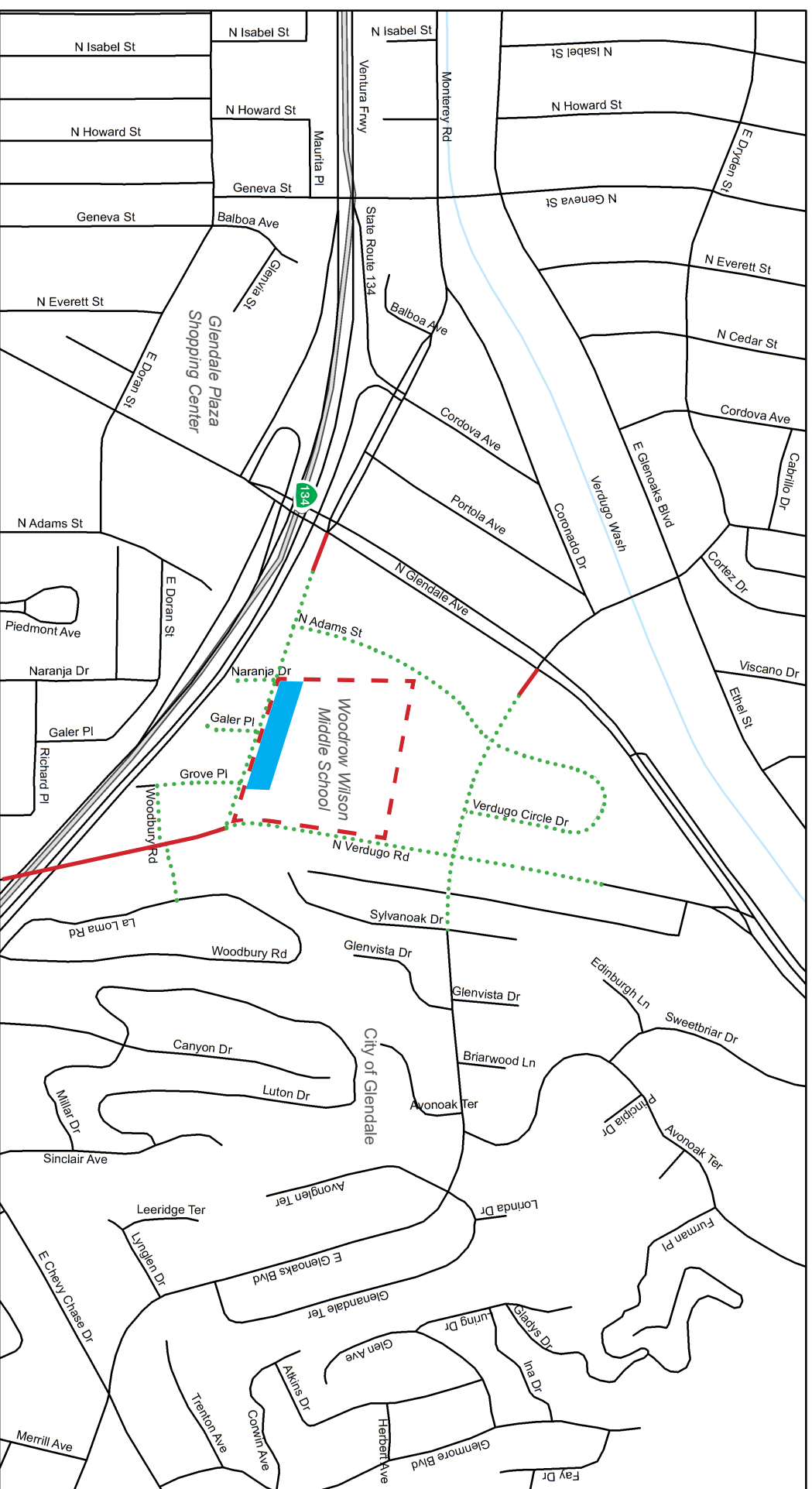


Figure 2 - Off-Site Parking Locations



Project Boundary

Anticipated Off-Site Parking

No Curbside Parking Allowed

On-Site Parking Lot

0 800

Scale (Feet)

Base Map Source: ESRI, USGS, NOAA, 2017



Proposed Restroom

Planned Solar Arrays by School District

Practice Field

Proposed Multi-Purpose Field(s)

Playing Field

Wilson Middle School Multi-Purpose Field  
**Proposed Development Plan**

## Appendix B. Traffic Counts

## Appendices

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City of Glendale  
N/S: SR-134W Ramps/Cordova Avenue  
E/W: Monterey Road  
Weather: Clear

File Name : 01\_GDE\_134W\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

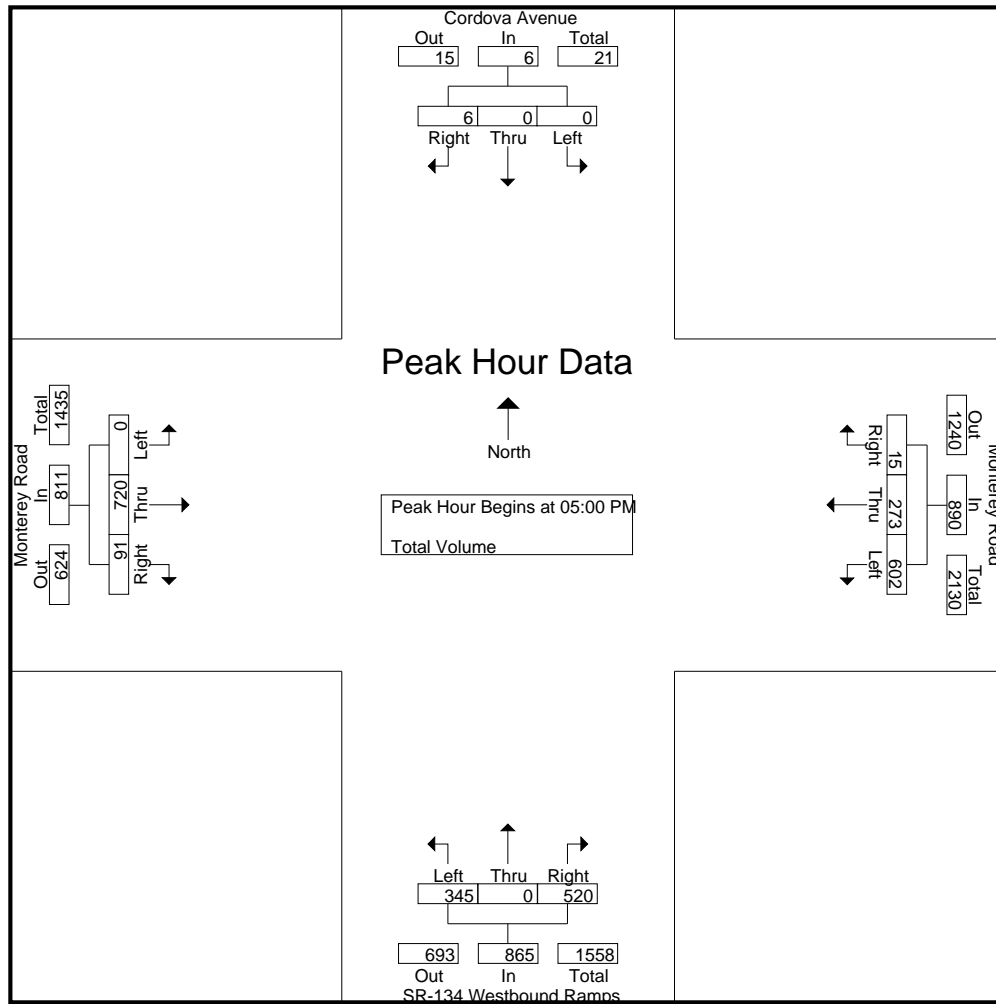
Groups Printed- Total Volume

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Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	156	61	2	219	43	0	113	156	0	145	20	165	540
04:15 PM	0	0	1	1	142	51	1	194	70	0	114	184	0	150	29	179	558
04:30 PM	0	0	0	0	138	59	1	198	65	0	112	177	0	149	28	177	552
04:45 PM	0	0	0	0	145	63	3	211	73	0	103	176	0	152	20	172	559
Total	0	0	1	1	581	234	7	822	251	0	442	693	0	596	97	693	2209
05:00 PM	0	0	3	3	168	72	4	244	79	0	131	210	0	160	21	181	638
05:15 PM	0	0	1	1	153	68	5	226	93	0	111	204	0	185	20	205	636
05:30 PM	0	0	1	1	155	75	4	234	84	0	145	229	0	202	30	232	696
05:45 PM	0	0	1	1	126	58	2	186	89	0	133	222	0	173	20	193	602
Total	0	0	6	6	602	273	15	890	345	0	520	865	0	720	91	811	2572
Grand Total	0	0	7	7	1183	507	22	1712	596	0	962	1558	0	1316	188	1504	4781
Apprch %	0	0	100		69.1	29.6	1.3		38.3	0	61.7		0	87.5	12.5		
Total %	0	0	0.1	0.1	24.7	10.6	0.5	35.8	12.5	0	20.1	32.6	0	27.5	3.9	31.5	

	Cordova Avenue Southbound				Monterey Road Westbound				SR-134 Westbound Ramps Northbound				Monterey Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	<b>3</b>	<b>3</b>	<b>168</b>	72	4	<b>244</b>	79	0	131	210	0	160	21	181	638
05:15 PM	0	0	1	1	153	68	<b>5</b>	226	<b>93</b>	0	111	204	0	185	20	205	636
05:30 PM	0	0	1	1	155	<b>75</b>	4	234	84	0	<b>145</b>	<b>229</b>	0	<b>202</b>	<b>30</b>	<b>232</b>	<b>696</b>
05:45 PM	0	0	1	1	126	58	2	186	89	0	133	222	0	173	20	193	602
Total Volume	0	0	6	6	602	273	15	890	345	0	520	865	0	720	91	811	2572
% App. Total	0	0	100		67.6	30.7	1.7		39.9	0	60.1		0	88.8	11.2		
PHF	.000	.000	.500	.500	.896	.910	.750	.912	.927	.000	.897	.944	.000	.891	.758	.874	.924

City of Glendale  
N/S: SR-134W Ramps/Cordova Avenue  
E/W: Monterey Road  
Weather: Clear

File Name : 01\_GDE\_134W\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	3	3	145	63	3	211	79	0	131	210	0	160	21	181
+15 mins.	0	0	1	1	168	72	4	244	93	0	111	204	0	185	20	205
+30 mins.	0	0	1	1	153	68	5	226	84	0	145	229	0	202	30	232
+45 mins.	0	0	1	1	155	75	4	234	89	0	133	222	0	173	20	193
Total Volume	0	0	6	6	621	278	16	915	345	0	520	865	0	720	91	811
% App. Total	0	0	100		67.9	30.4	1.7		39.9	0	60.1		0	88.8	11.2	
PHF	.000	.000	.500	.500	.924	.927	.800	.938	.927	.000	.897	.944	.000	.891	.758	.874

City of Glendale  
N/S: Glendale Avenue  
E/W: SR-134 Eastbound Ramps  
Weather: Clear

File Name : 02\_GDE\_Glendale\_134E Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

Groups Printed- Total Volume

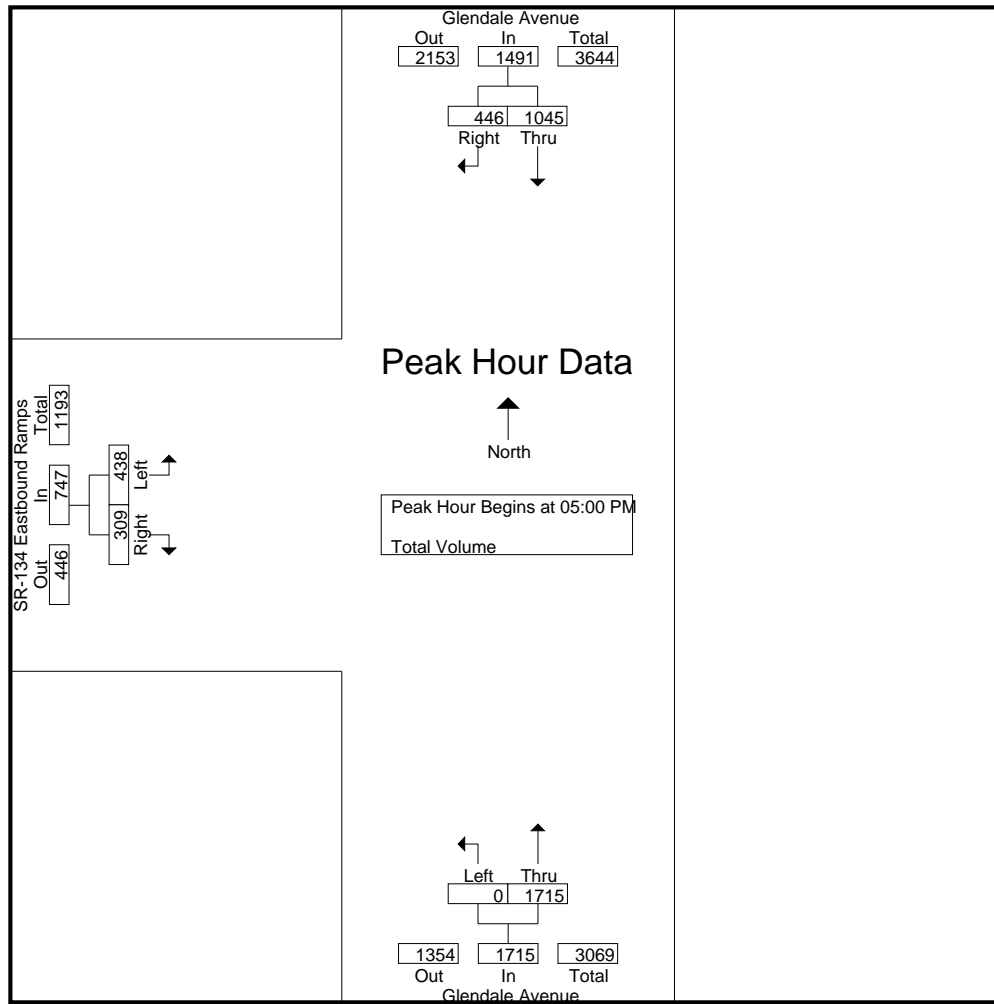
	Glendale Avenue Southbound			Glendale Avenue Northbound			SR-134 Eastbound Ramps Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	237	94	331	0	443	443	93	99	192	966
04:15 PM	201	102	303	0	381	381	98	92	190	874
04:30 PM	212	110	322	0	392	392	119	74	193	907
04:45 PM	226	112	338	0	468	468	80	72	152	958
Total	876	418	1294	0	1684	1684	390	337	727	3705
05:00 PM	262	100	362	0	426	426	106	60	166	954
05:15 PM	251	137	388	0	474	474	100	69	169	1031
05:30 PM	262	113	375	0	400	400	126	95	221	996
05:45 PM	270	96	366	0	415	415	106	85	191	972
Total	1045	446	1491	0	1715	1715	438	309	747	3953
Grand Total	1921	864	2785	0	3399	3399	828	646	1474	7658
Apprch %	69	31		0	100		56.2	43.8		
Total %	25.1	11.3	36.4	0	44.4	44.4	10.8	8.4	19.2	

	Glendale Avenue Southbound			Glendale Avenue Northbound			SR-134 Eastbound Ramps Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	262	100	362	0	426	426	106	60	166	954
05:15 PM	251	<b>137</b>	<b>388</b>	0	<b>474</b>	<b>474</b>	100	69	169	<b>1031</b>
05:30 PM	262	113	375	0	400	400	<b>126</b>	<b>95</b>	<b>221</b>	996
05:45 PM	<b>270</b>	96	366	0	415	415	106	85	191	972
Total Volume	1045	446	1491	0	1715	1715	438	309	747	3953
% App. Total	70.1	29.9		0	100		58.6	41.4		
PHF	.968	.814	.961	.000	.905	.905	.869	.813	.845	.959



City of Glendale  
N/S: Glendale Avenue  
E/W: SR-134 Eastbound Ramps  
Weather: Clear

File Name : 02\_GDE\_Glendale\_134E Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			05:00 PM		
+0 mins.	262	100	362	0	468	468	106	60	166
+15 mins.	251	<b>137</b>	<b>388</b>	0	426	426	100	69	169
+30 mins.	262	113	375	0	<b>474</b>	<b>474</b>	<b>126</b>	<b>95</b>	<b>221</b>
+45 mins.	<b>270</b>	96	366	0	400	400	106	85	191
Total Volume	1045	446	1491	0	1768	1768	438	309	747
% App. Total	70.1	29.9		0	100		58.6	41.4	
PHF	.968	.814	.961	.000	.932	.932	.869	.813	.845

City of Glendale  
N/S: Glendale Avenue  
E/W: Monterey Road  
Weather: Clear

File Name : 03\_GDE\_Glendale\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

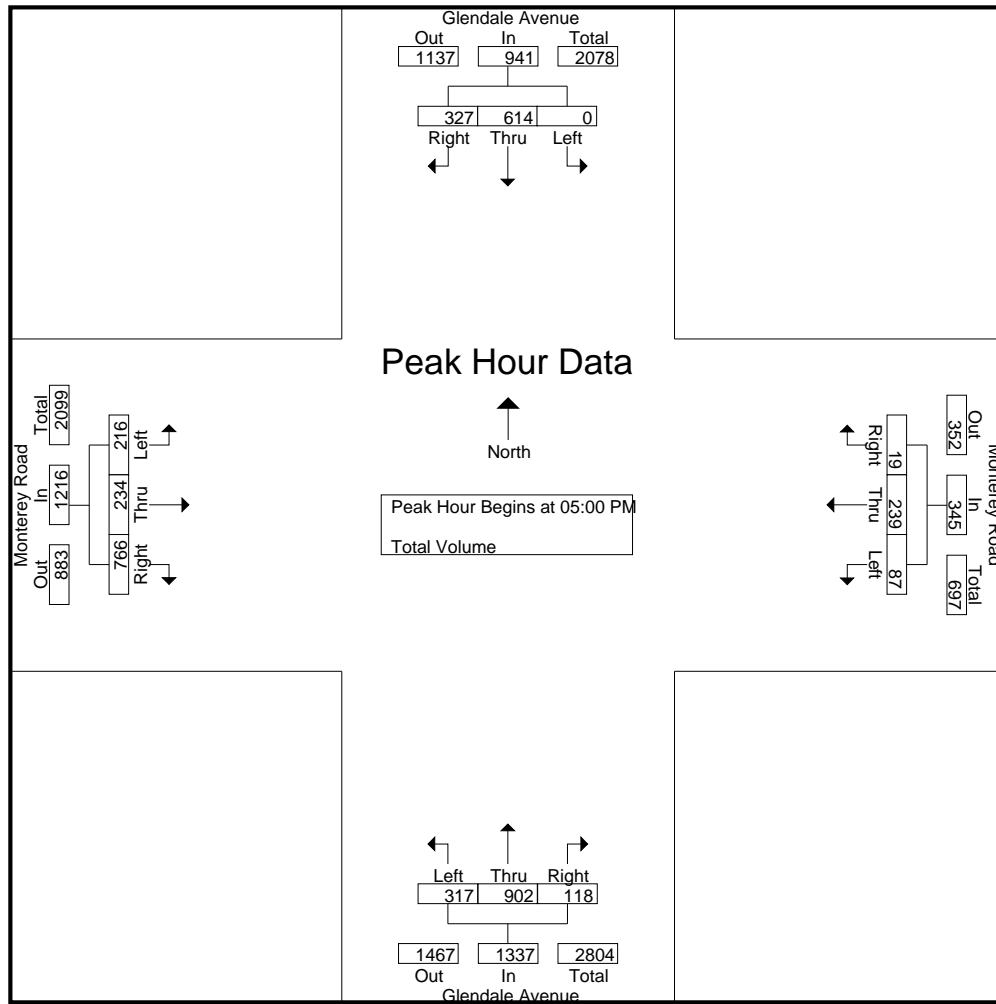
Groups Printed- Total Volume

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Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	118	76	194	16	46	13	75	104	180	23	307	28	45	182	255	831
04:15 PM	0	105	74	179	28	47	5	80	75	188	19	282	43	55	176	274	815
04:30 PM	0	141	79	220	12	45	5	62	83	209	27	319	45	28	179	252	853
04:45 PM	0	138	79	217	10	47	6	63	89	229	28	346	39	44	183	266	892
Total	0	502	308	810	66	185	29	280	351	806	97	1254	155	172	720	1047	3391
05:00 PM	0	158	94	252	21	53	6	80	93	225	31	349	44	48	181	273	954
05:15 PM	0	161	74	235	28	74	7	109	80	231	28	339	55	52	191	298	981
05:30 PM	0	152	86	238	17	70	4	91	77	234	25	336	60	73	194	327	992
05:45 PM	0	143	73	216	21	42	2	65	67	212	34	313	57	61	200	318	912
Total	0	614	327	941	87	239	19	345	317	902	118	1337	216	234	766	1216	3839
Grand Total	0	1116	635	1751	153	424	48	625	668	1708	215	2591	371	406	1486	2263	7230
Apprch %	0	63.7	36.3		24.5	67.8	7.7		25.8	65.9	8.3		16.4	17.9	65.7		
Total %	0	15.4	8.8	24.2	2.1	5.9	0.7	8.6	9.2	23.6	3	35.8	5.1	5.6	20.6	31.3	

	Glendale Avenue Southbound				Monterey Road Westbound				Glendale Avenue Northbound				Monterey Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	158	<b>94</b>	<b>252</b>	21	53	6	80	<b>93</b>	225	31	<b>349</b>	44	48	181	273	954
05:15 PM	0	<b>161</b>	74	235	<b>28</b>	<b>74</b>	<b>7</b>	<b>109</b>	80	231	28	339	55	52	191	298	981
05:30 PM	0	152	86	238	17	70	4	91	77	<b>234</b>	25	336	<b>60</b>	<b>73</b>	194	<b>327</b>	<b>992</b>
05:45 PM	0	143	73	216	21	42	2	65	67	212	<b>34</b>	313	57	61	<b>200</b>	318	912
Total Volume	0	614	327	941	87	239	19	345	317	902	118	1337	216	234	766	1216	3839
% App. Total	0	65.2	34.8		25.2	69.3	5.5		23.7	67.5	8.8		17.8	19.2	63		
PHF	.000	.953	.870	.934	.777	.807	.679	.791	.852	.964	.868	.958	.900	.801	.958	.930	.967

City of Glendale  
N/S: Glendale Avenue  
E/W: Monterey Road  
Weather: Clear

File Name : 03\_GDE\_Glendale\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	0	138	79	217	21	53	6	80	89	229	28	346	44	48	181	273
+15 mins.	0	158	<b>94</b>	<b>252</b>	<b>28</b>	<b>74</b>	<b>7</b>	<b>109</b>	<b>93</b>	225	<b>31</b>	<b>349</b>	55	52	191	298
+30 mins.	0	<b>161</b>	74	235	17	70	4	91	80	231	28	339	<b>60</b>	<b>73</b>	194	<b>327</b>
+45 mins.	0	152	86	238	21	42	2	65	77	<b>234</b>	25	336	57	61	<b>200</b>	318
Total Volume	0	609	333	942	87	239	19	345	339	919	112	1370	216	234	766	1216
% App. Total	0	64.6	35.4		25.2	69.3	5.5		24.7	67.1	8.2		17.8	19.2	63	
PHF	.000	.946	.886	.935	.777	.807	.679	.791	.911	.982	.903	.981	.900	.801	.958	.930

City of Glendale  
N/S: Glendale Avenue  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 04\_GDE\_Glendale\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

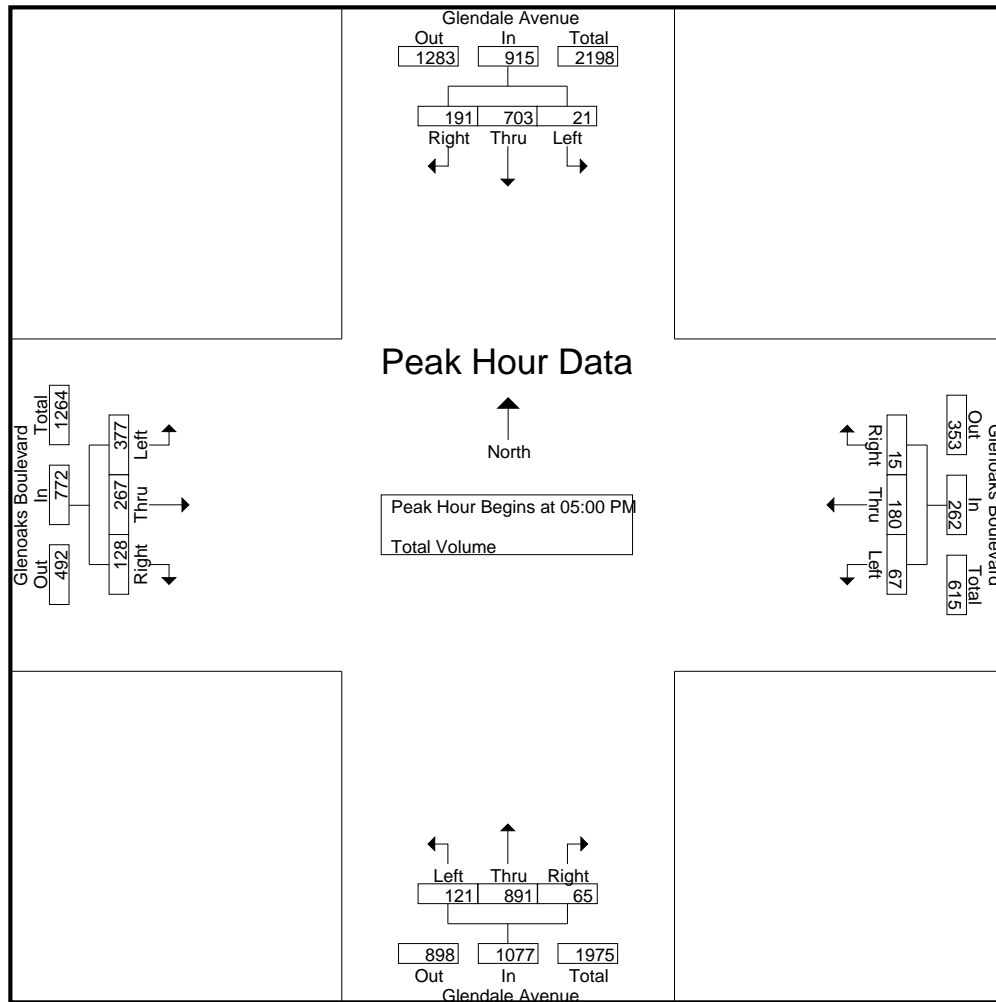
Groups Printed- Total Volume

	Glendale Avenue Southbound				Glenoaks Boulevard Westbound				Glendale Avenue Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	142	39	182	17	30	4	51	37	188	11	236	80	47	24	151	620
04:15 PM	4	180	52	236	14	24	3	41	24	186	22	232	75	33	29	137	646
04:30 PM	5	150	38	193	20	30	4	54	31	219	14	264	88	52	35	175	686
04:45 PM	11	133	39	183	12	32	6	50	30	225	18	273	81	50	32	163	669
Total	21	605	168	794	63	116	17	196	122	818	65	1005	324	182	120	626	2621
05:00 PM	4	190	53	247	11	50	5	66	29	241	18	288	88	73	33	194	795
05:15 PM	6	176	52	234	19	46	3	68	25	222	18	265	96	69	32	197	764
05:30 PM	4	160	45	209	19	50	4	73	37	207	14	258	102	60	31	193	733
05:45 PM	7	177	41	225	18	34	3	55	30	221	15	266	91	65	32	188	734
Total	21	703	191	915	67	180	15	262	121	891	65	1077	377	267	128	772	3026
Grand Total	42	1308	359	1709	130	296	32	458	243	1709	130	2082	701	449	248	1398	5647
Apprch %	2.5	76.5	21		28.4	64.6	7		11.7	82.1	6.2		50.1	32.1	17.7		
Total %	0.7	23.2	6.4	30.3	2.3	5.2	0.6	8.1	4.3	30.3	2.3	36.9	12.4	8	4.4	24.8	

	Glendale Avenue Southbound				Glenoaks Boulevard Westbound				Glendale Avenue Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	4	<b>190</b>	<b>53</b>	<b>247</b>	11	<b>50</b>	<b>5</b>	66	29	<b>241</b>	<b>18</b>	<b>288</b>	88	<b>73</b>	<b>33</b>	194	<b>795</b>
05:15 PM	6	176	52	234	<b>19</b>	46	3	68	25	222	18	265	96	69	32	<b>197</b>	764
05:30 PM	4	160	45	209	19	50	4	<b>73</b>	<b>37</b>	207	14	258	<b>102</b>	60	31	193	733
05:45 PM	<b>7</b>	177	41	225	18	34	3	55	30	221	15	266	91	65	32	188	734
Total Volume	21	703	191	915	67	180	15	262	121	891	65	1077	377	267	128	772	3026
% App. Total	2.3	76.8	20.9		25.6	68.7	5.7		11.2	82.7	6		48.8	34.6	16.6		
PHF	.750	.925	.901	.926	.882	.900	.750	.897	.818	.924	.903	.935	.924	.914	.970	.980	.952

City of Glendale  
N/S: Glendale Avenue  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 04\_GDE\_Glendale\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:30 PM				05:00 PM			
+0 mins.	4	190	53	247	11	50	5	66	31	219	14	264	88	73	33	194
+15 mins.	6	176	52	234	19	46	3	68	30	225	18	273	96	69	32	197
+30 mins.	4	160	45	209	19	50	4	73	29	241	18	288	102	60	31	193
+45 mins.	7	177	41	225	18	34	3	55	25	222	18	265	91	65	32	188
Total Volume	21	703	191	915	67	180	15	262	115	907	68	1090	377	267	128	772
% App. Total	2.3	76.8	20.9		25.6	68.7	5.7		10.6	83.2	6.2		48.8	34.6	16.6	
PHF	.750	.925	.901	.926	.882	.900	.750	.897	.927	.941	.944	.946	.924	.914	.970	.980

City of Glendale  
N/S: Adams Street  
E/W: Monterey Road  
Weather: Clear

File Name : 05\_GDE\_Adams\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

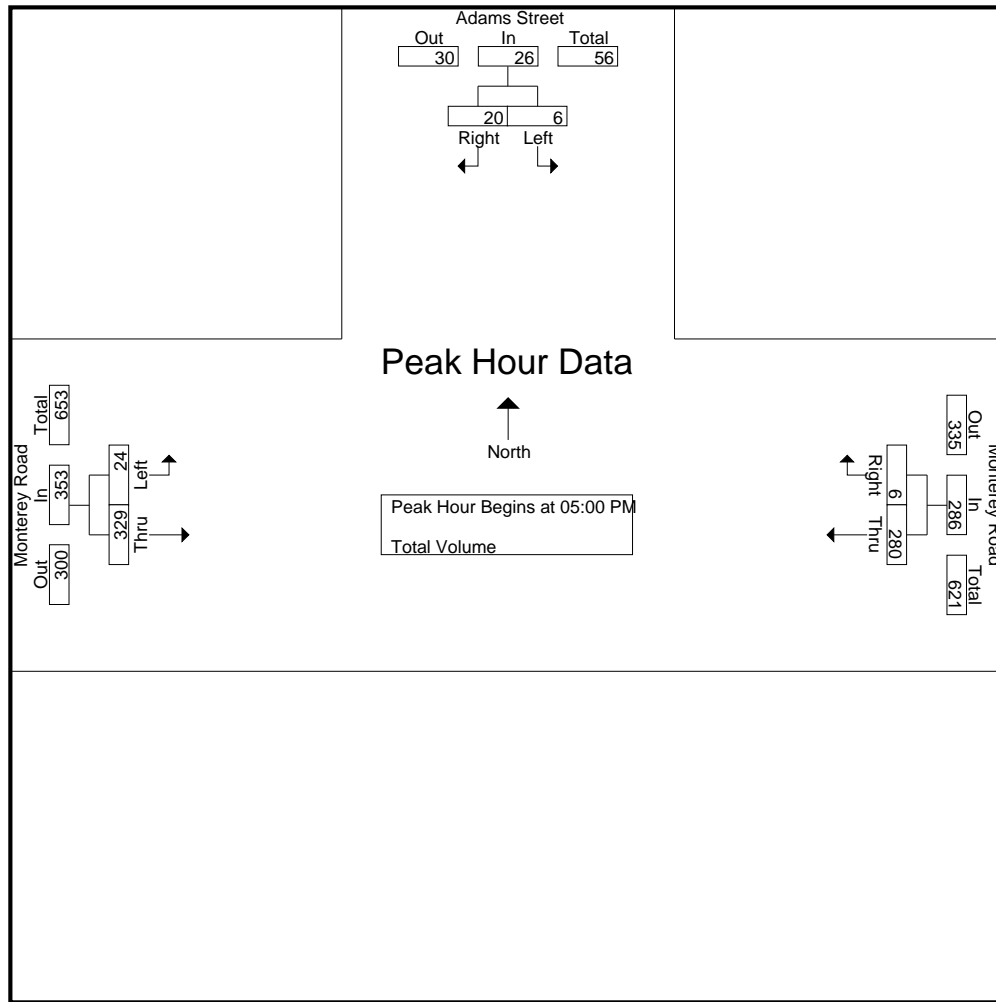
Groups Printed- Total Volume

	Adams Street Southbound			Monterey Road Westbound			Monterey Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	2	3	5	68	4	72	5	63	68	145
04:15 PM	2	1	3	60	5	65	2	74	76	144
04:30 PM	2	6	8	57	2	59	3	51	54	121
04:45 PM	2	5	7	50	2	52	5	67	72	131
Total	8	15	23	235	13	248	15	255	270	541
05:00 PM	3	4	7	71	2	73	9	70	79	159
05:15 PM	1	8	9	89	1	90	5	75	80	179
05:30 PM	2	4	6	74	3	77	5	98	103	186
05:45 PM	0	4	4	46	0	46	5	86	91	141
Total	6	20	26	280	6	286	24	329	353	665
Grand Total	14	35	49	515	19	534	39	584	623	1206
Apprch %	28.6	71.4		96.4	3.6		6.3	93.7		
Total %	1.2	2.9	4.1	42.7	1.6	44.3	3.2	48.4	51.7	

	Adams Street Southbound			Monterey Road Westbound			Monterey Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	<b>3</b>	4	7	71	2	73	<b>9</b>	70	79	159
05:15 PM	1	<b>8</b>	<b>9</b>	<b>89</b>	1	<b>90</b>	5	75	80	179
05:30 PM	2	4	6	74	<b>3</b>	77	5	<b>98</b>	<b>103</b>	<b>186</b>
05:45 PM	0	4	4	46	0	46	5	86	91	141
Total Volume	6	20	26	280	6	286	24	329	353	665
% App. Total	23.1	76.9		97.9	2.1		6.8	93.2		
PHF	.500	.625	.722	.787	.500	.794	.667	.839	.857	.894

City of Glendale  
N/S: Adams Street  
E/W: Monterey Road  
Weather: Clear

File Name : 05\_GDE\_Adams\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			05:00 PM		
+0 mins.	2	6	8	50	2	52	9	70	79
+15 mins.	2	5	7	71	2	73	5	75	80
+30 mins.	3	4	7	89	1	90	5	98	103
+45 mins.	1	8	9	74	3	77	5	86	91
Total Volume	8	23	31	284	8	292	24	329	353
% App. Total	25.8	74.2		97.3	2.7		6.8	93.2	
PHF	.667	.719	.861	.798	.667	.811	.667	.839	.857

City of Glendale  
N/S: Verdugo Circle Drive/Adams Street  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 06\_GDE\_Adams\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

Groups Printed- Total Volume

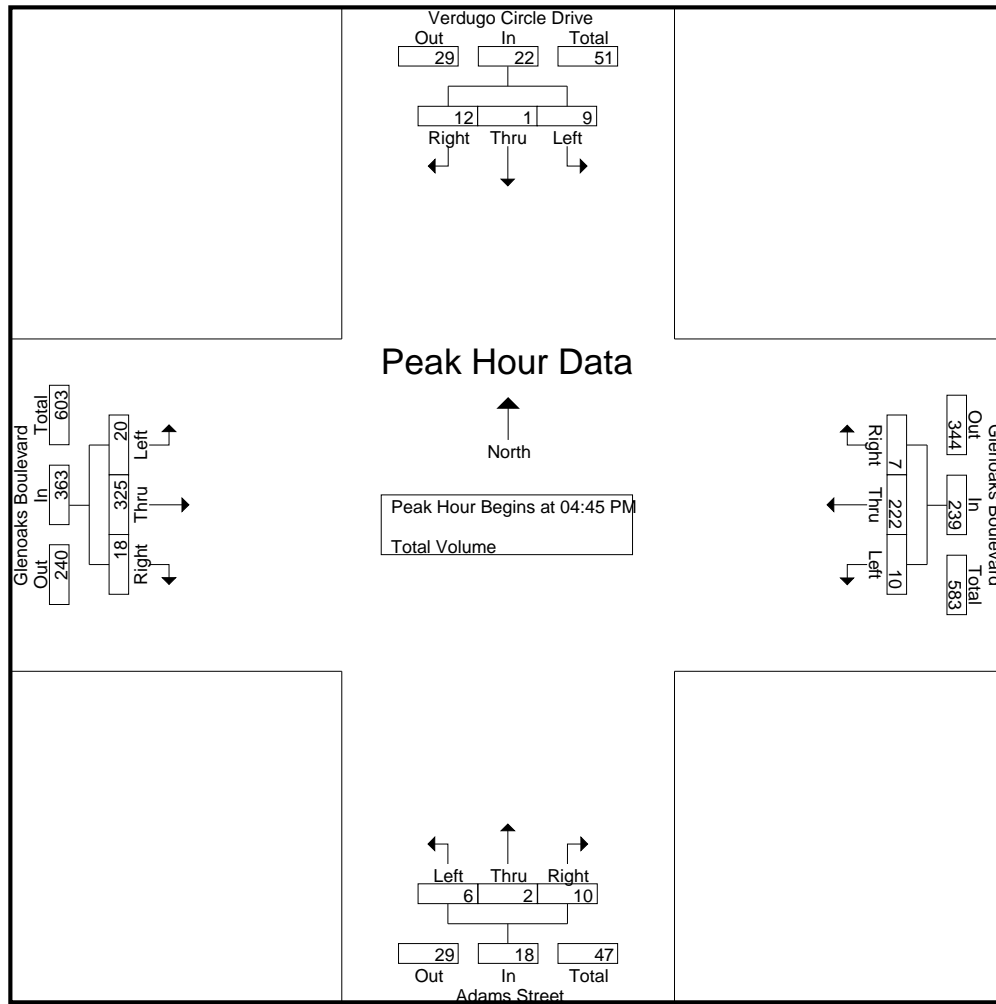
	Verdugo Circle Drive Southbound				Glenoaks Boulevard Westbound				Adams Street Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	2	3	1	51	0	52	1	0	3	4	4	35	2	41	100
04:15 PM	1	0	2	3	3	48	1	52	2	0	3	5	2	44	2	48	108
04:30 PM	1	0	2	3	3	50	0	53	1	0	2	3	1	54	3	58	117
04:45 PM	1	0	0	1	0	57	3	60	0	0	2	2	7	75	6	88	151
Total	4	0	6	10	7	206	4	217	4	0	10	14	14	208	13	235	476
05:00 PM	4	1	5	10	2	60	1	63	1	1	6	8	7	70	3	80	161
05:15 PM	2	0	7	9	2	56	1	59	3	1	1	5	5	93	5	103	176
05:30 PM	2	0	0	2	6	49	2	57	2	0	1	3	1	87	4	92	154
05:45 PM	0	0	2	2	0	45	0	45	3	0	2	5	1	73	2	76	128
Total	8	1	14	23	10	210	4	224	9	2	10	21	14	323	14	351	619
Grand Total	12	1	20	33	17	416	8	441	13	2	20	35	28	531	27	586	1095
Apprch %	36.4	3	60.6		3.9	94.3	1.8		37.1	5.7	57.1		4.8	90.6	4.6		
Total %	1.1	0.1	1.8	3	1.6	38	0.7	40.3	1.2	0.2	1.8	3.2	2.6	48.5	2.5	53.5	

	Verdugo Circle Drive Southbound				Glenoaks Boulevard Westbound				Adams Street Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	0	0	1	0	57	3	60	0	0	2	2	7	75	6	88	151
05:00 PM	4	1	5	10	2	60	1	63	1	1	6	8	7	70	3	80	161
05:15 PM	2	0	7	9	2	56	1	59	3	1	1	5	5	93	5	103	176
05:30 PM	2	0	0	2	6	49	2	57	2	0	1	3	1	87	4	92	154
Total Volume	9	1	12	22	10	222	7	239	6	2	10	18	20	325	18	363	642
% App. Total	40.9	4.5	54.5		4.2	92.9	2.9		33.3	11.1	55.6		5.5	89.5	5		
PHF	.563	.250	.429	.550	.417	.925	.583	.948	.500	.500	.417	.563	.714	.874	.750	.881	.912



City of Glendale  
N/S: Verdugo Circle Drive/Adams Street  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 06\_GDE\_Adams\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				05:00 PM				04:45 PM			
+0 mins.	1	0	2	3	0	57	3	60	1	1	6	8	7	75	6	88
+15 mins.	1	0	0	1	2	60	1	63	3	1	1	5	7	70	3	80
+30 mins.	4	1	5	10	2	56	1	59	2	0	1	3	5	93	5	103
+45 mins.	2	0	7	9	6	49	2	57	3	0	2	5	1	87	4	92
Total Volume	8	1	14	23	10	222	7	239	9	2	10	21	20	325	18	363
% App. Total	34.8	4.3	60.9		4.2	92.9	2.9		42.9	9.5	47.6		5.5	89.5	5	
PHF	.500	.250	.500	.575	.417	.925	.583	.948	.750	.500	.417	.656	.714	.874	.750	.881

City of Glendale  
N/S: Verdugo Road  
E/W: Monterey Road  
Weather: Clear

File Name : 07\_GDE\_Verdugo\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

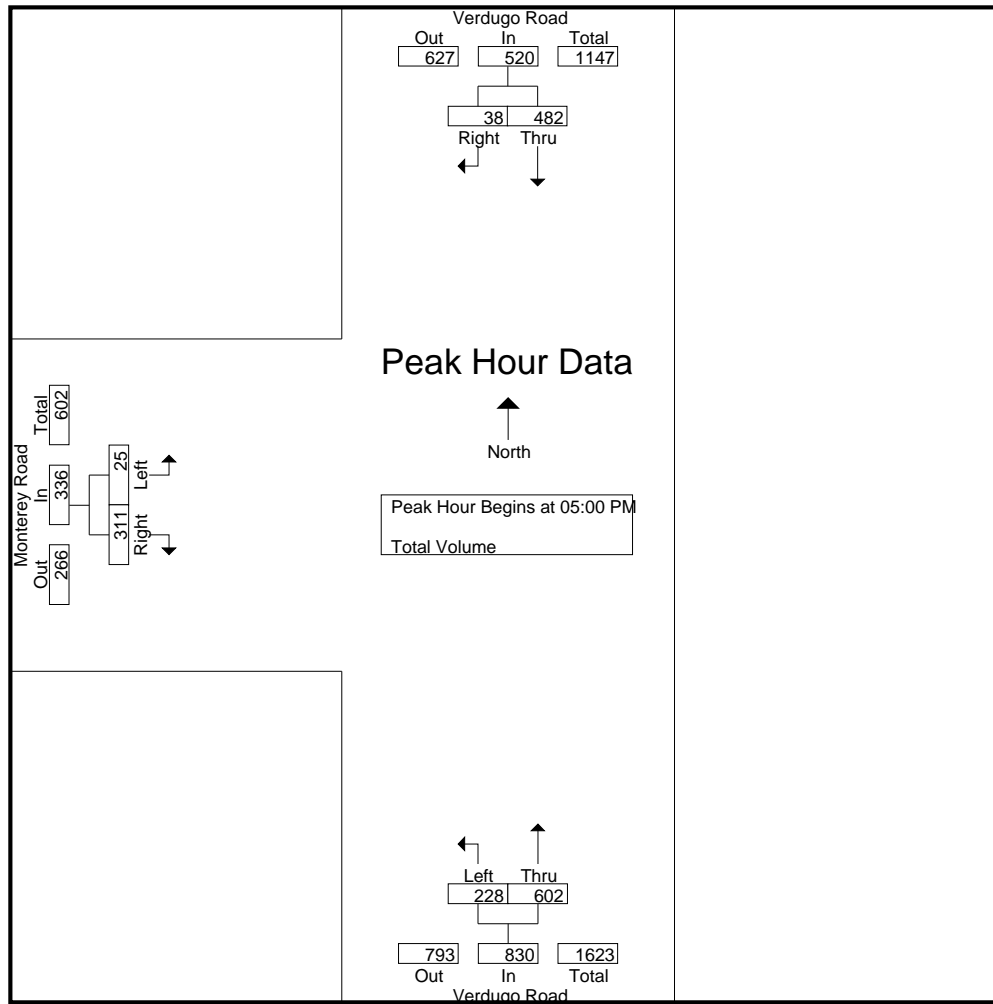
Groups Printed- Total Volume

	Verdugo Road Southbound			Verdugo Road Northbound			Monterey Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	98	9	107	45	106	151	5	59	64	322
04:15 PM	97	16	113	45	144	189	5	68	73	375
04:30 PM	121	3	124	54	114	168	5	51	56	348
04:45 PM	97	11	108	42	165	207	8	60	68	383
Total	413	39	452	186	529	715	23	238	261	1428
05:00 PM	133	10	143	61	172	233	3	60	63	439
05:15 PM	113	14	127	66	141	207	12	77	89	423
05:30 PM	114	7	121	60	135	195	5	84	89	405
05:45 PM	122	7	129	41	154	195	5	90	95	419
Total	482	38	520	228	602	830	25	311	336	1686
Grand Total	895	77	972	414	1131	1545	48	549	597	3114
Apprch %	92.1	7.9		26.8	73.2		8	92		
Total %	28.7	2.5	31.2	13.3	36.3	49.6	1.5	17.6	19.2	

	Verdugo Road Southbound			Verdugo Road Northbound			Monterey Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	<b>133</b>	10	<b>143</b>	61	<b>172</b>	<b>233</b>	3	60	63	<b>439</b>
05:15 PM	113	<b>14</b>	127	<b>66</b>	141	207	<b>12</b>	77	89	423
05:30 PM	114	7	121	60	135	195	5	84	89	405
05:45 PM	122	7	129	41	154	195	5	<b>90</b>	<b>95</b>	419
Total Volume	482	38	520	228	602	830	25	311	336	1686
% App. Total	92.7	7.3		27.5	72.5		7.4	92.6		
PHF	.906	.679	.909	.864	.875	.891	.521	.864	.884	.960

City of Glendale  
N/S: Verdugo Road  
E/W: Monterey Road  
Weather: Clear

File Name : 07\_GDE\_Verdugo\_Monterey Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			05:00 PM		
+0 mins.	<b>133</b>	10	<b>143</b>	42	165	207	3	60	63
+15 mins.	113	<b>14</b>	127	61	<b>172</b>	<b>233</b>	<b>12</b>	77	89
+30 mins.	114	7	121	<b>66</b>	141	207	5	84	89
+45 mins.	122	7	129	60	135	195	5	<b>90</b>	<b>95</b>
Total Volume	482	38	520	229	613	842	25	311	336
% App. Total	92.7	7.3		27.2	72.8		7.4	92.6	
PHF	.906	.679	.909	.867	.891	.903	.521	.864	.884

City of Glendale  
N/S: Verdugo Road  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 08\_GDE\_Verdugo\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 1

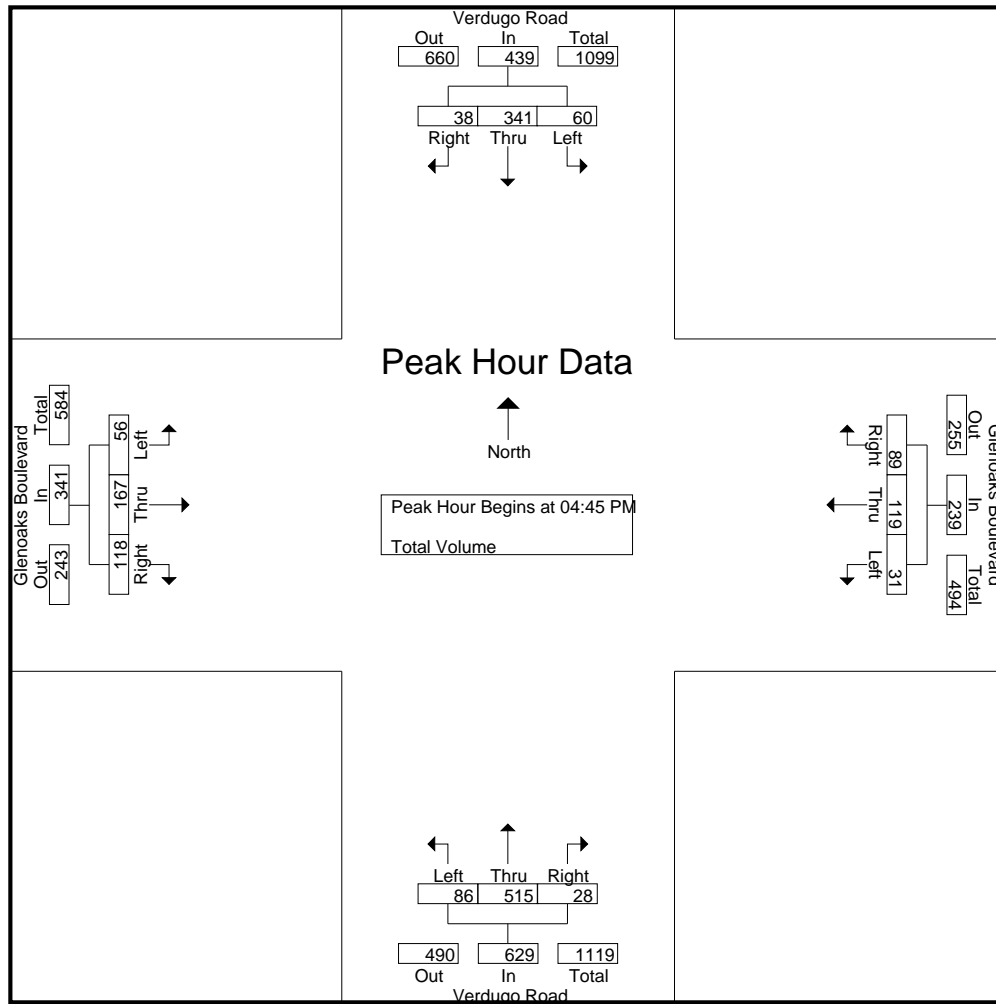
Groups Printed- Total Volume

	Verdugo Road Southbound				Glenoaks Boulevard Westbound				Verdugo Road Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	76	12	102	4	25	18	47	18	72	11	101	2	19	20	41	291
04:15 PM	7	86	15	108	3	29	16	48	21	118	6	145	4	25	20	49	350
04:30 PM	17	102	10	129	5	23	20	48	14	100	7	121	5	19	20	44	342
04:45 PM	11	82	9	102	9	31	16	56	22	137	7	166	5	48	22	75	399
Total	49	346	46	441	21	108	70	199	75	427	31	533	16	111	82	209	1382
05:00 PM	9	94	10	113	9	36	23	68	21	147	6	174	11	39	27	77	432
05:15 PM	20	86	6	112	6	27	21	54	27	118	7	152	24	39	35	98	416
05:30 PM	20	79	13	112	7	25	29	61	16	113	8	137	16	41	34	91	401
05:45 PM	13	91	10	114	7	16	4	27	19	127	10	156	6	41	28	75	372
Total	62	350	39	451	29	104	77	210	83	505	31	619	57	160	124	341	1621
Grand Total	111	696	85	892	50	212	147	409	158	932	62	1152	73	271	206	550	3003
Apprch %	12.4	78	9.5		12.2	51.8	35.9		13.7	80.9	5.4		13.3	49.3	37.5		
Total %	3.7	23.2	2.8	29.7	1.7	7.1	4.9	13.6	5.3	31	2.1	38.4	2.4	9	6.9	18.3	

	Verdugo Road Southbound				Glenoaks Boulevard Westbound				Verdugo Road Northbound				Glenoaks Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	11	82	9	102	<b>9</b>	31	16	56	22	137	7	166	5	<b>48</b>	22	75	399
05:00 PM	9	<b>94</b>	10	<b>113</b>	9	<b>36</b>	23	<b>68</b>	21	<b>147</b>	6	<b>174</b>	11	39	27	77	<b>432</b>
05:15 PM	<b>20</b>	86	6	112	6	27	21	54	<b>27</b>	118	7	152	<b>24</b>	39	<b>35</b>	<b>98</b>	416
05:30 PM	20	79	<b>13</b>	112	7	25	<b>29</b>	61	16	113	<b>8</b>	137	16	41	34	91	401
Total Volume	60	341	38	439	31	119	89	239	86	515	28	629	56	167	118	341	1648
% App. Total	13.7	77.7	8.7		13	49.8	37.2		13.7	81.9	4.5		16.4	49	34.6		
PHF	.750	.907	.731	.971	.861	.826	.767	.879	.796	.876	.875	.904	.583	.870	.843	.870	.954

City of Glendale  
N/S: Verdugo Road  
E/W: Glenoaks Boulevard  
Weather: Clear

File Name : 08\_GDE\_Verdugo\_Glenoaks Tues PM  
Site Code : 22119656  
Start Date : 10/8/2019  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	17	<b>102</b>	<b>10</b>	<b>129</b>	<b>9</b>	31	16	56	22	137	7	166	5	<b>48</b>	22	75
+15 mins.	11	82	9	102	9	<b>36</b>	23	<b>68</b>	21	<b>147</b>	6	<b>174</b>	11	39	27	77
+30 mins.	9	94	10	113	6	27	21	54	<b>27</b>	118	7	152	<b>24</b>	39	<b>35</b>	<b>98</b>
+45 mins.	<b>20</b>	86	6	112	7	25	<b>29</b>	61	16	113	<b>8</b>	137	16	41	34	91
Total Volume	57	364	35	456	31	119	89	239	86	515	28	629	56	167	118	341
% App. Total	12.5	79.8	7.7		13	49.8	37.2		13.7	81.9	4.5		16.4	49	34.6	
PHF	.713	.892	.875	.884	.861	.826	.767	.879	.796	.876	.875	.904	.583	.870	.843	.870

# Counts Unlimited, Inc.

Page 1

City of Glendale  
Adams Street  
B/ Glenoaks Boulevard - Monterey Road  
24 Hour Directional Volume Count

PO Box 1178  
Corona, CA 92878  
Phone: (951) 268-6268  
email: counts@countsunlimited.com

GDE002  
Site Code: 221-19656

Start Time	08-Oct-19 Tue	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	5			1	4				
12:15		1	2			0	4				
12:30		0	1			1	4				
12:45		0	2	3	10	0	8	2	20	5	30
01:00		2	3			2	7				
01:15		0	1			0	9				
01:30		0	4			0	6				
01:45		1	5	3	13	0	5	2	27	5	40
02:00		1	1			1	5				
02:15		0	8			0	4				
02:30		0	18			0	8				
02:45		1	57	2	84	0	38	1	55	3	139
03:00		0	14			0	10				
03:15		1	6			1	4				
03:30		0	3			0	6				
03:45		2	2	3	25	0	7	1	27	4	52
04:00		0	9			0	4				
04:15		0	6			1	2				
04:30		0	3			0	7				
04:45		0	7	0	25	0	6	1	19	1	44
05:00		1	12			0	6				
05:15		1	4			0	10				
05:30		2	5			1	5				
05:45		0	4	4	25	2	3	3	24	7	49
06:00		2	4			1	4				
06:15		0	10			3	3				
06:30		5	4			3	7				
06:45		10	3	17	21	8	3	15	17	32	38
07:00		0	4			8	5				
07:15		8	7			2	2				
07:30		36	3			26	6				
07:45		52	5	96	19	30	2	66	15	162	34
08:00		5	6			3	5				
08:15		3	3			5	0				
08:30		1	3			3	2				
08:45		0	5	9	17	10	2	21	9	30	26
09:00		2	1			7	3				
09:15		3	3			5	2				
09:30		5	2			5	2				
09:45		0	2	10	8	2	3	19	10	29	18
10:00		2	3			2	2				
10:15		4	4			2	1				
10:30		1	1			0	3				
10:45		2	2	9	10	5	3	9	9	18	19
11:00		1	1			9	1				
11:15		2	3			4	0				
11:30		0	0			4	0				
11:45		5	0	8	4	3	0	20	1	28	5
Total		164	261	164	261	160	233	160	233	324	494
Combined Total		425		425		393		393		818	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	101	-	-	-	66	-	-	-	-	-
P.H.F.		0.486				0.550					
PM Peak	-	-	02:15	-	-	-	02:15	-	-	-	-
Vol.	-	-	97	-	-	-	60	-	-	-	-
P.H.F.			0.425				0.395				
Percentage		38.6%	61.4%			40.7%	59.3%				
ADT/AADT		ADT 818		AADT 818							

## Appendix C. Intersection Turn Movement Volumes and LOS Worksheets, Existing Conditions

## Appendices

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## Wilson Middle School

Vistro File: Y:\...\Nov\_2019\_WilsonMS.vistro

Scenario 1 Existing Weekday PM

Report File: Y:\...\Existing\_PM.pdf

12/4/2019

**Intersection Analysis Summary**





ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SR-134 WB Ramps at Monterey Road	Signalized	ICU 1	NB Right	0.849	-	D
2	Glendale Avenue at SR-134 EB Ramps	Signalized	ICU 1	NEB Thru	0.675	-	B
3	Glendale Avenue at Monterey Road	Signalized	ICU 1	EB Right	0.876	-	D
4	Glendale Avenue at Glenoaks Boulevard	Signalized	ICU 1	NEB Thru	0.757	-	C
5	Adams Street at Monterey Road	Two-way stop	HCM 6th Edition	SB Left	0.062	15.4	C
6	Adams Street at Glenoaks Boulevard	Two-way stop	HCM 6th Edition	SB Left	0.028	15.6	C
7	Verdugo Road at Monterey Road	Signalized	ICU 1	EB Right	0.614	-	B
8	Verdugo Road at Glenoaks Boulevard	Signalized	ICU 1	EB Thru	0.511	-	A

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: SR-134 WB Ramps at Monterey Road**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

**Intersection Setup**

Name	SR-134 WB Ramps			Cordova Avenue						Monterey Road		
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			Yes			Yes			Yes		

**Volumes**

Name	SR-134 WB Ramps			Cordova Avenue						Monterey Road		
Base Volume Input [veh/h]	345	0	520	0	0	6	0	720	91	602	273	15
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300	1.0300	1.0000	1.0300	1.0000
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]	355	0	520	0	0	6	0	742	94	602	281	15
Peak Hour 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
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]	89	0	130	0	0	2	0	186	24	151	70	4
Total Analysis Volume [veh/h]	355	0	520	0	0	6	0	742	94	602	281	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	0	2	0	0	6	0	8	0	7	4	0
Auxiliary Signal Groups			2									
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.22	0.00	0.33	0.00	0.00	0.00	0.00	0.23	0.06	0.19	0.19	0.19
Intersection LOS	D											
Intersection V/C	0.849											

**Intersection Level Of Service Report**  
**Intersection 2: Glendale Avenue at SR-134 EB Ramps**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

**Intersection Setup**

Name						
Approach	Northeastbound		Southwestbound		Southeastbound	
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	Yes		Yes		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	0	1882	1037	504	440	359
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300
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]	0	1938	1068	519	453	370
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]	0	485	267	130	113	93
Total Analysis Volume [veh/h]	0	1938	1068	519	453	370
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Overlap	Permissive	Permissive
Signal Group	0	2	6	6	3	0
Auxiliary Signal Groups				6		
Lead / Lag	-	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**





V/C, Movement V/C Ratio	0.00	0.40	0.33	0.32	0.14	0.17
Intersection LOS	B					
Intersection V/C	0.675					

### Intersection Level Of Service Report

#### Intersection 3: Glendale Avenue at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

#### Intersection Setup

Name				Glendale Avenue			Monterey Road			Monterey Road		
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			Yes			Yes			Yes		

#### Volumes

Name				Glendale Avenue			Monterey Road			Monterey Road		
Base Volume Input [veh/h]	317	902	118	0	614	327	216	234	766	87	239	19
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0000	1.0300	1.0000	1.0000	1.0000	1.0300	1.0300	1.0000	1.0000
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]	327	929	122	0	632	327	216	234	789	90	239	19
Peak Hour 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
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]	82	232	31	0	158	82	54	59	197	23	60	5
Total Analysis Volume [veh/h]	327	929	122	0	632	327	216	234	789	90	239	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	4	0	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.10	0.33	0.33	0.00	0.13	0.20	0.14	0.15	0.39	0.06	0.08	0.08
Intersection LOS	D											
Intersection V/C	0.876											

**Intersection Level Of Service Report**  
**Intersection 4: Glendale Avenue at Glenoaks Boulevard**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

**Intersection Setup**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left2	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			Yes			Yes			Yes		

**Volumes**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Base Volume Input [veh/h]	121	971	65	22	727	172	67	180	14	338	267	128
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0000	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300	1.0300	1.0000	1.0000
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]	121	1000	65	23	749	177	67	180	14	348	267	128
Peak Hour 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
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]	30	250	16	6	187	44	17	45	4	87	67	32
Total Analysis Volume [veh/h]	121	1000	65	23	749	177	67	180	14	348	267	128
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		



**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.08	0.31	0.04	0.01	0.19	0.19	0.04	0.11	0.01	0.22	0.17	0.08
Intersection LOS	C											
Intersection V/C	0.757											

### Intersection Level Of Service Report

#### Intersection 5: Adams Street at Monterey Road

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

#### Intersection Setup

Name	Adams Street		Monterey Road			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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	Yes		Yes		Yes	

#### Volumes

Name	Adams Street		Monterey Road			
Base Volume Input [veh/h]	20	6	24	329	280	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0000	1.0300	1.0300	1.0300
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]	21	6	24	339	288	6
Peak Hour Factor	0.9050	0.9050	0.9050	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	2	7	94	80	2
Total Analysis Volume [veh/h]	23	7	27	375	318	7
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	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.38	10.67	7.98	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.78	5.78	1.68	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.28		0.54		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	C					

### Intersection Level Of Service Report

#### Intersection 6: Adams Street at Glenoaks Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

#### Intersection Setup

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
Base Volume Input [veh/h]	6	2	10	9	1	12	20	325	18	10	222	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
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]	6	2	10	9	1	12	20	325	18	10	222	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	2	1	3	2	0	3	5	88	5	3	60	2
Total Analysis Volume [veh/h]	7	2	11	10	1	13	22	353	20	11	241	8
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	0.02	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.53	15.26	10.60	15.59	15.37	9.89	7.78	0.00	0.00	8.07	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.15	0.15	0.15	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	3.24	3.24	3.24	3.74	3.74	3.74	1.27	1.27	1.27	0.70	0.70	0.70
d_A, Approach Delay [s/veh]	12.79			12.50			0.43			0.34		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.17											
Intersection LOS	C											

### Intersection Level Of Service Report

#### Intersection 7: Verdugo Road at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

#### Intersection Setup

Name	Verdugo Road					
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	Yes		Yes		Yes	

#### Volumes

Name	Verdugo Road					
Base Volume Input [veh/h]	228	602	482	38	25	311
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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]	235	620	496	39	26	320
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]	59	155	124	10	7	80
Total Analysis Volume [veh/h]	235	620	496	39	26	320
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	ProtPerm	Permissive	Permissive	Permissive	Split	Split
Signal Group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.15	0.19	0.17	0.17	0.02	0.20
Intersection LOS	B					
Intersection V/C	0.614					

### Intersection Level Of Service Report

#### Intersection 8: Verdugo Road at Glenoaks Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

#### Intersection Setup

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
Base Volume Input [veh/h]	86	515	28	60	341	38	56	167	118	31	119	89
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0000	1.0000	1.0300
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]	86	530	28	62	351	39	58	167	118	31	119	92
Peak Hour 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
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]	22	133	7	16	88	10	15	42	30	8	30	23
Total Analysis Volume [veh/h]	86	530	28	62	351	39	58	167	118	31	119	92
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		



**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

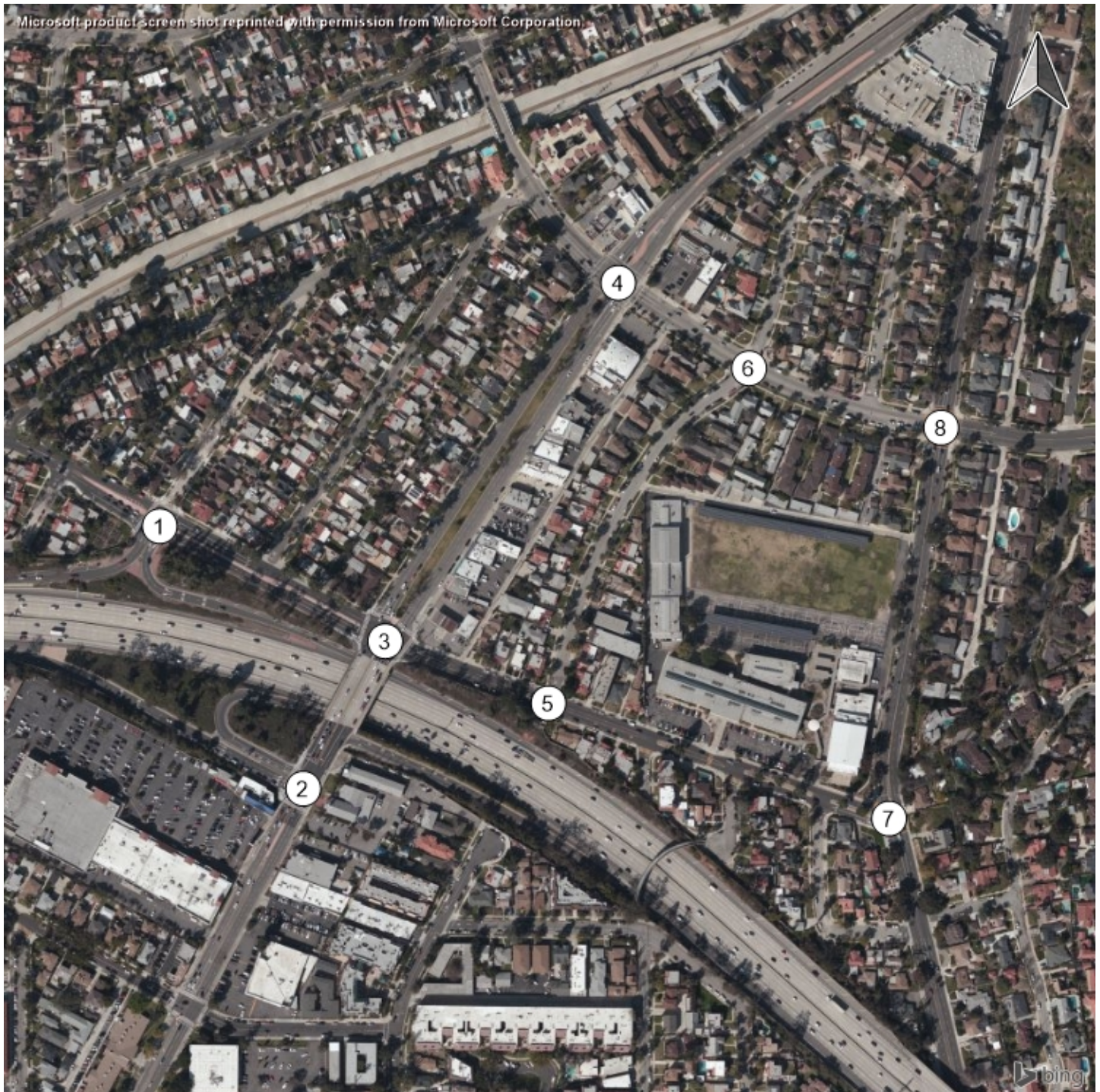
**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

**Movement, Approach, & Intersection Results**

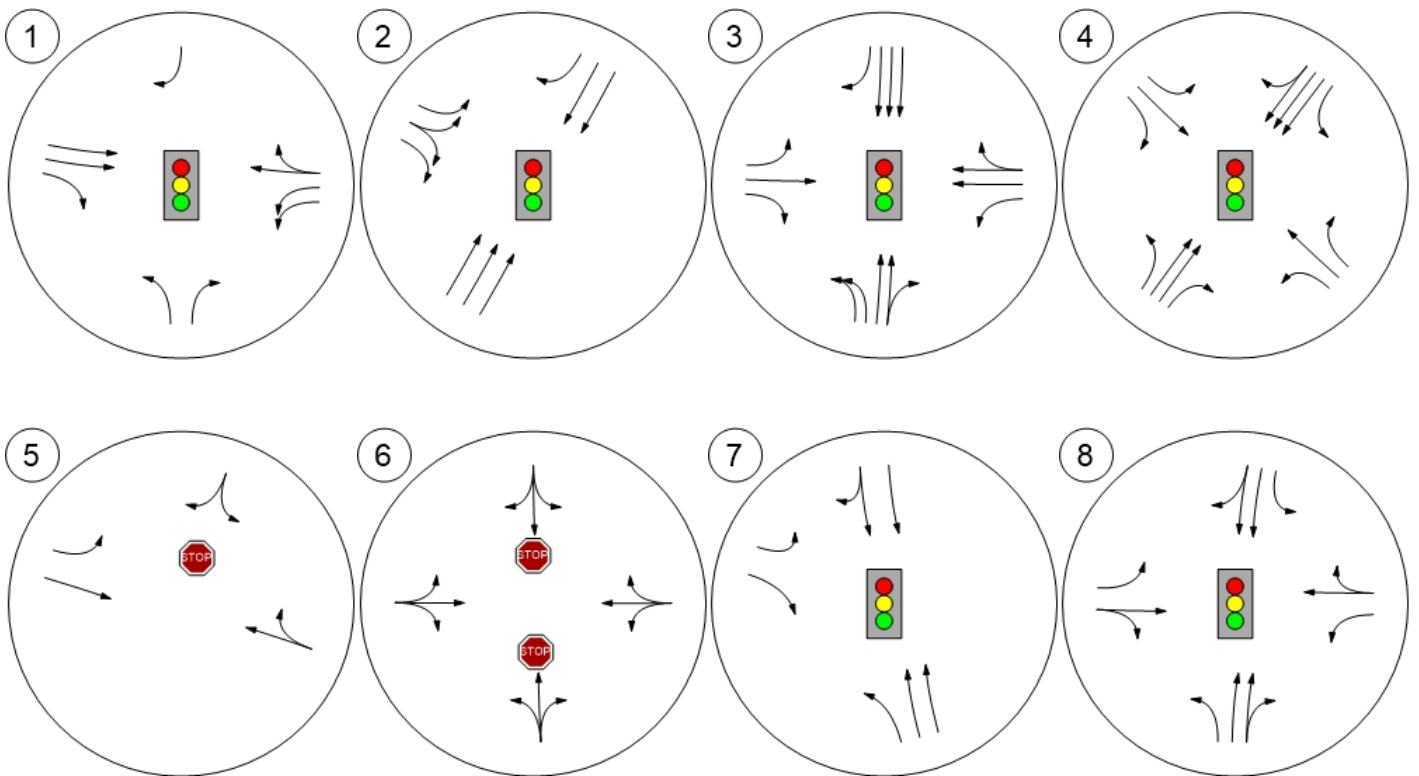
V/C, Movement V/C Ratio	0.05	0.17	0.17	0.04	0.12	0.12	0.04	0.18	0.18	0.02	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.511											

## Study Intersections

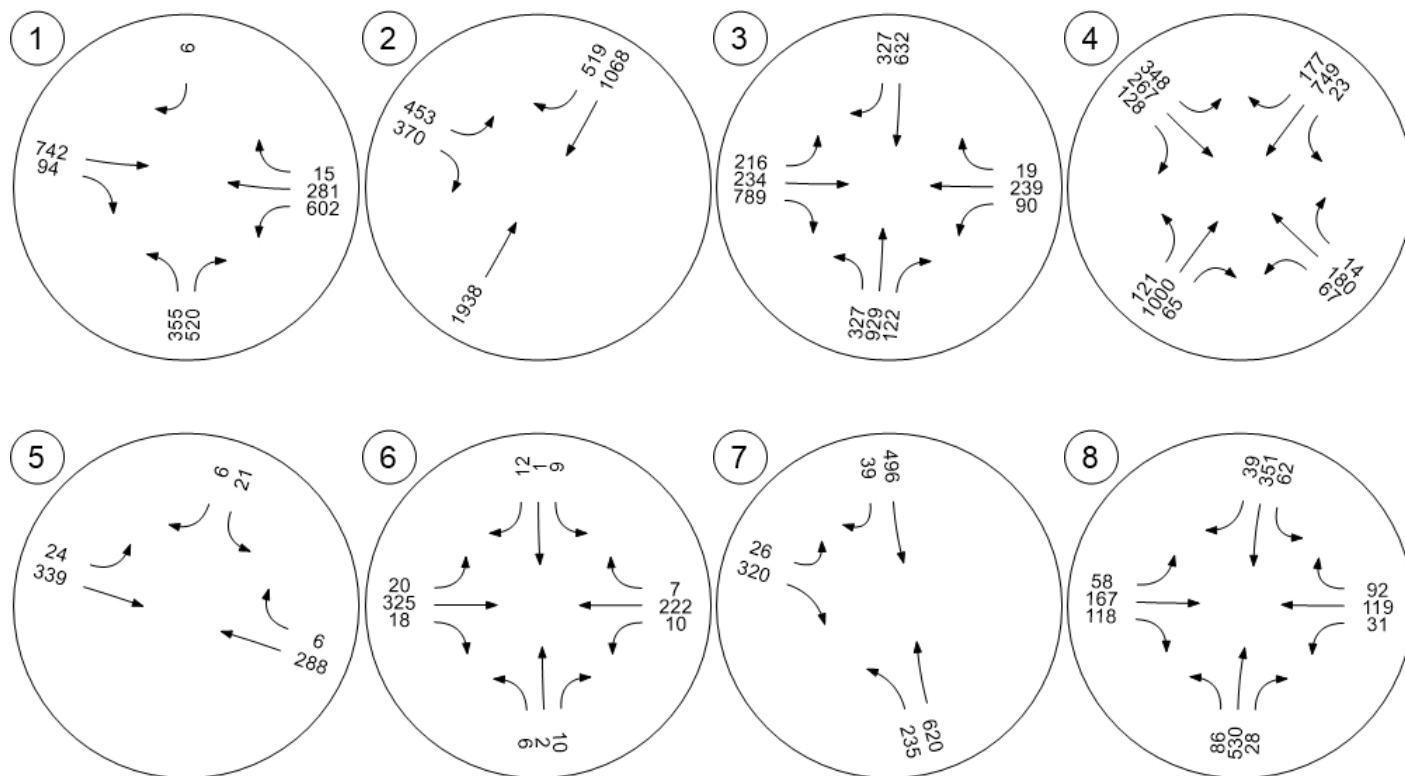
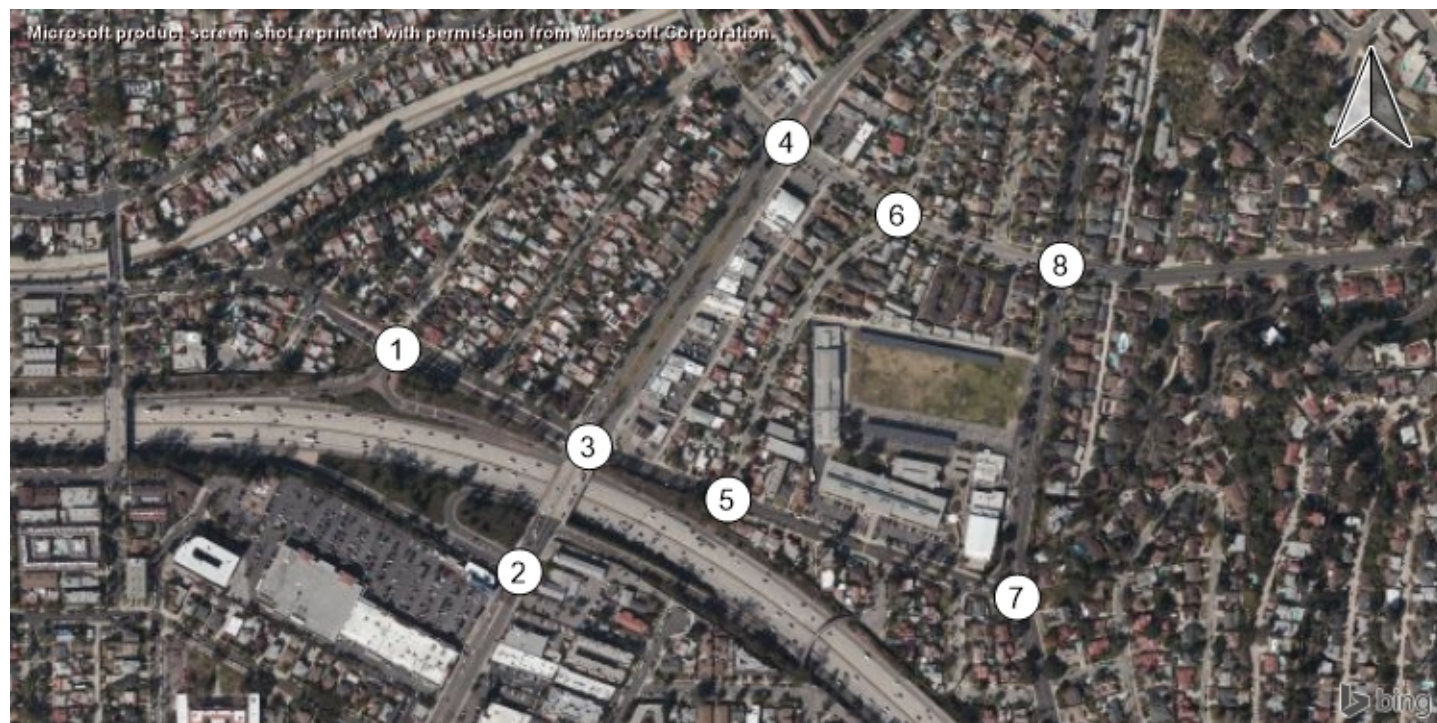




## Lane Configuration and Traffic Control



# Traffic Volume - Future Total Volume



## Appendix D. Parking Counts and Worksheets

## Appendices

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Project Title - Woodrow Wilson Middle School - Glendale, CA  
Parking Occupancy Survey  
Location: Woodrow Wilson Middle School  
Date: Saturday, October 5th, 2019

Parking Lot	Inv	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
Unmarked Stall	65	26	30	29	38	43	37	37	24	24	24	20	31	25	22	33	22	23	24	23	22	5	4	4	4	4	4	4	5	5
Handicapped	4	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Occupancy	69	26	31	30	39	44	38	38	25	25	25	20	31	25	22	33	23	23	24	23	22	5	4	4	4	4	4	4	5	5
Total Percent	-	38%	45%	43%	57%	64%	55%	55%	36%	36%	36%	29%	45%	36%	32%	48%	33%	33%	35%	33%	32%	7%	6%	6%	6%	6%	6%	6%	7%	7%

Street Parking	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
Brianwood Lane	5	4	4	4	4	6	6	4	5	5	5	5	6	6	6	6	7	9	7	7	6	6	6	6	6	5	5	5	5
E Glenoaks Blvd (E)	12	15	13	14	10	7	7	10	9	10	8	6	7	7	8	7	7	5	6	6	4	5	5	6	6	6	6	7	7
E Glenoaks Blvd (C)	66	65	64	58	57	48	51	57	59	58	58	63	53	56	60	56	59	58	55	56	53	53	55	54	52	51	49	49	49
Glenvista Drive (S)	6	5	5	5	5	5	5	5	6	4	4	4	4	4	4	4	5	5	5	5	5	5	6	6	7	7	7	7	7
Glenvista Drive (N)	7	9	9	9	9	9	7	7	5	8	6	8	9	10	11	11	9	9	10	8	7	7	7	7	8	10	11	10	10
Sylvanoak Drive (S)	17	18	18	17	16	15	16	13	9	10	12	12	12	12	12	12	13	15	19	18	17	18	19	19	19	19	19	18	18
Sylvanoak Drive (N)	8	8	6	5	7	8	8	8	8	9	11	11	10	11	11	10	9	9	9	9	10	11	10	10	9	9	9	9	9
N Verdugo Rd	117	117	118	118	118	103	108	111	109	115	112	111	110	108	103	102	103	105	105	103	82	79	81	87	89	91	93	96	99
Verdugo Circle	63	64	67	62	65	62	64	65	70	78	77	71	60	52	52	52	53	57	54	49	50	51	53	56	55	55	54	58	60
N Glendale Avenue	32	36	36	35	35	37	46	41	46	46	49	41	50	48	45	43	41	36	36	32	30	33	29	26	26	28	31	30	22
Monterey Road (W)	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	5	4	4	4	5	5	5	5
Monterey Road (E)	30	30	29	31	28	28	30	31	29	29	31	31	31	30	29	28	27	27	27	27	27	30	28	26	26	28	27	26	26
Woodbury Road	17	16	16	15	15	14	12	13	13	15	16	13	12	13	14	19	20	21	22	20	20	19	19	19	18	17	15	16	18
Grove Place (N)	6	8	11	12	11	7	7	6	6	6	6	6	10	8	8	6	6	5	4	6	6	6	5	5	5	5	5	6	4
Galer Place (N)	3	3	3	3	4	4	4	5	5	4	4	4	6	6	7	7	7	7	6	6	5	6	7	10	12	16	17	17	16
Naranja Drive (N)	4	5	4	4	4	3	2	2	2	3	3	3	2	2	3	3	3	2	2	2	2	2	2	2	1	1	1	1	1
N Adams St (N)	63	63	61	57	60	59	57	61	60	58	57	58	57	57	58	58	58	60	60	60	58	59	54	56	57	58	59	60	60
Portola Avenue	50	49	48	50	50	46	45	46	42	45	45	43	47	49	47	47	50	52	53	52	51	47	46	45	45	45	47	48	50
E Glenoaks Blvd (W)	6	6	7	7	6	6	6	6	6	7	6	8	8	9	8	7	7	6	6	6	5	6	6	7	7	7	6	7	7
E Doran Street (W)	23	24	25	24	21	22	22	21	23	23	23	21	26	24	22	22	24	22	24	25	24	24	23	23	23	24	25	25	25
N Adams St (S)	58	58	57	56	58	58	58	57	54	63	60	64	60	60	59	64	61	59	63	60	59	62	64	63	66	66	65	64	59
E Doran Street (E)	47	46	47	43	44	43	41	40	40	38	35	37	40	39	42	39	39	41	44	45	49	46	43	47	51	51	52	50	50
Naranja Drive (S)	48	49	45	43	40	41	40	38	39	39	36	37	33	36	38	37	38	41	41	38	40	41	42	43	46	46	47	47	48
Galer Place (S)	13	10	10	9	9	9	12	12	13	13	13	13	13	12	12	12	11	11	11	11	11	11	11	11	12	13	13	13	13
Richard Place	29	28	28	27	28	24	24	24	25	24	27	27	25	25	28	28	31	30	30	33	33	31	32	33	30	30	29	29	31
Grove Place (S)	15	15	16	15	17	17	18	19	22	22	21	21	21	21	22	22	22	21	22	22	21	22	21	20	20	20	21	19	18
Total Occupancy	748	754	750	726	724	684	698	704	707	733	725	720	715	706	711	706	714	716	724	710	678	684	679	691	700	713	718	722	717



**Project Title - Woodrow Wilson Middle School - Glendale, CA**

Parking Occupancy Survey

Location: Woodrow Wilson Middle SchoolDate: Tuesday, October 8th, 2019

Parking Lot	Inv	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
Unmarked Stall	65	33	17	9	15	24	23	9	9	10	4	3
Handicapped	4	1	0	0	0	0	0	0	0	0	0	0
Total Occupancy	69	34	17	9	15	24	23	9	9	10	4	3
Total Percent	-	49%	25%	13%	22%	35%	33%	13%	13%	14%	6%	4%

Street Parking	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
Briarwood Lane	5	5	6	6	7	7	8	7	7	5	4
E Glenoaks Blvd (E)	2	3	3	4	5	6	6	6	8	8	6
E Glenoaks Blvd (C)	40	42	47	53	55	55	54	57	59	59	59
Glenvista Drive (S)	4	3	3	4	4	5	5	5	5	5	4
Glenvista Drive (N)	3	2	3	6	6	7	7	6	7	6	6
Sylvanoak Drive (S)	14	13	13	15	15	16	16	18	18	16	16
Sylvanoak Drive (N)	6	7	9	6	7	7	8	9	9	10	10
N Verdugo Rd	78	75	87	86	93	100	99	100	103	104	110
Verdugo Circle	52	47	46	49	49	51	52	53	58	61	62
N Glendale Avenue	26	30	29	31	27	28	28	29	29	31	30
Monterey Road (W)	2	3	3	3	3	4	4	4	4	4	4
Monterey Road (E)	27	27	28	29	28	26	24	24	27	27	27
Woodbury Road	13	14	15	15	14	14	14	14	14	15	16
Grove Place (N)	6	4	5	6	7	8	8	9	9	7	8
Galer Place (N)	6	4	6	6	10	11	9	11	11	9	9
Naranja Drive (N)	1	3	3	4	4	3	5	5	5	6	5
N Adams St (N)	46	48	53	61	59	62	62	63	63	63	63
Portola Avenue	41	44	45	48	49	50	52	55	58	57	59
E Glenoaks Blvd (W)	5	6	8	5	6	7	7	7	7	8	8
E Doran Street (W)	23	24	22	24	23	24	25	24	25	26	24
N Adams St (S)	53	55	58	61	56	56	59	58	58	58	57
E Doran Street (E)	37	43	49	48	47	53	55	57	60	59	59
Naranja Drive (S)	39	42	44	46	45	47	47	47	48	49	48
Galer Place (S)	6	6	7	7	8	11	11	11	11	13	16
Richard Place	21	22	24	25	26	25	26	28	29	31	33
Grove Place (S)	14	15	14	16	16	13	14	16	18	19	20
Total Occupancy	570	587	630	664	669	696	705	723	750	756	763



## Appendix E. Intersection Turn Movement Volumes and LOS Worksheets, Existing With Project Conditions

## Appendices

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## Wilson Middle School

Vistro File: Y:\...\Nov\_2019\_WilsonMS.vistro

Scenario 7 E+P Weekday PM

Report File: Y:\...\E+P\_PM.pdf

12/4/2019

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SR-134 WB Ramps at Monterey Road	Signalized	ICU 1	NB Right	0.850	-	D
2	Glendale Avenue at SR-134 EB Ramps	Signalized	ICU 1	NEB Thru	0.678	-	B
3	Glendale Avenue at Monterey Road	Signalized	ICU 1	EB Right	0.984	-	E
4	Glendale Avenue at Glenoaks Boulevard	Signalized	ICU 1	NEB Thru	0.758	-	C
5	Adams Street at Monterey Road	Two-way stop	HCM 6th Edition	SB Left	0.065	15.9	C
6	Adams Street at Glenoaks Boulevard	Two-way stop	HCM 6th Edition	SB Left	0.028	15.6	C
7	Verdugo Road at Monterey Road	Signalized	ICU 1	EB Right	0.625	-	B
8	Verdugo Road at Glenoaks Boulevard	Signalized	ICU 1	EB Thru	0.513	-	A





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: SR-134 WB Ramps at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

#### Intersection Setup

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
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			Yes			Yes			Yes		

#### Volumes

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
Base Volume Input [veh/h]	345	0	520	0	0	6	0	720	91	602	273	15
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300	1.0300	1.0000	1.0300	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	0	0	0	0	0	2	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]	355	0	522	0	0	6	0	742	94	602	283	15
Peak Hour 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
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]	89	0	131	0	0	2	0	186	24	151	71	4
Total Analysis Volume [veh/h]	355	0	522	0	0	6	0	742	94	602	283	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	0	2	0	0	6	0	8	0	7	4	0
Auxiliary Signal Groups			2									
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.22	0.00	0.33	0.00	0.00	0.00	0.00	0.23	0.06	0.19	0.19	0.19
Intersection LOS	D											
Intersection V/C	0.850											

**Intersection Level Of Service Report**  
**Intersection 2: Glendale Avenue at SR-134 EB Ramps**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

**Intersection Setup**

Name						
Approach	Northeastbound		Southwestbound		Southeastbound	
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	Yes		Yes		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	0	1882	1037	504	440	359
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	3	1	3	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]	0	1948	1071	520	456	370
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]	0	487	268	130	114	93
Total Analysis Volume [veh/h]	0	1948	1071	520	456	370
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Overlap	Permissive	Permissive
Signal Group	0	2	6	6	3	0
Auxiliary Signal Groups				6		
Lead / Lag	-	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**





V/C, Movement V/C Ratio	0.00	0.41	0.33	0.33	0.14	0.17
Intersection LOS	B					
Intersection V/C	0.678					

### Intersection Level Of Service Report

#### Intersection 3: Glendale Avenue at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.882

#### Intersection Setup

Name				Glendale Avenue			Monterey Road			Monterey Road		
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			Yes			Yes			Yes		

#### Volumes

Name				Glendale Avenue			Monterey Road			Monterey Road		
Base Volume Input [veh/h]	317	902	118	0	614	327	216	234	766	87	239	19
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0000	1.0300	1.0000	1.0000	1.0000	1.0300	1.0300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	13	5	0	0	0	2	0	4	2	3
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]	327	929	135	5	632	327	216	236	789	94	241	22
Peak Hour 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
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]	82	232	34	1	158	82	54	59	197	24	60	6
Total Analysis Volume [veh/h]	327	929	135	5	632	327	216	236	789	94	241	22
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		



**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	4	0	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-

**Movement, Approach, & Intersection Results**





V/C, Movement V/C Ratio	0.10	0.33	0.33	0.00	0.13	0.20	0.14	0.15	0.39	0.06	0.08	0.08
Intersection LOS	D											
Intersection V/C	0.882											

### Intersection Level Of Service Report

#### Intersection 4: Glendale Avenue at Glenoaks Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

#### Intersection Setup

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left2	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			Yes			Yes			Yes		

#### Volumes

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Base Volume Input [veh/h]	121	971	65	22	727	172	67	180	14	338	267	128
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0000	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300	1.0300	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	2	0	0	3	0	0	0	0	0	0	2
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]	122	1002	65	23	752	177	67	180	14	348	267	130
Peak Hour 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
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]	31	251	16	6	188	44	17	45	4	87	67	33
Total Analysis Volume [veh/h]	122	1002	65	23	752	177	67	180	14	348	267	130
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.08	0.31	0.04	0.01	0.19	0.19	0.04	0.11	0.01	0.22	0.17	0.08
Intersection LOS	C											
Intersection V/C	0.758											

### Intersection Level Of Service Report

#### Intersection 5: Adams Street at Monterey Road

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

#### Intersection Setup

Name	Adams Street		Monterey Road			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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	Yes		Yes		Yes	

#### Volumes

Name	Adams Street		Monterey Road			
Base Volume Input [veh/h]	20	6	24	329	280	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0000	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	20	9	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]	21	6	24	359	297	6
Peak Hour Factor	0.9050	0.9050	0.9050	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	2	7	99	82	2
Total Analysis Volume [veh/h]	23	7	27	397	328	7
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	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.87	10.79	8.01	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.02	6.02	1.69	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.69		0.51		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.83					
Intersection LOS	C					

### Intersection Level Of Service Report

#### Intersection 6: Adams Street at Glenoaks Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

#### Intersection Setup

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
Base Volume Input [veh/h]	6	2	10	9	1	12	20	325	18	10	222	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
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]	6	2	10	9	1	12	20	325	18	10	222	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	2	1	3	2	0	3	5	88	5	3	60	2
Total Analysis Volume [veh/h]	7	2	11	10	1	13	22	353	20	11	241	8
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	0.02	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.53	15.26	10.60	15.59	15.37	9.89	7.78	0.00	0.00	8.07	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.15	0.15	0.15	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	3.24	3.24	3.24	3.74	3.74	3.74	1.27	1.27	1.27	0.70	0.70	0.70
d_A, Approach Delay [s/veh]	12.79			12.50			0.43			0.34		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.17											
Intersection LOS	C											

### Intersection Level Of Service Report

#### Intersection 7: Verdugo Road at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

**Intersection Setup**

Name			Verdugo Road			
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	Yes		Yes		Yes	

**Volumes**

Name			Verdugo Road			
Base Volume Input [veh/h]	228	602	482	38	25	311
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	0	4	2	5
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]	245	620	496	43	28	325
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]	61	155	124	11	7	81
Total Analysis Volume [veh/h]	245	620	496	43	28	325
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	



**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	ProtPerm	Permissive	Permissive	Permissive	Split	Split
Signal Group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.15	0.19	0.17	0.17	0.02	0.20
Intersection LOS	B					
Intersection V/C	0.625					

### Intersection Level Of Service Report

#### Intersection 8: Verdugo Road at Glenoaks Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.513

#### Intersection Setup

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
Base Volume Input [veh/h]	86	515	28	60	341	38	56	167	118	31	119	89
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0000	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	2	0	0	0	0	2	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]	86	531	29	62	353	39	58	167	118	33	119	92
Peak Hour 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
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]	22	133	7	16	88	10	15	42	30	8	30	23
Total Analysis Volume [veh/h]	86	531	29	62	353	39	58	167	118	33	119	92
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

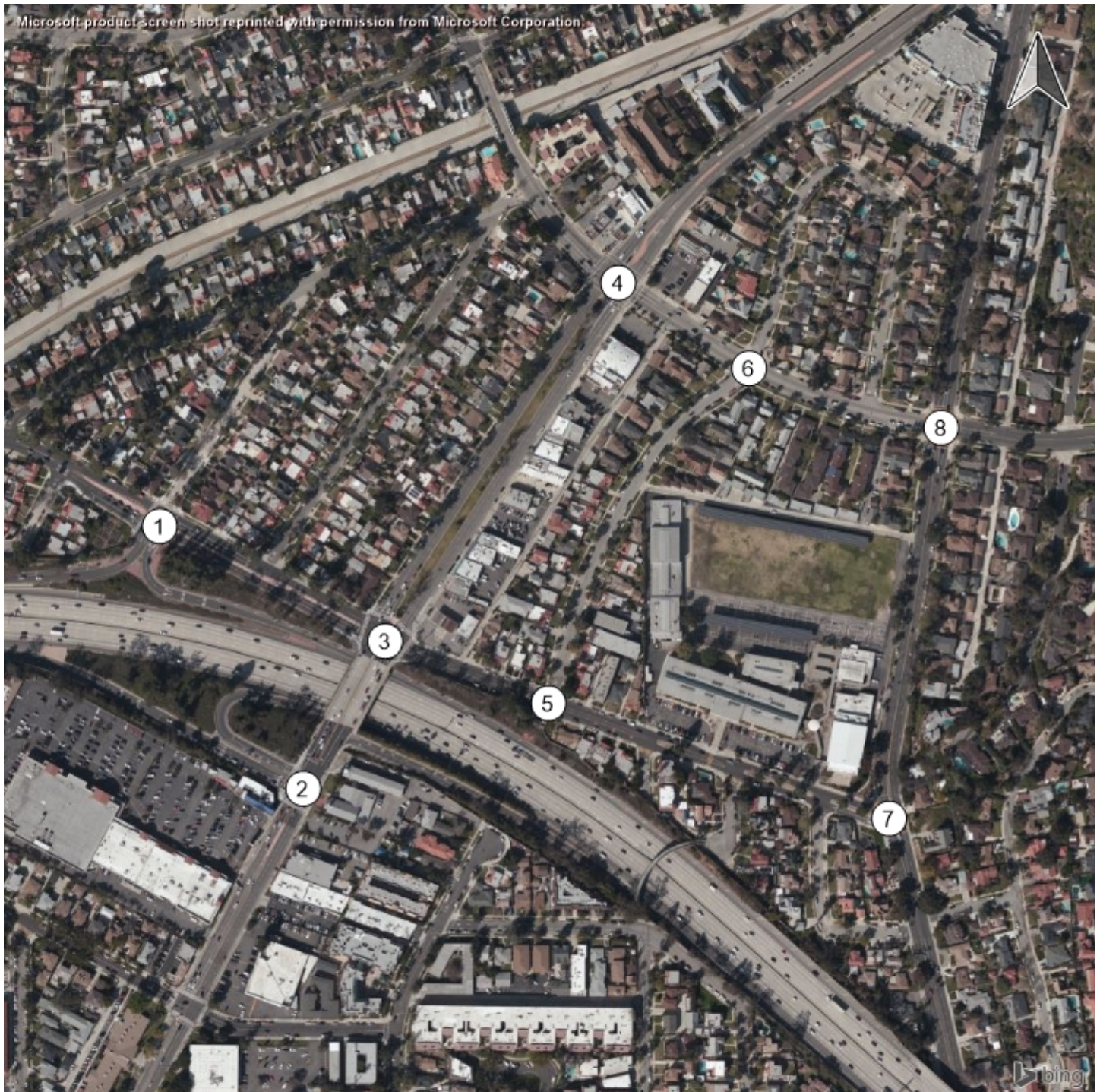
**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

**Movement, Approach, & Intersection Results**

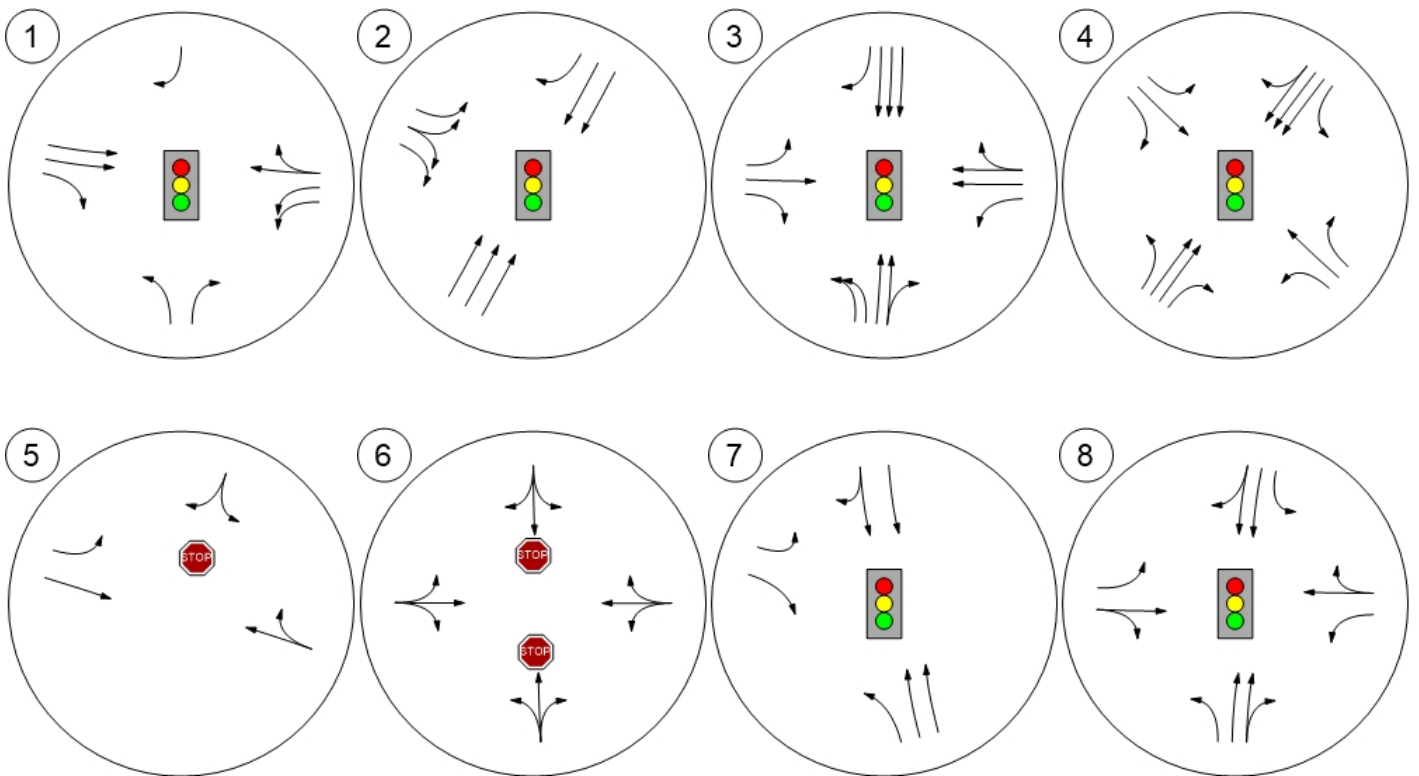
V/C, Movement V/C Ratio	0.05	0.18	0.18	0.04	0.12	0.12	0.04	0.18	0.18	0.02	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.513											

## Study Intersections

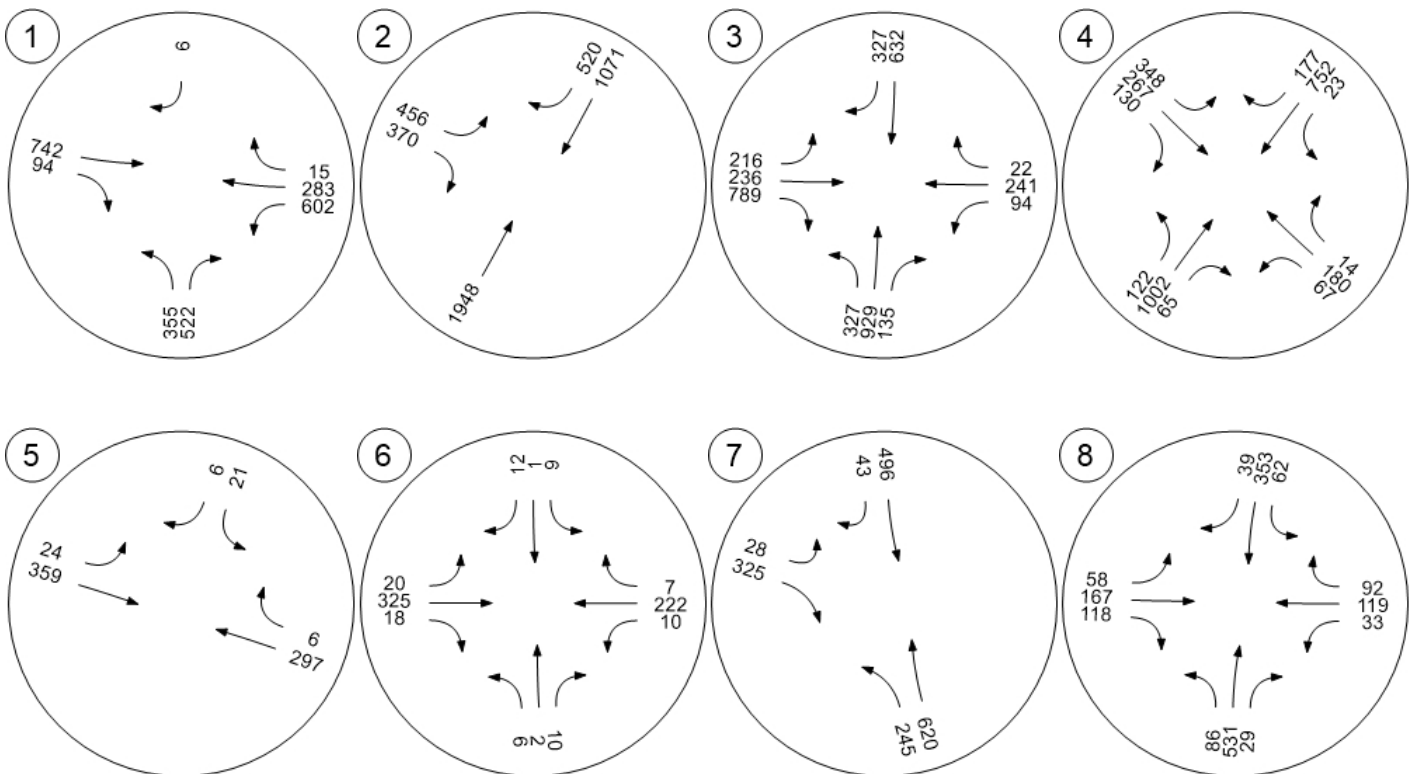




## Lane Configuration and Traffic Control



## Traffic Volume - Future Total Volume



## Appendix F. Cumulative Projects Trip Generation and Volume Development

## Appendices

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## List of Related Projects – November 2019

Project Name	Location	Land Use	Size	Unit	Status
1. Next on Lex	210 W. Lexington and 418 N. Central Ave.	Multi-Family	464	du	Under Construction
		Live/Work	25	du	
		Commercial	8,140	sf	
2. Central + Wilson	130 N. Central Ave.	Multi-Family	153	du	Approved
		Commercial (Option A)	4,900	sf	
		Live/Work (Option B)	5	du	
3. The Link	3901-3915 San Fernando Rd.	Multi-Family	142	du	Under Construction
		Commercial	11,600	sf	
		Studio	5,000	sf	
4. Enclave	525 W. Elk Ave.	Congregate Care	101	beds	Under Construction
5. Mixed-Use Project	507-525 W. Colorado St.	Multi-Family	90	du	Under Construction
		Medical Office	18,000	sf	
		Commercial	1,000	sf	
6. Broadway & Pacific	525 W. Broadway	Multi-Family	176	du	Under Construction
		Live/Work	4	du	
		Commercial	18,200	sf	
7. Orange/Milford Project	413 N. Brand Blvd.	Multi-Family	228	du	Approved
		Commercial	5,000	sf	
8.	1407 W. Glenoaks Blvd.	Multi-Family	55	du	Under Construction
9. Holiday Inn Suites	1001 E. Colorado St.	Hotel	134	rm	Under Construction
10. Aloft Hotel	1100-1108 N. Brand Blvd.	Hotel	85	rm	Under Construction
11.	2612 Honolulu Ave.	Multi-Family	28	du	Approved
12.	429-503 N. Kenwood St.	Multi-Family	21	du	Approved

Project Name	Location	Land Use	Size	Unit	Status
13.	500 E. Colorado St.	Medical Office	30,800	sf	Under Construction
		Retail	8,230	sf	
14.	126-132 S. Kenwood St.	Multi-Family	44	du	Proposed
15.	800 W. Doran St.	Multi-Family	52	du	Proposed
16.	1838 S. Brand Blvd.	Multi-Family	80	du	Under Construction
17.	1815-1821 S. Brand Blvd.	Multi-Family	38	du	Approved
		Commercial/Office	950	sf	
18.	4201 Pennsylvania Ave.	Multi-Family	30	du	Under Construction
19. Hotel Louise	145 N. Louise St.	Hotel	147	rm	Under Construction
20. AC Hotel	120 W. Colorado	Hotel	131	rm	Approved
21.	1820 S. Brand Blvd.	Live/Work	28	du	Approved
22.	352-358 W. Milford St.	Affordable Multi-Family	32	du	Under Construction
23. Meta Housing	1412-1422 5 <sup>th</sup> St. & 1116 Sonora Ave.	Affordable Senior	66	du	Under Construction
24.	610 N. Brand Blvd.	Multi-family	240	du	Proposed
25.	601-611 N. Brand Blvd.	Hotel	857	rm	Proposed
		Commercial	7,500	sf	
26.	401-409 Hawthorne St.	Multi-family	23	du	Proposed
27.	206 W. Chevy Chase	Medical Office	21,124	sf	Approved
28.	129 W. Los Feliz	Congregate care facility	80	rms	Proposed
29.	361 Myrtle St.	Condominium	15	du	Proposed
30. Affordable Housing	452 W. Milford	Multi-Family	15	du	Approved
31.	130 W. Eulalia	Medical Office	4,074	sf	Proposed
32.	534 N. Kenwood St.	Multi-Family	11	du	Proposed
33.	350 Salem St.	Condominium	12	du	Approved
34.	532 W. Elk Ave.	Condominium	6	du	Approved

Project Name	Location	Land Use	Size	Unit	Status
35.	712 S. Louise St.	Multi-Family	10	du	Approved
36.	611 E. Acacia Ave.	Multi-Family	14	du	Proposed
37.	722 E. Acacia Ave.	Multi-Family	14	du	Approved
38.	913 S. Adams St.	Multi-Family	18	du	Approved
39.	1017 San Rafael Ave.	Condominium	5	du	Under Construction
40.	1058 Ruberta Ave.	Congregate Care Facility	5,533	sf	Under Construction
41.	373 W. Doran St.	Multi-Family	5	du	Under Construction
42.	700 E. Lomita Ave.	Multi-Family	6	du	Under Construction
43.	463 Salem St.	Multi-Family	10	du	Under Construction
44.	344 W. Milford St.	Multi-Family	6	du	Under Construction
45.	512 W. Doran St.	Multi-Family	4	du	Approved
46.	400 W. Colorado St.	Medical Office	2,239	sf	Under Construction
		General Office	4,697	sf	
47.	337 N. Cedar St.	Multi-Family	4	du	Approved
48.	708 E. Palmer	Multi-Family	2	du	Under Construction
49.	115 N. Adams St.	Multi-Family	4	du	Under Construction
50.	518-520 E. Windsor	Multi-Family	34	du	Under Construction
51.	600 W. Wilson Ave.	Multi-Family	3	du	Under Construction
52.	518 Glenwood Rd.	Multi-Family	6	du	Under Construction
53. Affordable Housing	238 Concord St.	Multi-Family	13	du	Proposed
54. 604-610 W. Broadway		Medical Office Retail	1,394	sf	
55. 520 N. Central		Multi-Family	99	du	Approved
56. Armenian American Museum	151 E. Colorado - Central Park	Museum	59,800	sf	Approved
57. 2817 Montrose Ave.		Multi-Family	38	du	Proposed

Project Name	Location	Land Use	Size	Unit	Status
58.	340 N. Central Ave.	General Office	14,229	sf	Proposed
59.	515-523 N. Central Ave.	Hotel	142	rms	Proposed
60. Affordable Housing	3950 Foothill Blvd.	Multi-Family	34	du	Proposed
		General Office	1,000	sf	
		Retail	2,473	sf	
		Restaurant	1,000	sf	
61. Affordable Housing	2941 Honolulu Ave.	Multi-Family	18	du	Proposed
62. 1260 S. Brand Blvd.		Addition to Existing Auto Dealership	9,950	sf	Proposed
63. 423 Oak St.		Multi-Family	18	du	Proposed
64. 1809 Verdugo Rd.		Residential congregate living, medical facility	79	bed	Proposed
65. 135 W. Glenoaks Blvd.		Hotel	219	rms	Proposed

Source: City of Glendale, November 2019

du = dwelling units; s f = square feet; rm = rooms

Cumulative Projects Trip Generation													
Group	Project Number	Project Name/ Address	Land Use	ITE Code	Size	Unit	Trip Generation <sup>1</sup>						
							Daily	AM Peak Hour			PM Peak Hour		
								In	Out	Total	In	Out	Total
A	9	Holiday Inn Suites - 1001 E. Colorado St.	Hotel	310	134	rms	1120	37	26	63	41	39	80
	47	337 N. Cedar St	Residential	220	4	du	29	0	1	1	1	1	2
	49	115 N. Adams St.	Residential	220	4	du	29	0	1	1	1	1	2
							<b>1178</b>	<b>37</b>	<b>28</b>	<b>65</b>	<b>43</b>	<b>41</b>	<b>84</b>
B			Residential	220	228	du	1669	24	81	105	80	47	127
	7	413 N. Brand Blvd.	Commercial	820	5000	sf	189	3	2	5	9	10	19
	12	429-503 N. Kenwood St.	Residential	220	12	du	88	1	4	5	4	2	6
	24	610 N. Brand Blvd	Residential	220	240	du	1757	25	85	110	85	50	135
	32	534 N. Kenwood St.	Residential	220	11	du	81	1	4	5	4	2	6
							<b>3784</b>	<b>54</b>	<b>176</b>	<b>230</b>	<b>182</b>	<b>111</b>	<b>293</b>
C			Residential	220	489	du	3543	51	171	222	171	100	271
	1	Next on Lex - 210 W. Lexington and 418 N. Central Ave	Commerical	820	8140	sf	307	5	3	8	15	16	31
			Residential	220	158	du	1157	17	56	73	56	33	89
	2	Central + Wilson - 130 N. Central Ave	Commercial	820	4900	sf	189	3	2	5	9	10	19
	22	352-358 W. Milford St	Residential	220	32	du	234	3	11	14	11	7	18
	29	361 Myrtle St	Residential	220	15	du	110	2	5	7	5	3	8
	30	452 W. Milford	Residential	220	15	du	110	2	5	7	5	3	8
	33	350 Salem St	Residential	220	30	du	88	1	4	5	4	2	6
	55	520 N. Central	Residential	220	99	du	725	10	35	45	35	21	56
	59	515-523 N. Central Ave	Hotel	310	142	rms	1176	39	27	66	41	39	80
							<b>7639</b>	<b>133</b>	<b>319</b>	<b>452</b>	<b>352</b>	<b>234</b>	<b>586</b>
D	10	Aloft Hotel - 1100-1108 N. Brand Blvd.	Hotel	310	85	rms	711	24	16	40	26	25	51
	65	135-190 W. Glenoaks Blvd	Hotel	310	219	rms	1831	61	42	103	67	64	131
							<b>2542</b>	<b>85</b>	<b>58</b>	<b>143</b>	<b>93</b>	<b>89</b>	<b>182</b>
E	64	1809 Verdugo Rd.	Assisted Living	254	79	beds	205	9	6	15	8	13	21
							<b>205</b>	<b>9</b>	<b>6</b>	<b>15</b>	<b>8</b>	<b>13</b>	<b>21</b>
F			Medical Office	720	30800	sf	1072	67	19	86	30	77	107
	13	500 E. Colorado St.	Commercial	820	8,230	sf	311	5	3	8	15	16	31
	14	126-132 S. Kenwood St.	Residential	220	44	du	322	5	16	21	16	9	25
	19	Hotel Louise - 145 N. Louise St.	Hotel	310	147	rms	1233	40	28	68	43	41	84
							<b>2938</b>	<b>117</b>	<b>66</b>	<b>183</b>	<b>104</b>	<b>143</b>	<b>247</b>
		<b>Total</b>					<b>36572</b>	<b>435</b>	<b>653</b>	<b>1,088</b>	<b>782</b>	<b>632</b>	<b>1,414</b>

**BOLD** = Total

## Appendix G. Intersection Turn Movement Volumes and LOS Worksheets, Opening Year Without Project Conditions

## Appendices

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## Wilson Middle School

Vistro File: Y:\...\Nov\_2019\_WilsonMS.vistro

Scenario 3 3 2021 NP Weekday PM

Report File: Y:\...\OY\_NP\_PM.pdf

12/4/2019

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SR-134 WB Ramps at Monterey Road	Signalized	ICU 1	NB Right	0.884	-	D
2	Glendale Avenue at SR-134 EB Ramps	Signalized	ICU 1	NEB Thru	0.689	-	B
3	Glendale Avenue at Monterey Road	Signalized	ICU 1	EB Right	1.006	-	F
4	Glendale Avenue at Glenoaks Boulevard	Signalized	ICU 1	NEB Thru	0.775	-	C
5	Adams Street at Monterey Road	Two-way stop	HCM 6th Edition	SB Left	0.065	15.9	C
6	Adams Street at Glenoaks Boulevard	Two-way stop	HCM 6th Edition	SB Left	0.029	15.8	C
7	Verdugo Road at Monterey Road	Signalized	ICU 1	EB Right	0.615	-	B
8	Verdugo Road at Glenoaks Boulevard	Signalized	ICU 1	EB Thru	0.516	-	A

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: SR-134 WB Ramps at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

#### Intersection Setup

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
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			Yes			Yes			Yes		

#### Volumes

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
Base Volume Input [veh/h]	345	0	520	0	0	6	0	720	91	602	273	15
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0200	1.0000	1.0000	1.0300	1.0000	1.0300	1.0300	1.0200	1.0300	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	24	0	0	0	0	28	0	6	43	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]	355	0	554	0	0	6	0	770	94	620	324	15
Peak Hour 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
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]	89	0	139	0	0	2	0	193	24	155	81	4
Total Analysis Volume [veh/h]	355	0	554	0	0	6	0	770	94	620	324	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	0	2	0	0	6	0	8	0	7	4	0
Auxiliary Signal Groups			2									
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.22	0.00	0.35	0.00	0.00	0.00	0.00	0.24	0.06	0.19	0.21	0.21
Intersection LOS	D											
Intersection V/C	0.884											

**Intersection Level Of Service Report**  
**Intersection 2: Glendale Avenue at SR-134 EB Ramps**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

**Intersection Setup**

Name						
Approach	Northeastbound		Southwestbound		Southeastbound	
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	Yes		Yes		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	0	1882	1037	504	440	359
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	62	53	0	0	6
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]	0	2000	1121	519	453	376
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]	0	500	280	130	113	94
Total Analysis Volume [veh/h]	0	2000	1121	519	453	376
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Overlap	Permissive	Permissive
Signal Group	0	2	6	6	3	0
Auxiliary Signal Groups				6		
Lead / Lag	-	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**





V/C, Movement V/C Ratio	0.00	0.42	0.35	0.32	0.14	0.17
Intersection LOS	B					
Intersection V/C	0.689					

### Intersection Level Of Service Report

#### Intersection 3: Glendale Avenue at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.902

#### Intersection Setup

Name				Glendale Avenue			Monterey Road			Monterey Road		
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			Yes			Yes			Yes		

#### Volumes

Name				Glendale Avenue			Monterey Road			Monterey Road		
Base Volume Input [veh/h]	317	902	118	0	614	327	216	234	766	87	239	19
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0000	1.0300	1.0200	1.0200	1.0200	1.0300	1.0300	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	36	3	0	27	28	19	9	24	2	15	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]	333	965	125	0	659	362	239	248	813	92	259	19
Peak Hour 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
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]	83	241	31	0	165	91	60	62	203	23	65	5
Total Analysis Volume [veh/h]	333	965	125	0	659	362	239	248	813	92	259	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	4	0	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.10	0.34	0.34	0.00	0.14	0.23	0.15	0.16	0.40	0.06	0.09	0.09
Intersection LOS	E											
Intersection V/C	0.902											

**Intersection Level Of Service Report**  
**Intersection 4: Glendale Avenue at Glenoaks Boulevard**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

**Intersection Setup**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left2	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			Yes			Yes			Yes		

**Volumes**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Base Volume Input [veh/h]	121	971	65	22	727	172	67	180	14	338	267	128
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0300	1.0200	1.0300	1.0300	1.0300	1.0200	1.0200	1.0300	1.0300	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	51	0	0	52	0	0	0	0	0	0	3
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]	127	1051	66	23	801	177	68	184	14	348	272	134
Peak Hour 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
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]	32	263	17	6	200	44	17	46	4	87	68	34
Total Analysis Volume [veh/h]	127	1051	66	23	801	177	68	184	14	348	272	134
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.08	0.33	0.04	0.01	0.20	0.20	0.04	0.12	0.01	0.22	0.17	0.08
Intersection LOS	C											
Intersection V/C	0.775											






### Intersection Level Of Service Report

#### Intersection 5: Adams Street at Monterey Road

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

#### Intersection Setup

Name	Adams Street		Monterey Road			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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	Yes		Yes		Yes	

#### Volumes

Name	Adams Street		Monterey Road			
Base Volume Input [veh/h]	20	6	24	329	280	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0200	1.0200	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	17	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]	21	6	24	351	305	6
Peak Hour Factor	0.9050	0.9050	0.9050	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	2	7	97	84	2
Total Analysis Volume [veh/h]	23	7	27	388	337	7
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	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.88	10.85	8.03	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.04	6.04	1.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.71		0.52		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.83					
Intersection LOS	C					

### Intersection Level Of Service Report

#### Intersection 6: Adams Street at Glenoaks Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

#### Intersection Setup

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
Base Volume Input [veh/h]	6	2	10	9	1	12	20	325	18	10	222	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
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]	6	2	10	9	1	12	20	332	18	10	226	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	2	1	3	2	0	3	5	90	5	3	61	2
Total Analysis Volume [veh/h]	7	2	11	10	1	13	22	361	20	11	246	8
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	0.02	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.76	15.45	10.67	15.82	15.56	9.93	7.79	0.00	0.00	8.09	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.15	0.15	0.15	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	3.30	3.30	3.30	3.80	3.80	3.80	1.28	1.28	1.28	0.71	0.71	0.71
d_A, Approach Delay [s/veh]	12.93			12.62			0.43			0.34		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.15											
Intersection LOS	C											

### Intersection Level Of Service Report

#### Intersection 7: Verdugo Road at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

**Intersection Setup**

Name			Verdugo Road			
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	Yes		Yes		Yes	

**Volumes**

Name			Verdugo Road			
Base Volume Input [veh/h]	228	602	482	38	25	311
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	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]	235	622	498	39	26	320
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]	59	156	125	10	7	80
Total Analysis Volume [veh/h]	235	622	498	39	26	320
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	ProtPerm	Permissive	Permissive	Permissive	Split	Split
Signal Group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**


V/C, Movement V/C Ratio	0.15	0.19	0.17	0.17	0.02	0.20
Intersection LOS	B					
Intersection V/C	0.615					

### Intersection Level Of Service Report

#### Intersection 8: Verdugo Road at Glenoaks Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.516

**Intersection Setup**

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
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			Yes			Yes			Yes		

**Volumes**

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
Base Volume Input [veh/h]	86	515	28	60	341	38	56	167	118	31	119	89
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0300	1.0200	1.0300	1.0300	1.0300	1.0300	1.0200	1.0200	1.0200	1.0200	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	1	2	0	0	0	0	0	0	1
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]	88	532	29	63	353	39	58	170	120	32	121	93
Peak Hour 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
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]	22	133	7	16	88	10	15	43	30	8	30	23
Total Analysis Volume [veh/h]	88	532	29	63	353	39	58	170	120	32	121	93
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

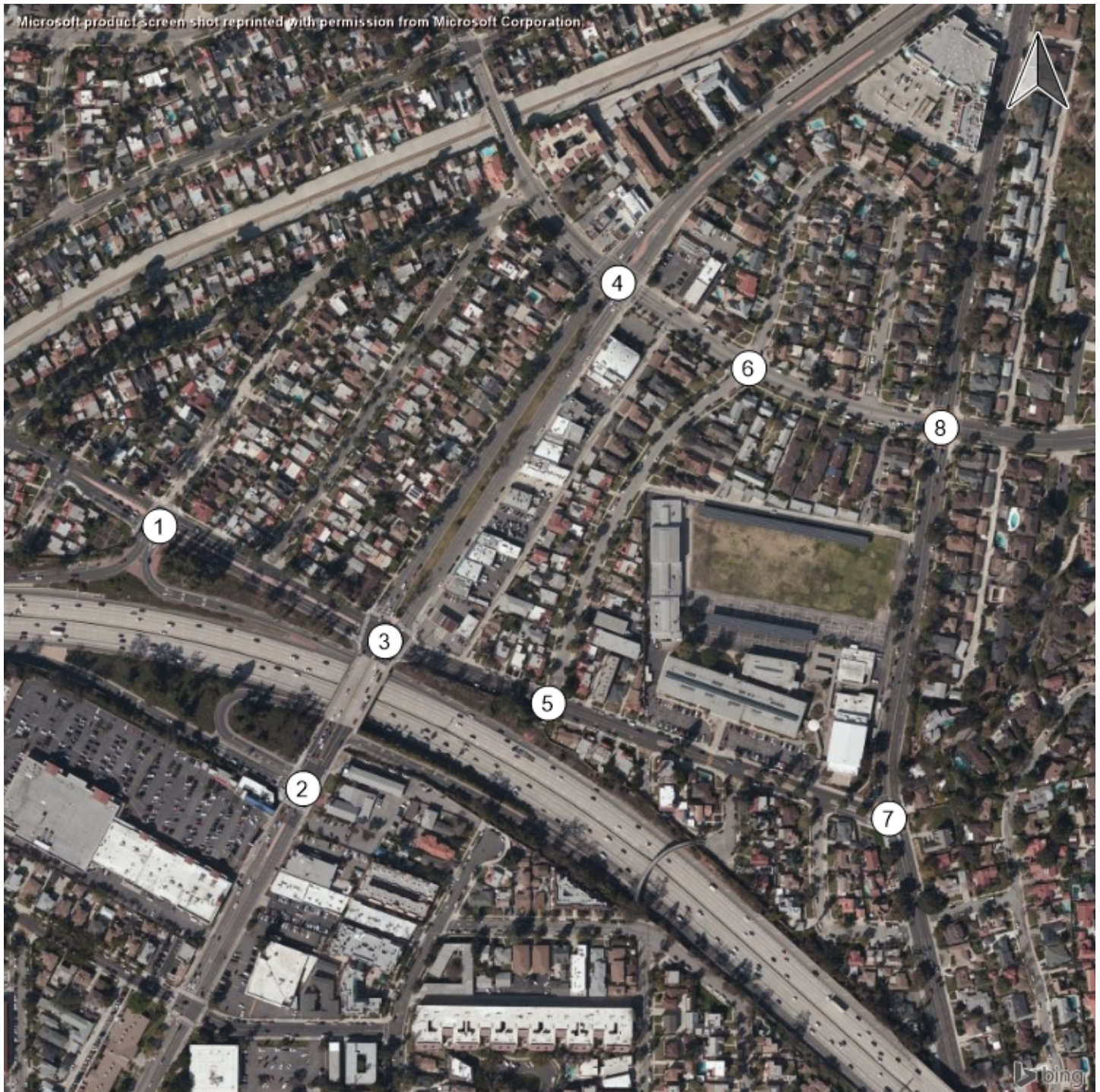
Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.06	0.18	0.18	0.04	0.12	0.12	0.04	0.18	0.18	0.02	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.516											

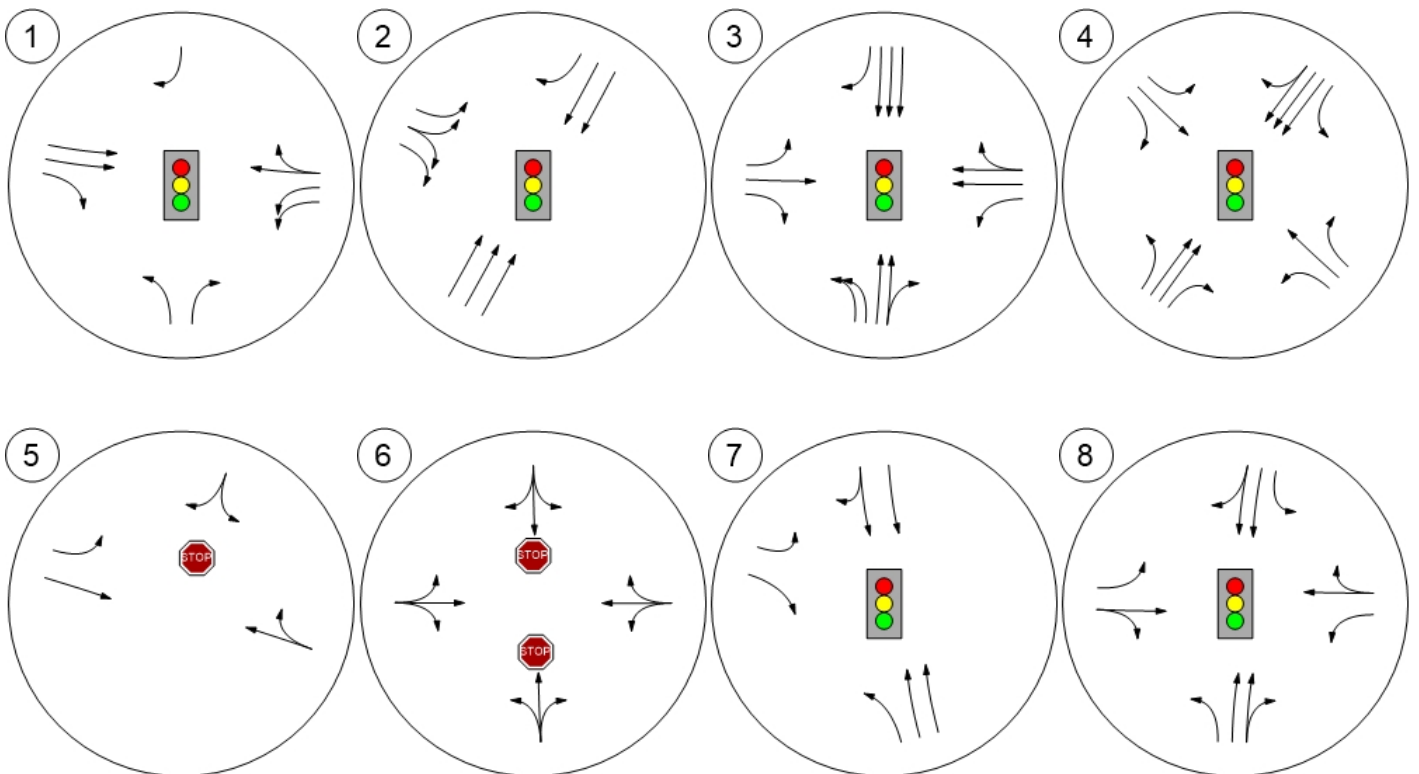


## Study Intersections

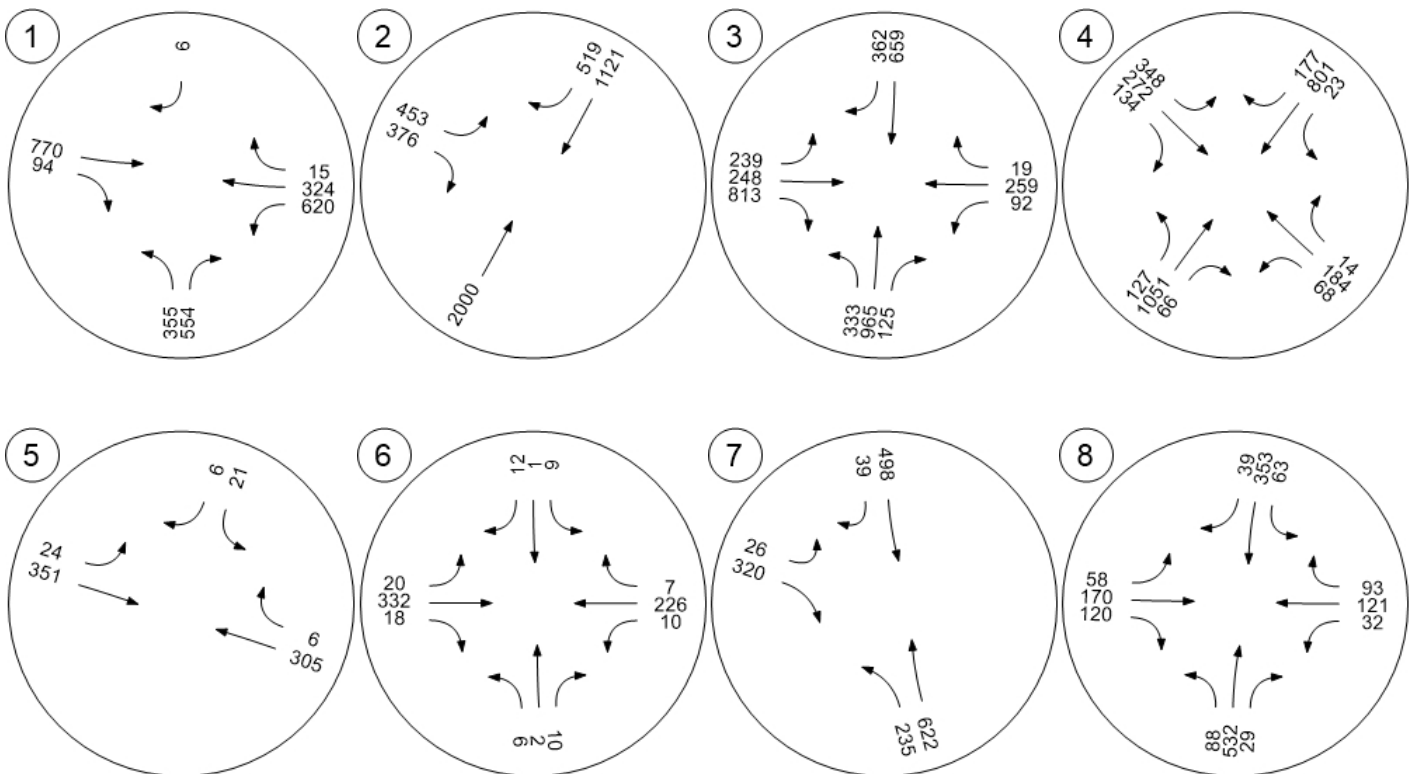




# Lane Configuration and Traffic Control



## Traffic Volume - Future Total Volume



## Appendix H. Intersection Turn Movement Volumes and LOS Worksheets, Opening Year With Project Conditions

## Appendices

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## Wilson Middle School

Vistro File: Y:\...\Nov\_2019\_WilsonMS.vistro

Scenario 5 5 2021 WP Weekday PM

Report File: Y:\...\OY\_WP\_PM.pdf

12/4/2019

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SR-134 WB Ramps at Monterey Road	Signalized	ICU 1	NB Right	0.886	-	D
2	Glendale Avenue at SR-134 EB Ramps	Signalized	ICU 1	NEB Thru	0.692	-	B
3	Glendale Avenue at Monterey Road	Signalized	ICU 1	EB Right	1.013	-	F
4	Glendale Avenue at Glenoaks Boulevard	Signalized	ICU 1	NEB Thru	0.776	-	C
5	Adams Street at Monterey Road	Two-way stop	HCM 6th Edition	SB Left	0.068	16.4	C
6	Adams Street at Glenoaks Boulevard	Two-way stop	HCM 6th Edition	SB Left	0.029	15.8	C
7	Verdugo Road at Monterey Road	Signalized	ICU 1	EB Right	0.625	-	B
8	Verdugo Road at Glenoaks Boulevard	Signalized	ICU 1	EB Thru	0.518	-	A

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: SR-134 WB Ramps at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

**Intersection Setup**

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
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			Yes			Yes			Yes		

**Volumes**

Name	SR-134 WB Ramps			Cordova Avenue			Eastbound			Monterey Road		
Base Volume Input [veh/h]	345	0	520	0	0	6	0	720	91	602	273	15
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0000	1.0200	1.0000	1.0000	1.0300	1.0000	1.0300	1.0300	1.0200	1.0300	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	26	0	0	0	0	28	0	6	45	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]	355	0	556	0	0	6	0	770	94	620	326	15
Peak Hour 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
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]	89	0	139	0	0	2	0	193	24	155	82	4
Total Analysis Volume [veh/h]	355	0	556	0	0	6	0	770	94	620	326	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	0	2	0	0	6	0	8	0	7	4	0
Auxiliary Signal Groups			2									
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.22	0.00	0.35	0.00	0.00	0.00	0.00	0.24	0.06	0.19	0.21	0.21
Intersection LOS	D											
Intersection V/C	0.886											



**Intersection Level Of Service Report**  
**Intersection 2: Glendale Avenue at SR-134 EB Ramps**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

**Intersection Setup**

Name						
Approach	Northeastbound		Southwestbound		Southeastbound	
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	Yes		Yes		Yes	

**Volumes**

Name						
Base Volume Input [veh/h]	0	1882	1037	504	440	359
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	72	56	1	3	6
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]	0	2010	1124	520	456	376
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]	0	503	281	130	114	94
Total Analysis Volume [veh/h]	0	2010	1124	520	456	376
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Overlap	Permissive	Permissive
Signal Group	0	2	6	6	3	0
Auxiliary Signal Groups				6		
Lead / Lag	-	-	-	-	Lead	-





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.42	0.35	0.33	0.14	0.17
Intersection LOS	B					
Intersection V/C	0.692					

**Intersection Level Of Service Report**  
**Intersection 3: Glendale Avenue at Monterey Road**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.909

**Intersection Setup**

Name				Glendale Avenue			Monterey Road			Monterey Road		
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			Yes			Yes			Yes		

**Volumes**

Name				Glendale Avenue			Monterey Road			Monterey Road		
Base Volume Input [veh/h]	317	902	118	0	614	327	216	234	766	87	239	19
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0000	1.0300	1.0200	1.0200	1.0200	1.0300	1.0300	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	36	16	5	27	28	19	11	24	6	17	3
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]	333	965	138	5	659	362	239	250	813	96	261	22
Peak Hour 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
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]	83	241	35	1	165	91	60	63	203	24	65	6
Total Analysis Volume [veh/h]	333	965	138	5	659	362	239	250	813	96	261	22
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	4	0	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-





**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.10	0.34	0.34	0.00	0.14	0.23	0.15	0.16	0.40	0.06	0.09	0.09
Intersection LOS	E											
Intersection V/C	0.909											

**Intersection Level Of Service Report**  
**Intersection 4: Glendale Avenue at Glenoaks Boulevard**

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

**Intersection Setup**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left2	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			Yes			Yes			Yes		

**Volumes**

Name	Glendale Avenue			Glendale Avenue			Glenoaks Blvd			Glenoaks Blvd		
Base Volume Input [veh/h]	121	971	65	22	727	172	67	180	14	338	267	128
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0300	1.0200	1.0300	1.0300	1.0300	1.0200	1.0200	1.0300	1.0300	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	53	0	0	55	0	0	0	0	0	0	5
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]	128	1053	66	23	804	177	68	184	14	348	272	136
Peak Hour 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
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]	32	263	17	6	201	44	17	46	4	87	68	34
Total Analysis Volume [veh/h]	128	1053	66	23	804	177	68	184	14	348	272	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.08	0.33	0.04	0.01	0.20	0.20	0.04	0.12	0.01	0.22	0.17	0.09
Intersection LOS	C											
Intersection V/C	0.776											

### Intersection Level Of Service Report

#### Intersection 5: Adams Street at Monterey Road

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

#### Intersection Setup

Name	Adams Street		Monterey Road			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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	Yes		Yes		Yes	

#### Volumes

Name	Adams Street		Monterey Road			
Base Volume Input [veh/h]	20	6	24	329	280	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0200	1.0200	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	32	26	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]	21	6	24	371	314	6
Peak Hour Factor	0.9050	0.9050	0.9050	0.9050	0.9050	0.9050
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	2	7	102	87	2
Total Analysis Volume [veh/h]	23	7	27	410	347	7
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	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.39	10.98	8.06	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.30	6.30	1.72	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.13		0.50		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	C					







### Intersection Level Of Service Report

#### Intersection 6: Adams Street at Glenoaks Boulevard

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

#### Intersection Setup

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Adams Street			Verdugo Circle Drive			Glenoaks Blvd			Glenoaks Boulevard		
Base Volume Input [veh/h]	6	2	10	9	1	12	20	325	18	10	222	7
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
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]	6	2	10	9	1	12	20	332	18	10	226	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	2	1	3	2	0	3	5	90	5	3	61	2
Total Analysis Volume [veh/h]	7	2	11	10	1	13	22	361	20	11	246	8
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	0.02	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.76	15.45	10.67	15.82	15.56	9.93	7.79	0.00	0.00	8.09	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.15	0.15	0.15	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	3.30	3.30	3.30	3.80	3.80	3.80	1.28	1.28	1.28	0.71	0.71	0.71
d_A, Approach Delay [s/veh]	12.93			12.62			0.43			0.34		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.15											
Intersection LOS	C											

### Intersection Level Of Service Report

#### Intersection 7: Verdugo Road at Monterey Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

#### Intersection Setup

Name	Verdugo Road		Verdugo Road		Verdugo Road	
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	Yes		Yes		Yes	

#### Volumes

Name	Verdugo Road		Verdugo Road		Verdugo Road	
Base Volume Input [veh/h]	228	602	482	38	25	311
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	2	2	4	2	5
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]	245	622	498	43	28	325
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]	61	156	125	11	7	81
Total Analysis Volume [veh/h]	245	622	498	43	28	325
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

Control Type	ProtPerm	Permissive	Permissive	Permissive	Split	Split
Signal Group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.15	0.19	0.17	0.17	0.02	0.20
Intersection LOS	B					
Intersection V/C	0.625					

### Intersection Level Of Service Report

#### Intersection 8: Verdugo Road at Glenoaks Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

#### Intersection Setup

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
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			Yes			Yes			Yes		

#### Volumes

Name	Verdugo Road						Glenoaks Boulevard			Glenoaks Boulevard		
Base Volume Input [veh/h]	86	515	28	60	341	38	56	167	118	31	119	89
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0300	1.0200	1.0300	1.0300	1.0300	1.0300	1.0200	1.0200	1.0200	1.0200	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	1	1	4	0	0	0	0	2	0	1
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]	88	533	30	63	355	39	58	170	120	34	121	93
Peak Hour 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
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]	22	133	8	16	89	10	15	43	30	9	30	23
Total Analysis Volume [veh/h]	88	533	30	63	355	39	58	170	120	34	121	93
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

**Intersection Settings**

Cycle Length [s]	100
Lost time [s]	10.00

**Phasing & Timing**

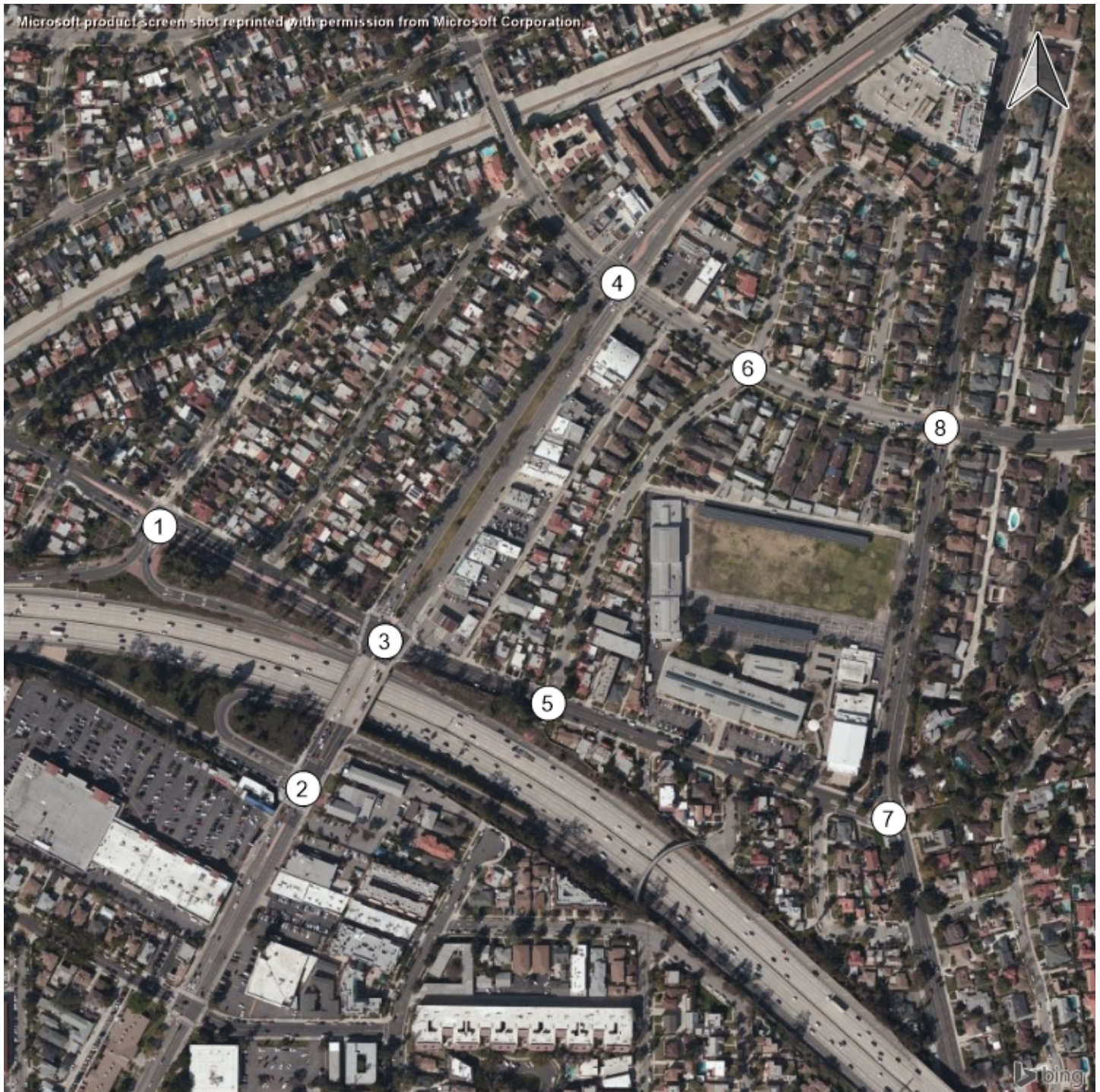
Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.06	0.18	0.18	0.04	0.12	0.12	0.04	0.18	0.18	0.02	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.518											

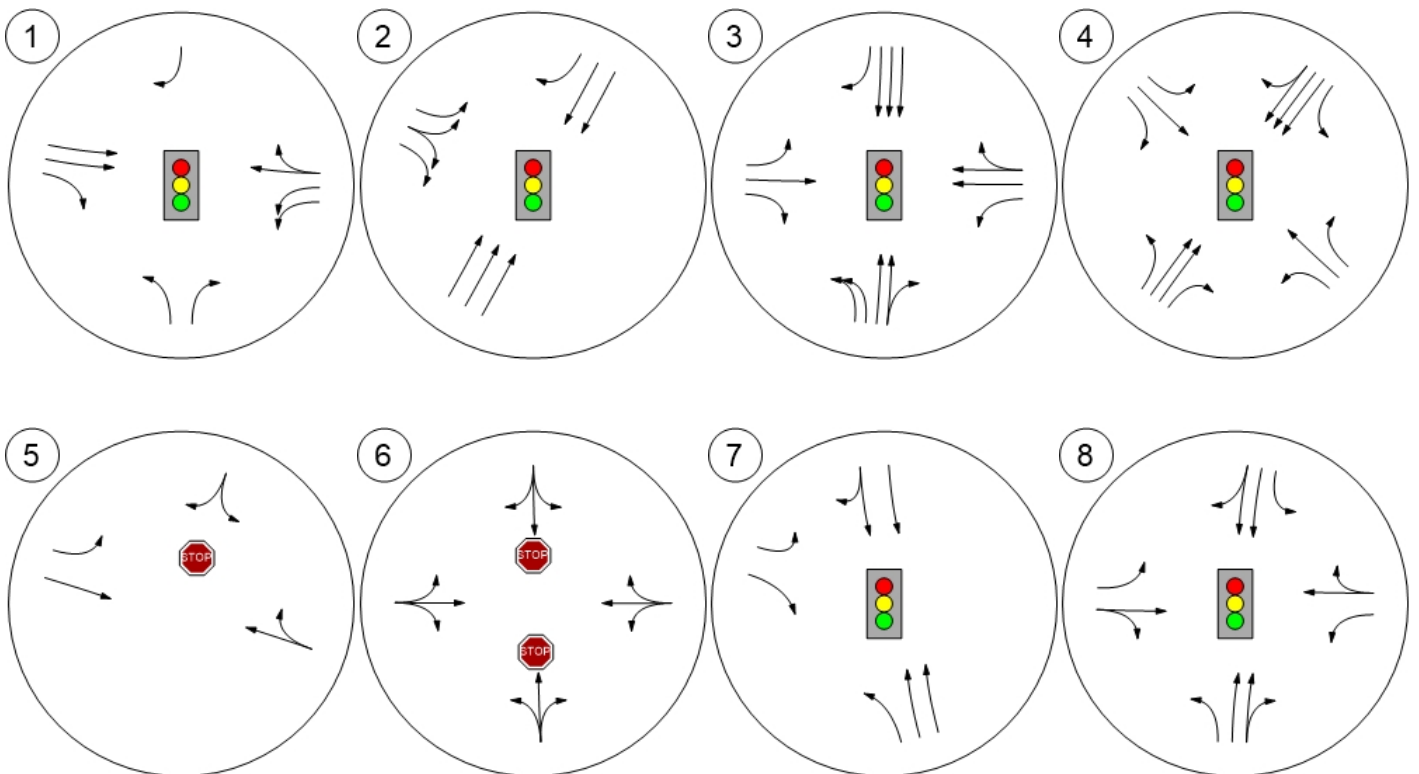


## Study Intersections





## Lane Configuration and Traffic Control





## Traffic Volume - Future Total Volume

