

Transportation Impact Analysis

# **GREENLEAF BUSINESS CENTER PROJECT**

Santa Fe Springs, CA  
September 24, 2019

PREPARED FOR  
**CENTERPOINT PROPERTIES**  
725 S. Figueroa Street, Suite 3005  
Los Angeles, CA 90017  
213.488.8700

PREPARED BY  
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Orange, CA 92868  
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Project No. 22812

September 24, 2019



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## 1.0 INTRODUCTION

This report presents the findings of the transportation impact analysis conducted for the Greenleaf Business Center Project (herein referred to as the “proposed Project”) in the City of Santa Fe Springs, California.

This study assessed the potential impacts resulting from the addition of the traffic generated by the proposed Project on the surrounding transportation system and to identify feasible measures to mitigate any significant impacts. In addition, this study includes a review of the site plan for the proposed Project to verify adequacy of internal circulation and external access.

The proposed Project location and vicinity are shown in Figure 1.

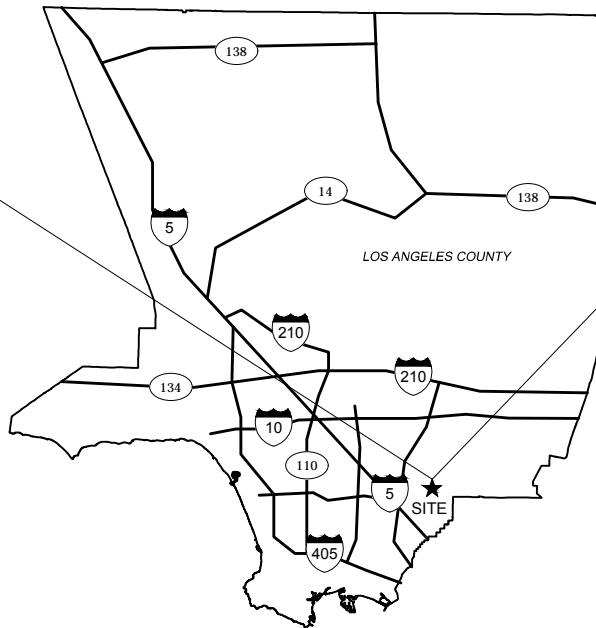
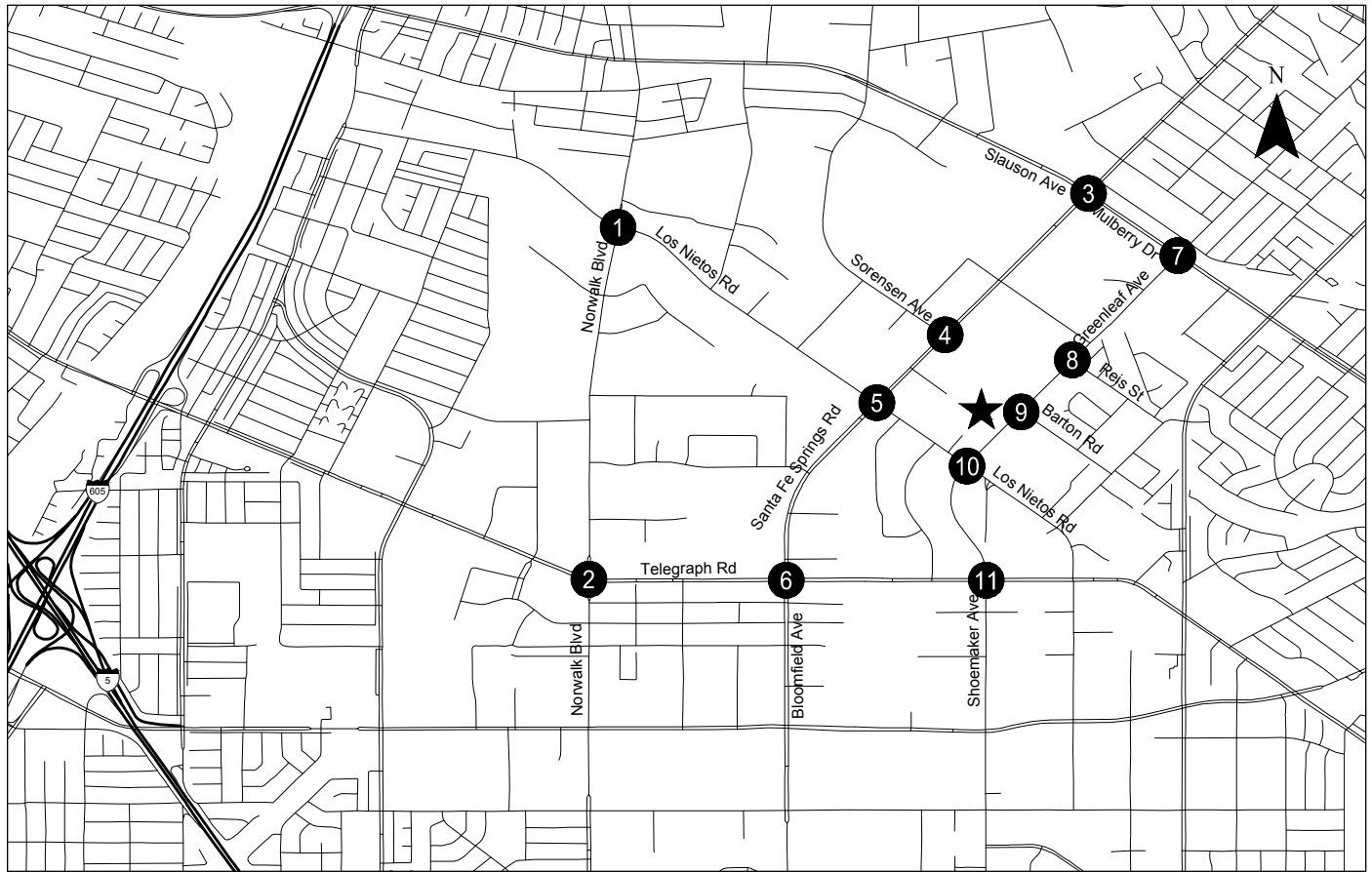
### 1.1 PROJECT DESCRIPTION AND LOCATION

The proposed Project site is located on the northwest corner of the Greenleaf Avenue/Los Nietos Road intersection in the City of Santa Fe Springs, California (City). Interstate 605 (I-605) is located approximately 1.6 miles west of the proposed Project site and Interstate 5 (I-5) is located approximately 3 miles south of the proposed Project site. The proposed Project site is currently largely vacant with a small industrial facility on the east side of the site. The proposed Project would replace this existing facility.

The proposed Project includes the demolition of the existing facility and construction of one new building that would consist of 200,500 square feet (sf) of warehousing space (approximately 60,150 sf is anticipated to be utilized for light industrial uses with the remaining 140,350 sf used as general warehousing space) and a 16,000-sf office to support the industrial tenants. In addition, the proposed Project would provide 459 surface parking spaces intended for trailer parking and storage but may also be utilized by automobiles. The Project proposes to provide 120 automobile parking spaces along the north side of the proposed Project site and 100 automobile parking spaces to the south of the proposed building. The building would consist of 46 loading dock positions on the west side facing the trailer parking area.

Site access would be provided via one driveway on Santa Fe Springs Road, one driveway on Los Nietos Avenue, and one driveway on Greenleaf Avenue. Due to the driveway’s close proximity to St. Paul High School to the north, the driveway on Greenleaf Avenue would be restricted to automobiles only and trucks would not be able to access the site through it. Primary truck access would be provided via the driveway on Santa Fe Springs Road and the driveway on Los Nietos Avenue.

The site plan for the proposed Project is presented in Figure 2.

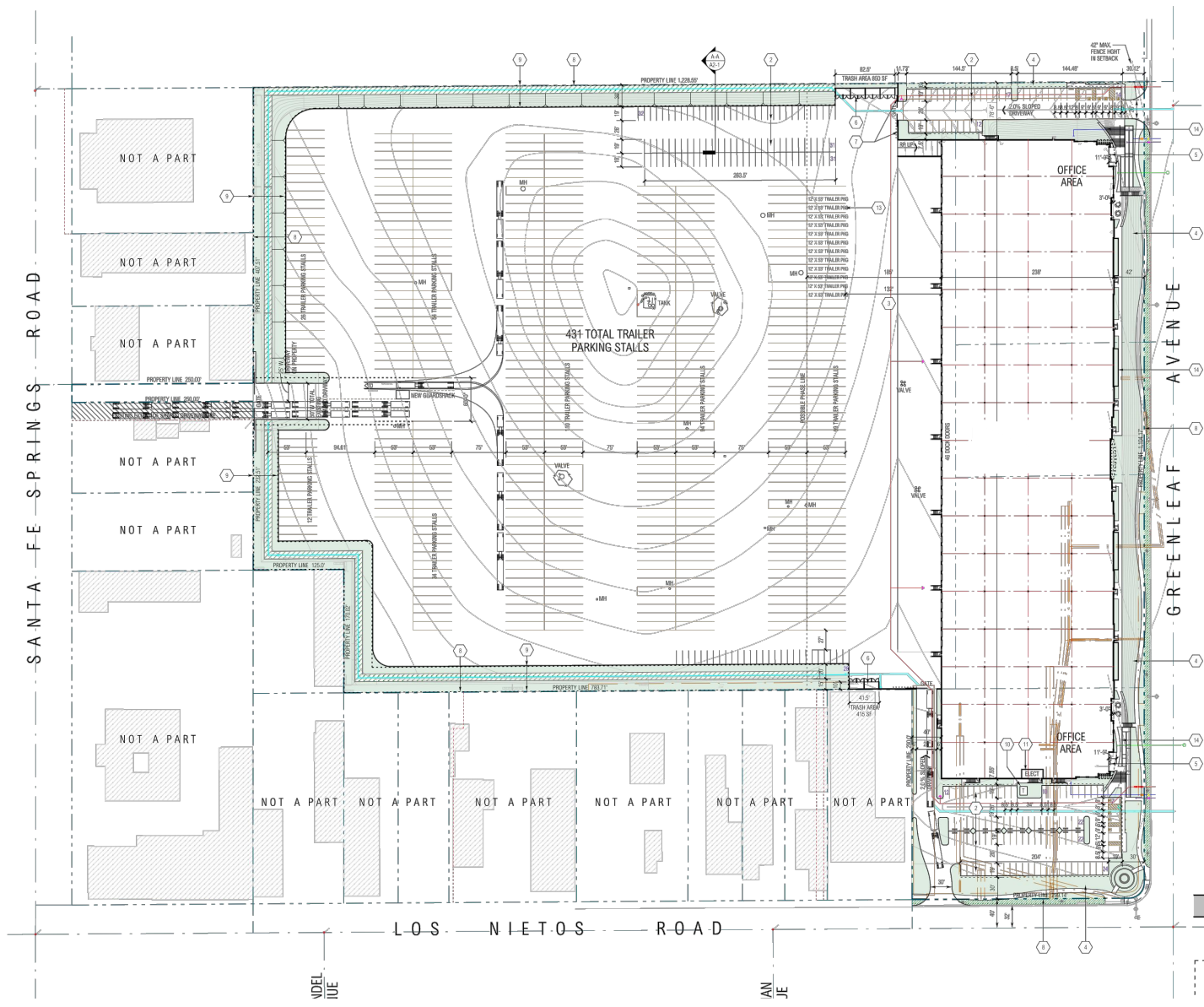


Site Vicinity Map  
Santa Fe Springs, California

Figure  
1

C:\KAI Applications\Autodesk\TEMP\AcPublish\_4992\22812\_figures\_20190917.dwg Sep 17, 2019 - 4:18pm - hahmed Layout Tab: Site Vicinity Map

H:\22\22812 - Santa Fe Springs Industrial TIA\figures\22812\_figures\_20190923.dwg Sep 23, 2019 - 11:41am - cdougherty Layout Tab: Proposed Site Plan



Proposed Site Plan Provided by CenterPoint Properties

Proposed Site Plan  
Santa Fe Springs, California

Figure  
2

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## 1.2 STUDY SCOPE AND METHODOLOGY

The scope and analysis methodologies utilized for this study were developed in consultation with staff from the City of Santa Fe Springs Public Works Engineering Department, and are presented in this section.

### Analysis Scenarios

A vehicle level of service (LOS) analysis was performed to assess the performance of the transportation system during the weekday AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak periods for the following four scenarios:

- Existing Conditions;
- Existing Plus Proposed Project Conditions;
- Opening Year 2020 Conditions; and,
- Opening Year 2020 Plus Proposed Project Conditions.

### Study Intersections

Based on the expected distribution of the trips generated by the proposed Project and subsequent conversations with City staff, the following study intersections were selected for analysis:

1. Norwalk Boulevard/Los Nietos Road (signalized)
2. Norwalk Boulevard/Telegraph Road (signalized)
3. Santa Fe Springs Road/Slauson Avenue-Mulberry Drive (signalized)
4. Santa Fe Springs Road/Sorensen Avenue (unsignalized)
5. Santa Fe Springs Road/Los Nietos Road (signalized)
6. Santa Fe Springs Road-Bloomfield Avenue/Telegraph Road (signalized)
7. Greenleaf Avenue/Mulberry Drive (signalized)
8. Greenleaf Avenue/Reis Street (signalized)
9. Greenleaf Avenue/Barton Road (unsignalized)
10. Greenleaf Avenue/Los Nietos Road (signalized)
11. Greenleaf Avenue/Telegraph Road (signalized)

The study area for the analysis extends from Norwalk Boulevard to the west, Slauson Avenue to the north, Greenleaf Avenue to the east, and Telegraph Road to the south. The location of the study intersections are shown on the map in Figure 1.

---

## Intersection Analysis Methodology

In addition to the Circulation Element of the City's General Plan<sup>1</sup>, the City utilizes the guidelines in the Los Angeles County Traffic Impact Analysis guidelines<sup>2</sup>. Per the guidelines, the operating conditions at the study intersections under the jurisdiction of the City were evaluated using the Intersection Capacity Utilization (ICU) methodology, which is based on the sum of the volume to capacity (V/C) ratios for the conflicting movements at the intersection during the AM and PM peak hours.

All intersections were analyzed using the Synchro 10 analysis software that has the capability to perform the ICU method.

### *Level of Service*

"Level of service" (LOS) describes the operating conditions experienced by users of a facility. LOS is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions and delay, freedom to maneuver, driving comfort and convenience. LOS is designated A through F from best to worst, and cover the entire range of traffic operations that might occur. LOS A through LOS E generally represent traffic volumes at less than roadway capacity, while LOS F represents over capacity and/or forced flow conditions. The LOS for the ICU methodology is based on the V/C ratio.

Table 1 presents the range of the V/C ratios (from City standards) associated with each LOS grade designation.

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<sup>1</sup> Santa Fe Springs General Plan, Circulation Element, City of Santa Fe Springs, 1994.

<sup>2</sup> Traffic Impact Analysis Report Guidelines, Los Angeles County, January 1997.



**Table 1: Signalized Intersection Level of Service Definitions**

LOS	Description of Traffic Conditions	Intersection Capacity Utilization Methodology (Volume/Capacity Ratio)
A	Low volumes; high speeds; speed is not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.	≤0.600
B	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	0.601 - 0.700
C	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods; recommended ideal design standards.	0.701 – 0.800
D	Tolerate operating speeds; 31 to 70 percent of the signal cycle have one or more vehicles which wait through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.	0.801 – 0.900
E	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	0.901 – 1.000
F	Long queues of traffic, unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume which occurs at Level of Service “E”.	> 1.000

Source: Santa Fe Springs General Plan, Circulation Element, City of Santa Fe Springs, 1994.

### **Significance Criteria**

According to the City guidelines, an intersection operating at a LOS D or better is considered to be operating satisfactory. A significant impact occurs if the operating conditions worsen from LOS D or better to LOS E or F after the addition of the traffic generated by a project. If the intersection is already operating at LOS E or F in the without-project conditions, a significant impact occurs if the V/C ratio increases by 0.01 or more after the addition of the traffic generated by a project.

### **Site Access and Circulation**

A qualitative site access and circulation analysis was conducted. This included a review of the proposed Project access points and a review of truck turning movements expected to occur on the site and whether the proposed Project site provided sufficient space to make the movements.

## 2.0 EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions in the vicinity of the proposed Project. The Existing Conditions analysis includes an assessment of the existing street system and an analysis of traffic volumes and current operating conditions.

### 2.1 ROADWAY NETWORK

The existing roadway network in the study area is comprised of the following street system:

**Interstate 605 (I-605)** is a freeway providing a connection between Interstate 210 and State Route 22. I-605 travels in the north-south direction west of the Project site. In the study area, there are generally five 12-foot general purpose lanes in each direction and access is provided via ramps on Telegraph Avenue and Slauson Avenue. The posted speed limit on I-605 is 65 miles per hour (mph).

**Interstate I-5 (I-5)** is a freeway providing a connection throughout Greater Los Angeles and extends to the north and to the south beyond Los Angeles. I-5 travels in the north-south direction south of the Project site. In the study area, there are generally three 12-foot general purpose lanes in each direction and access is provided via ramps on San Antonio Drive (which turns into Norwalk Boulevard) and Rosecrans Avenue. The posted speed limit on I-5 is 65 miles per hour (mph).

**Norwalk Boulevard** is a north-south major arterial roadway per the City's Circulation Element of the General Plan with two travel lanes in each direction. The street is approximately 80 feet wide with a posted speed limit of 40 miles per hour and consists of a two-way left-turn center lane. Parking is generally not permitted along both sides of the street.

**Santa Fe Springs Road** is a northeast-southwest major arterial roadway per the City's Circulation Element of the General Plan with two travel lanes in each direction. The street is approximately 80 feet wide with a posted speed limit of 45 miles per hour and consists of both raised center medians and a two-way left-turn center lane. With the exception of short segments, parking is generally not permitted along both sides of the street. The Project site is accessible from Santa Fe Springs Road via an existing driveway.

**Greenleaf Avenue** is a northwest-southwest secondary arterial roadway per the City's Circulation Element of the General Plan with one travel lane in each direction. The street is approximately 60 feet wide with a posted speed limit of 40 miles per hour and consists of a two-way left-turn center lane. Parking is generally permitted along both sides of the street. The Project site is accessible from Greenleaf Avenue via an existing driveway.

**Slauson Avenue** is an east-west major arterial roadway per the City's Circulation Element of the General Plan with three travel lanes in each direction. The street is approximately 85 feet wide with a

posted speed limit of 45 miles per hour and consists of a raised center median. Parking is generally not permitted along both sides of the street.

**Reis Street** is an east-west residential collector per the Los Angeles County Street Masterplan with one travel lane in each direction. The street is approximately 40 feet wide with a speed limit of 25 miles per hour. Parking is generally permitted along both sides of the street.

**Sorensen Avenue** is an east-west secondary arterial roadway per the City's Circulation Element of the General Plan with one travel lane in each direction in the project study area (widens to two lanes in each direction and shifts to a north-south direction west of the study area). The street is approximately 60 feet wide with a speed limit of 40 miles per hour and consists of a two-way left-turn center lane. Parking is generally permitted along both sides of the street.

**Barton Road** is an east-west residential collector per the Los Angeles County Street Masterplan with one travel lane in each direction. The street is approximately 35 feet wide with a speed limit of 25 miles per hour. Parking is generally permitted along both sides of the street.

**Los Nietos Road** is a northwest-southwest secondary arterial roadway per the City's Circulation Element of the General Plan with one travel lane in each direction. The street is approximately 60 feet wide with a posted speed limit of 40 miles per hour and consists of a two-way left-turn center lane. Parking is generally permitted along both sides of the street. The Project site is accessible from Los Nietos Road via an existing driveway.

**Telegraph Road** is an east-west major arterial roadway per the City's Circulation Element of the General Plan with three travel lanes in each direction. The street is approximately 80 feet wide with a posted speed limit ranging from 40-45 miles per hour and consists of a raised center median. Parking is generally not permitted along both sides of the street.

## 2.2 TRANSIT FACILITIES

The Norwalk Transit System (NTS) and Los Angeles County Metropolitan Transportation Authority (LA Metro) provide transit service in the study area. The following routes operate in the vicinity of the proposed Project site:

**NTS Route 3** extends from the Gateway Plaza to the Norwalk Boulevard/166<sup>th</sup> Street intersection. Route 3 travels on Telegraph Road in the vicinity of the proposed Project site. During the weekday AM and PM commute periods, Route 3 provides headways of approximately 60 minutes (one bus per hour) in both directions.

**NTS Route 7** extends from the El Monte Station to the Green Line Station. Route 7 travels on Santa Fe Springs Road in the vicinity of the proposed Project site. During the weekday AM commute period, Route 7 provides headways of approximately 50 minutes (approximately one bus per hour) in both directions. During the PM commute period, Route 7 provides headways of approximately 50 minutes (approximately one bus per hour) in both directions.

**LA Metro Route 120** extends from the Whittwood Town Center to the Aviation/LAX Station. Route 120 travels on Telegraph Road in the vicinity of the proposed Project site. During the weekday AM commute period, Route 120 provides headways of approximately 45 minutes (approximately 1.3 buses per hour) in both directions. During the weekday PM commute period, Route 120 provides headways of approximately 45 minutes (approximately 1.3 buses per hour) in the both directions.

## 2.3 BICYCLE AND PEDESTRIAN FACILITIES

A Class II Bicycle Lane is provided on Los Nietos Road west of Santa Fe Springs Road and on Santa Fe Springs Road south of Los Nietos Road. No other bicycle facilities are provided in the immediate vicinity of the proposed Project site.

All of the roadways in the study area, except Los Nietos Road, consist of sidewalks on both sides of the street, and all signalized intersections provide marked pedestrian crosswalks with pedestrian signals.

## 2.4 EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

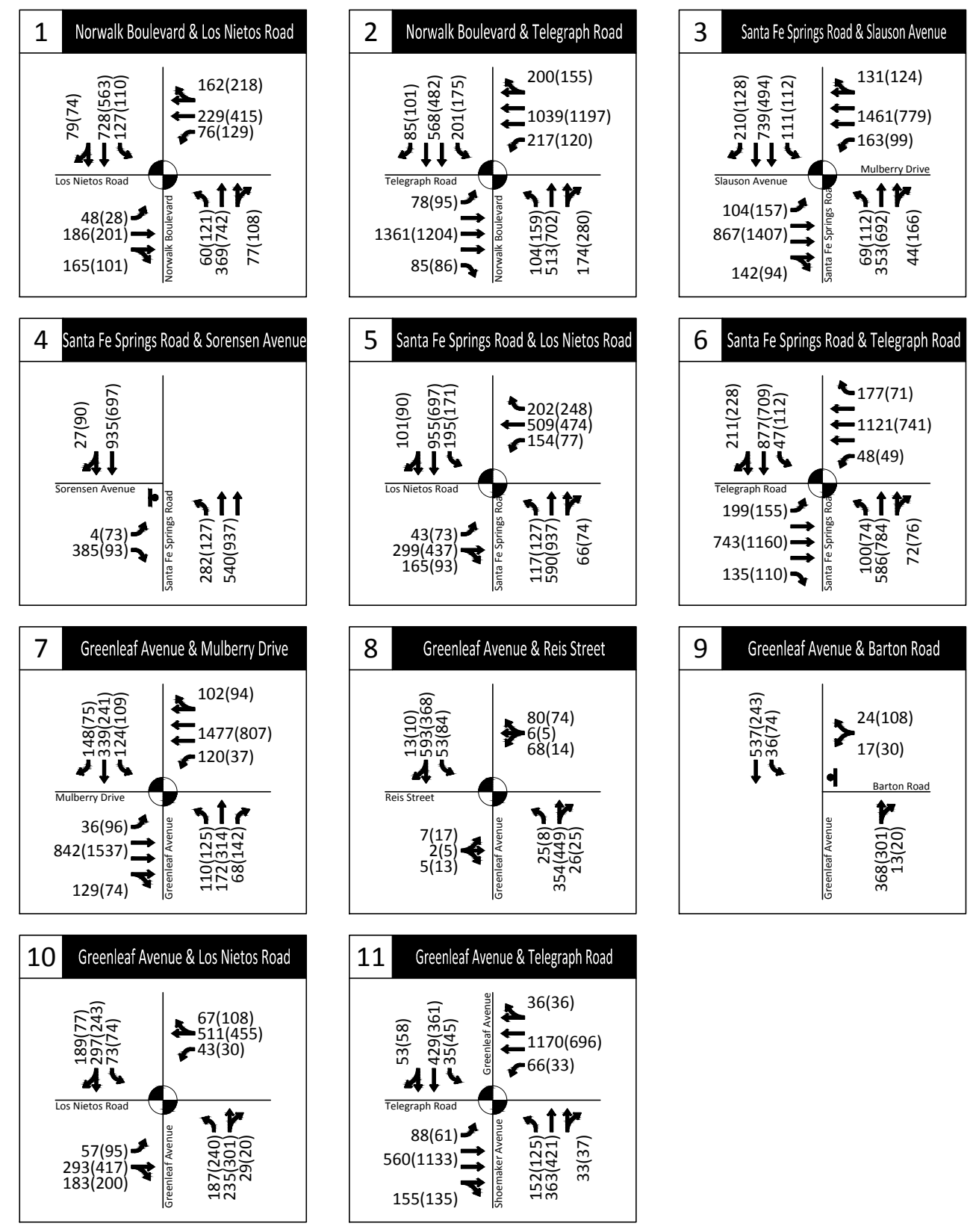
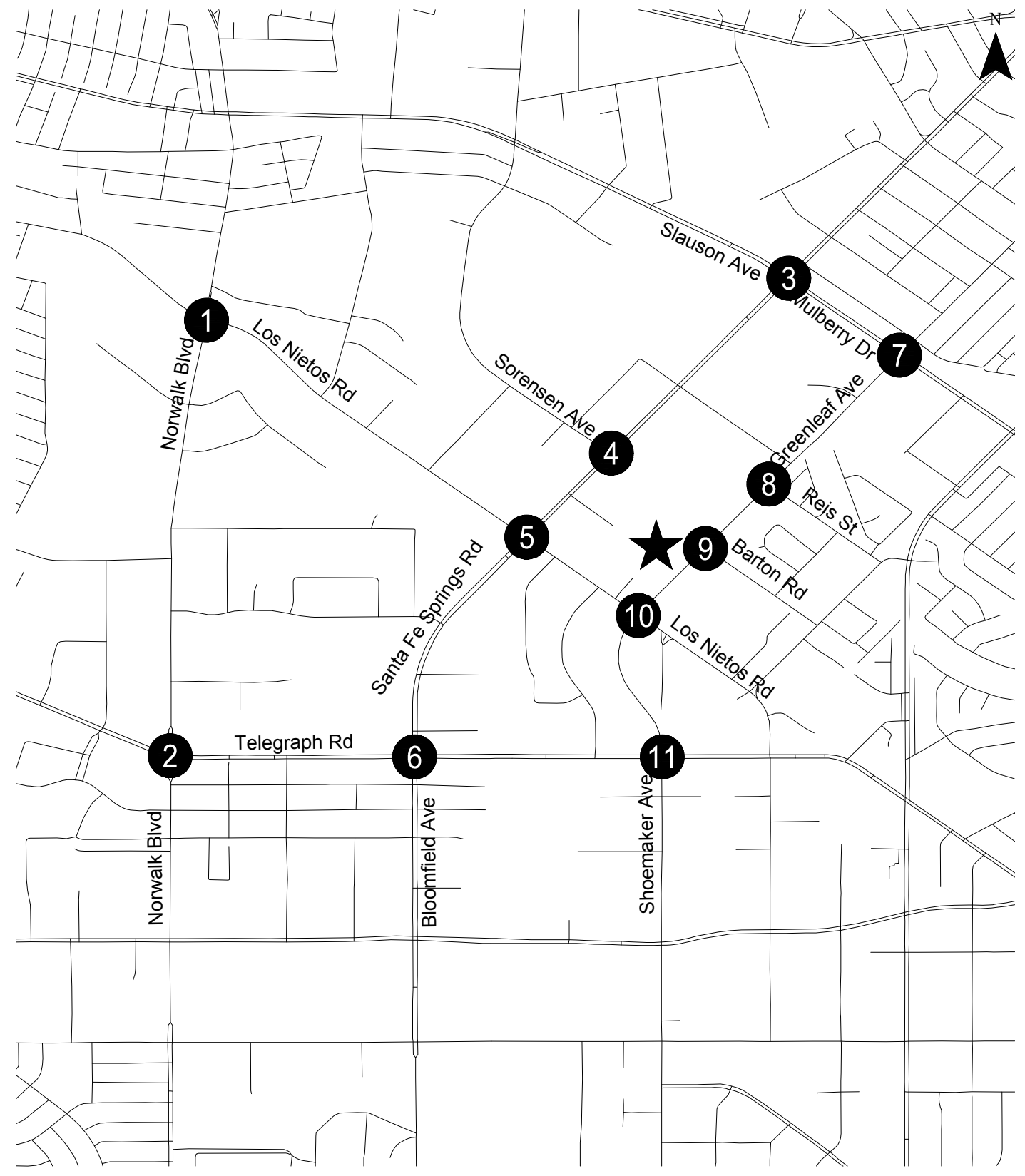
This section presents the existing peak hour turning movement traffic volumes and the resulting operating conditions at each study intersection.

### Existing Traffic Volumes

The existing operations of the study intersections were assessed for the weekday AM and PM peak hours. Existing traffic volume data at the intersections of Norwalk Boulevard/Los Nietos Road (Intersection 1) and Norwalk Boulevard/Telegraph Road (Intersection 2) was collected on Wednesday, April 10, 2019 and the existing traffic volume data at the remaining intersections was collected on Wednesday, May 16, 2018. Both days represent a typical weekday with local schools and colleges in session. Data was collected between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. The peak hour volumes utilized in this analysis, shown in Figure 3, represent the highest hour during the weekday AM and PM data collection periods.

Appendix A provides the detailed count sheets for each intersection.

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AM(PM) - Traffic Volume  
 + - Stop Sign  
 ⦿ - Traffic Signal

Existing Traffic Volumes  
 AM & PM Peak Hours  
 Santa Fe Springs, California

Figure 3

## Existing Intersection Levels of Service

Intersection turning movement volumes, lane configurations, and traffic control were used to calculate the levels of service using the ICU method at the study intersections for the weekday AM and PM peak hours. Table 2 shows the LOS results based on the V/C ratios for the study intersections under Existing Conditions. As shown, all intersections currently operate at or better than the LOS D standard set forth by the City during both peak hours.

Detailed LOS worksheets for Existing Conditions are presented in Appendix B.

**Table 2: Intersection Level of Service - Existing Conditions**

#	Intersection	Control	Peak Hour	Existing	
				V/C	LOS
1	Norwalk Boulevard/Los Nietos Road	Signalized	AM	0.575	A
			PM	0.677	B
2	Norwalk Boulevard/Telegraph Road	Signalized	AM	0.842	D
			PM	0.849	D
3	Santa Fe Springs Road/Slauson Avenue-Mulberry Drive	Signalized	AM	0.748	C
			PM	0.787	C
4	Santa Fe Springs Road/Sorensen Avenue	TWSC	AM	0.572	A
			PM	0.527	A
5	Santa Fe Springs Road/Los Nietos Road	Signalized	AM	0.838	D
			PM	0.840	D
6	Santa Fe Springs Road-Bloomfield Avenue/Telegraph Road	Signalized	AM	0.825	D
			PM	0.710	C
7	Greenleaf Avenue/Mulberry Drive	Signalized	AM	0.722	C
			PM	0.714	C
8	Greenleaf Avenue/Reis Street	Signalized	AM	0.569	A
			PM	0.455	A
9	Greenleaf Avenue/Barton Road	TWSC	AM	0.383	A
			PM	0.366	A
10	Greenleaf Avenue/Los Nietos Road	Signalized	AM	0.860	D
			PM	0.824	D
11	Greenleaf Avenue/Telegraph Road	Signalized	AM	0.636	B
			PM	0.612	B

Notes:

V/C – Volume to Capacity Ratio

LOS – Level of Service

Signalized – Signal Controlled Intersection

TWSC – Two-Way Stop Controlled

Source: Kittelson & Associates, Inc., 2019

## 3.0 PROPOSED PROJECT TRAVEL DEMAND

This chapter describes the assumptions and methodology used in developing the traffic volumes associated with the proposed Project within the Study Area.

### 3.1 PROPOSED PROJECT DESCRIPTION

The proposed Project includes the construction of one new building that would consist of 200,500 sf of warehousing space (approximately 60,150 sf of which is anticipated to be utilized for light industrial uses with the remaining 140,350 sf used as general warehousing space) and a 16,000-sf office to support the industrial tenants. In addition, the proposed Project would provide 459 surface parking spaces intended for trailer parking and storage but may also be utilized by automobiles.

Site access would be provided via one driveway on Santa Fe Springs Road, one driveway on Los Nietos Avenue, and one driveway on Greenleaf Avenue. Due to the driveway's close proximity to St. Paul High School to the north, the driveway on Greenleaf Avenue would be restricted to automobiles only and trucks would not be able to access the site through it. Primary truck access would be provided via the driveway on Santa Fe Springs Road and the driveway on Los Nietos Avenue.

### 3.2 PROPOSED PROJECT TRIP GENERATION

The number of trips expected to be generated by the proposed Project were estimated using rates published in the Institute of Transportation Engineer's (ITE) Trip Generation Manual<sup>3</sup>. These rates are provided as both daily rates and AM and PM peak hour rates. Overall, the rates relate the number of vehicle trips traveling to and from the Project Site to the size of development of each land use. No credit for the existing uses on the project site was taken as the existing uses are largely vacant.

Based on discussions with the City staff and the project sponsor, the General Light Industrial land-use rates (ITE Code 110), the Warehousing land-use rates (ITE Code 150), and General Office Building land-use rates (ITE Code 710) were applied to determine the number of trips generated by the proposed Project. Data from the Fontana Truck Trip Generation Study<sup>4</sup> was used to account for the trucks expected to be generated by the proposed Project. It was estimated that 21.4% of the trips would be truck trips and a passenger car equivalent (PCE) factor was applied to the expected number of truck trips to convert them into automobile trips. Appendix C includes the detailed Project trip generation rates and calculations. The trips associated with the open yard component of the proposed Project that would be utilized for trailer parking and storage are captured by the square footage of the building in

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<sup>3</sup> Trip Generation Manual, 10<sup>th</sup> Edition, Institute of Transportation Engineers, September 2017.

<sup>4</sup> Fontana Truck Trip Generation Study, City of Fontana, August 2003.



the trip generation estimates. This portion of the proposed Project is not expected to generate additional trips.

As shown in Table 3, the proposed Project is expected to generate 863 trips on a weekday daily basis, including 105 trips in the AM peak hour (83 inbound and 22 outbound) and 103 trips in the PM peak hour (27 inbound and 76 outbound).

**Table 3: Project Trip Generation**

Land Use	GLA	Units	Daily	AM			PM		
				In	Out	Total	In	Out	Total
General Light Industrial (ITE Code 110)	60,150	sf	298	32	10	42	10	28	38
Warehousing (ITE Code 150)	140,350	Sf	244	18	6	24	7	20	27
Office (ITE Code 710)	16,000	sf	156	16	3	19	3	15	18
Estimated Number of Total Passenger Vehicle Trips (78.6% of total trips) [a]			582	56	15	71	17	52	69
Estimated Number of Total Truck Trips (21.4% of total trips) [b]			115	11	3	14	4	10	14
Estimated Number of Total Truck PCE Trips [c]			281	27	7	34	10	24	34
<b>TOTAL [a+c]</b>			<b>863</b>	<b>83</b>	<b>22</b>	<b>105</b>	<b>27</b>	<b>76</b>	<b>103</b>

Notes:

GLA – Gross Leasable Area

sf – Square feet

Source: Kittelson & Associates, Inc., 2019

### 3.3 PROJECT TRIP DISTRIBUTION

The geographic distribution of trips generated by the proposed Project is dependent on characteristics of the street system serving the proposed Project Site and the level of accessibility of the routes to and from the proposed Project Site. The truck trip distribution was prepared in accordance with the designated City of Santa Fe Springs truck routes and no trucks were assigned traveling north on Greenleaf Avenue north of the proposed Project driveway.

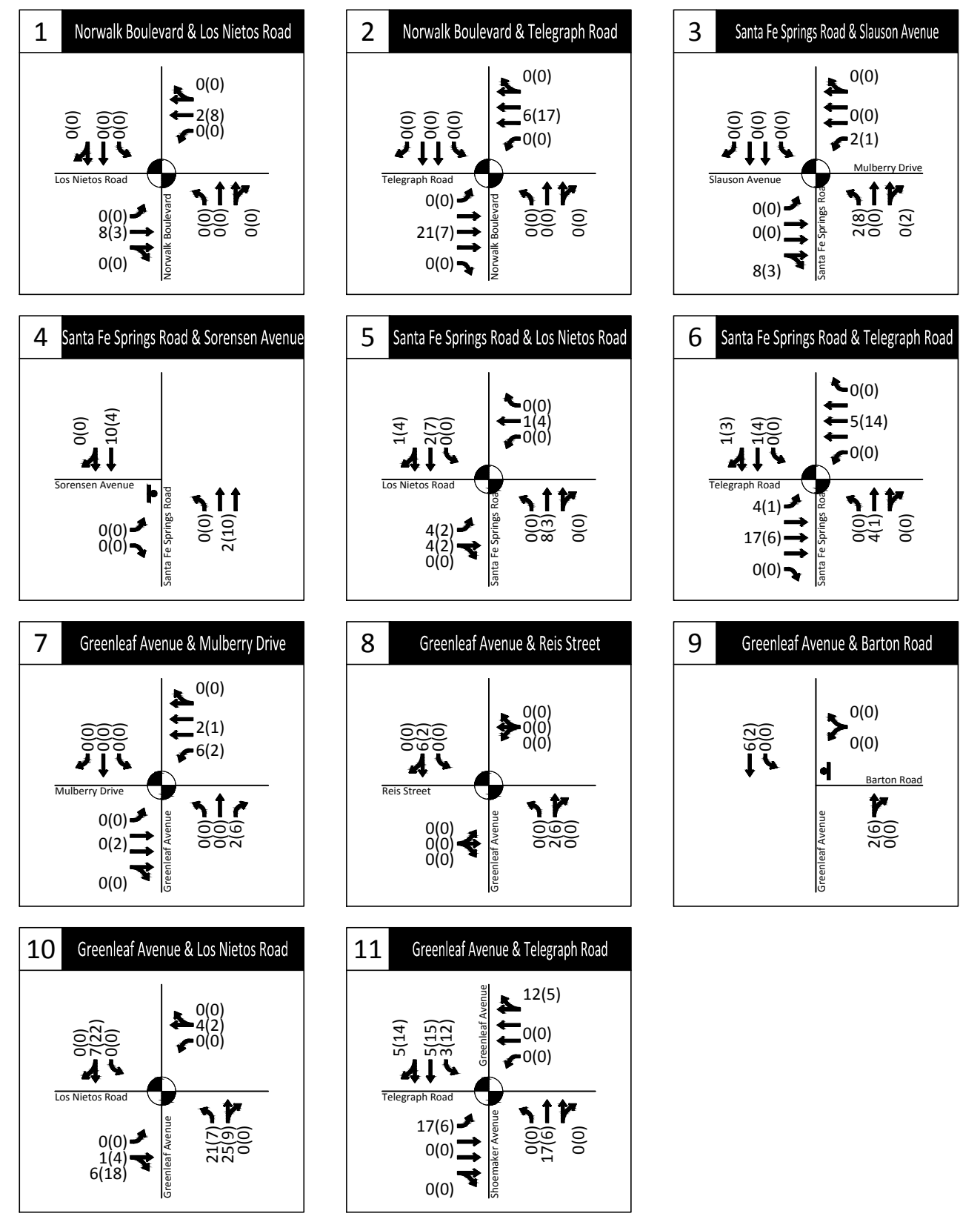
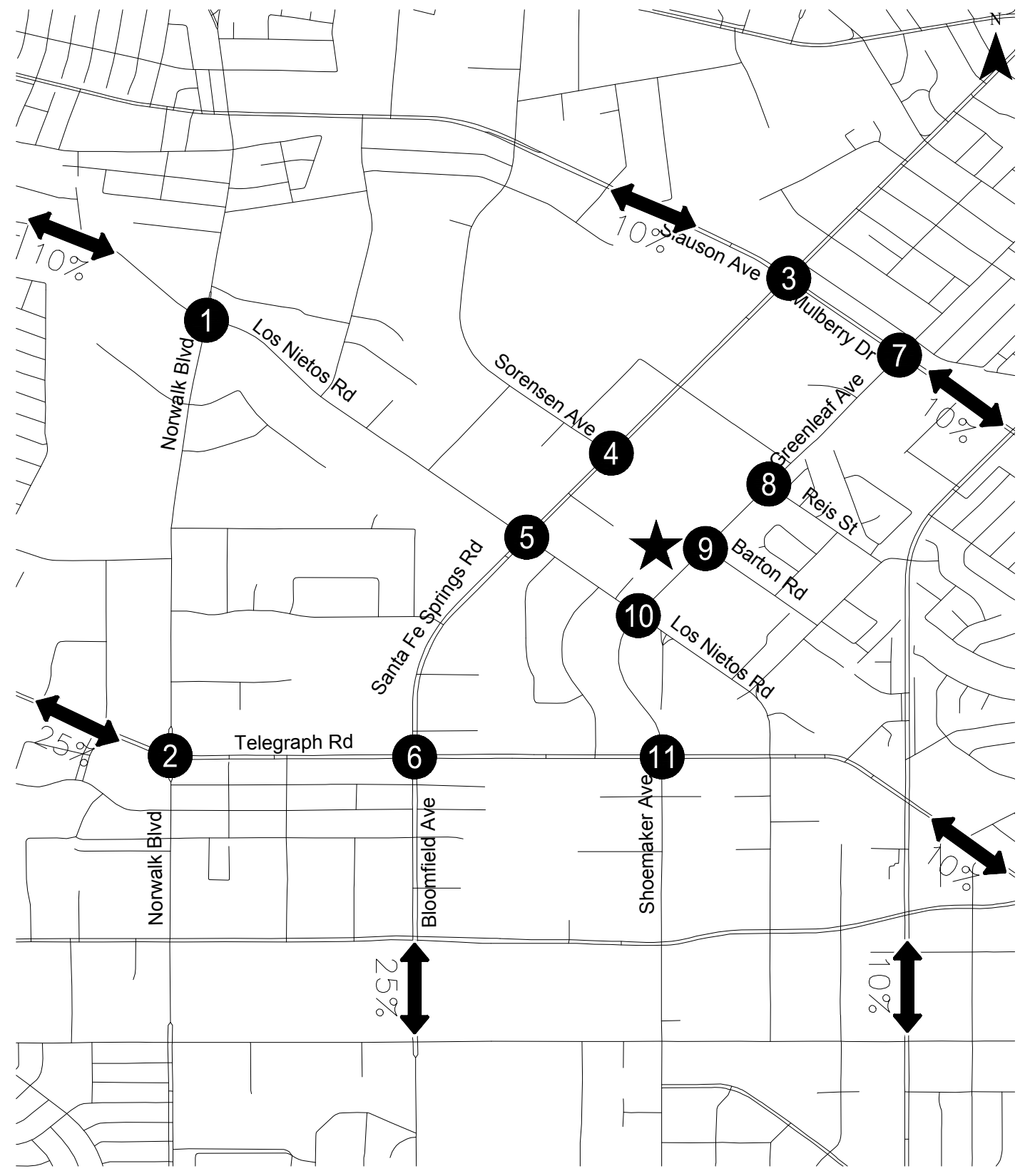
The proposed Project trip distribution is presented in Figure 4.

### 3.4 PROJECT TRIP ASSIGNMENT

The trip distribution patterns shown in Figure 4 were applied to the proposed Project trip generation estimates summarized in Table 3 to calculate Project-generated traffic through the study intersections. Figure 4 illustrates the Project-only traffic volumes at the study intersections during the weekday AM and PM peak hours.



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AM(PM) - Traffic Volume  
 + - Stop Sign  
 ● - Traffic Signal

Project-Only Traffic Volumes  
 AM & PM Peak Hours  
 Santa Fe Springs, California

Figure  
 4

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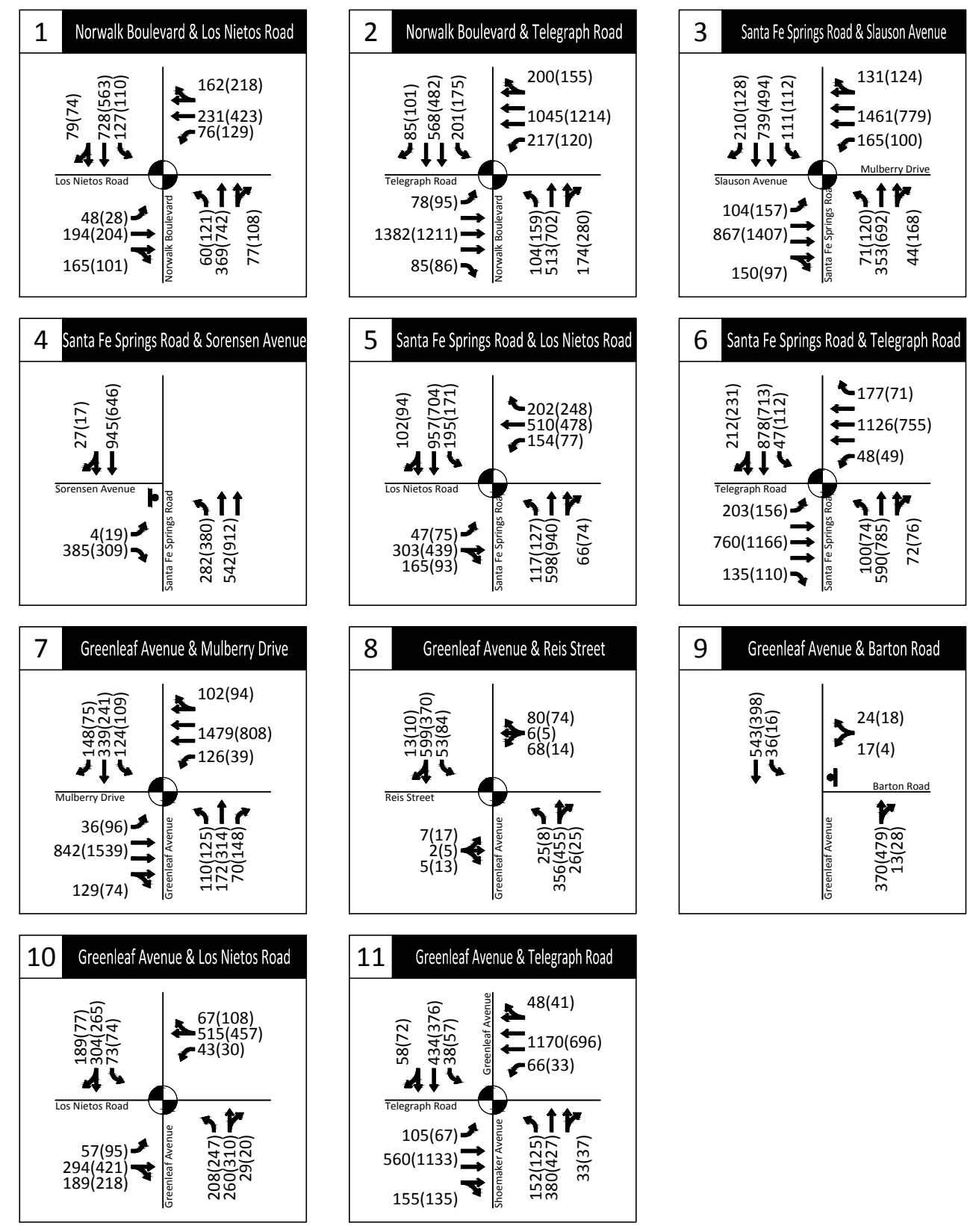
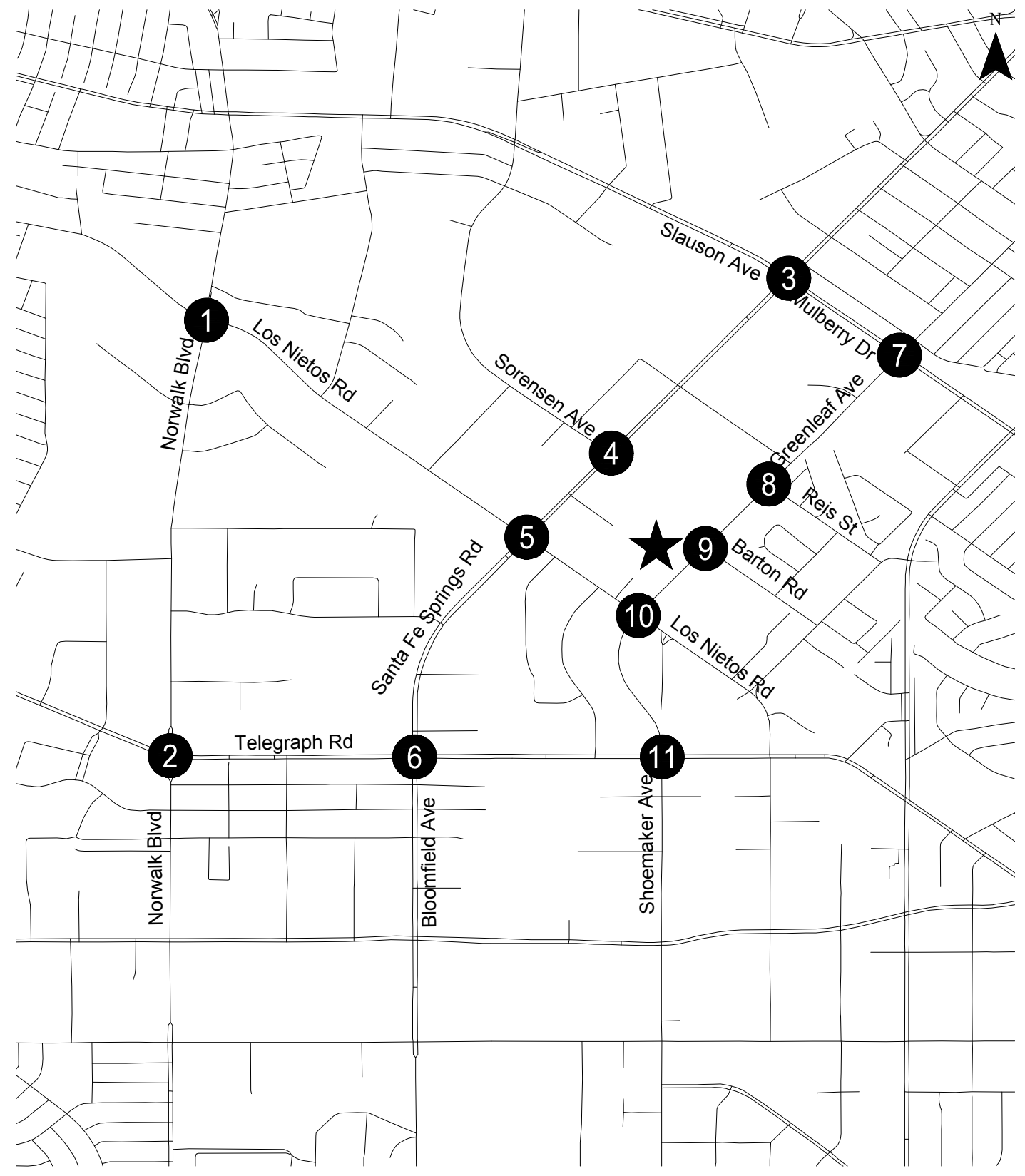
## 4.0 EXISTING PLUS PROJECT CONDITIONS

This section describes intersection operating conditions associated with the addition of the proposed Project traffic to the Existing Conditions. The analysis utilizes the data presented in the Existing Conditions section, plus the new activity generated by the proposed Project. The Existing Plus Project Conditions represent the existing traffic volumes and intersection configurations in year 2019 with the addition of the proposed Project traffic.

### 4.1 EXISTING PLUS PROJECT TRAFFIC VOLUMES

The weekday AM and PM peak hour traffic volumes generated by the proposed Project (as shown in Figure 4) were added to the Existing AM and PM peak hour traffic volumes (as shown in Figure 3). The resulting volumes are illustrated in Figure 5 and represent Existing Plus Project Conditions after addition of the proposed Project traffic to the Existing Conditions.

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AM(PM) - Traffic Volume  
 + - Stop Sign  
 ⦿ - Traffic Signal

Existing Plus Project Traffic Volumes  
 AM & PM Peak Hours  
 Santa Fe Springs, California

Figure  
 5

## 4.2 EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Existing lane configurations and traffic controls were used along with the Existing Plus Project traffic volumes to calculate the levels of service at the study intersections for the weekday AM and PM peak hours.

Table 4 shows the LOS results based on the V/C ratios for the study intersections for Existing Plus Project Conditions. As shown, all intersections continue to operate at or better than the LOS D standard set forth by the City during both peak hours. As such, the addition of the proposed Project traffic would not cause any significant impacts at the study intersections during the Existing Plus Project Conditions.

Detailed LOS worksheets for Existing Plus Project Conditions are presented in Appendix D.

**Table 4: Intersection Level of Service - Existing Plus Project Conditions**

#	Intersection	Control	Peak Hour	Existing		Existing Plus Project	
				V/C	LOS	V/C	LOS
1	Norwalk Boulevard/Los Nietos Road	Signalized	AM	0.575	A	0.576	A
			PM	0.677	B	0.679	B
2	Norwalk Boulevard/Telegraph Road	Signalized	AM	0.842	D	0.846	D
			PM	0.849	D	0.852	D
3	Santa Fe Springs Road/Slauson Avenue-Mulberry Drive	Signalized	AM	0.748	C	0.748	C
			PM	0.787	C	0.789	C
4	Santa Fe Springs Road/Sorensen Avenue	TWSC	AM	0.572	A	0.575	A
			PM	0.527	A	0.528	A
5	Santa Fe Springs Road/Los Nietos Road	Signalized	AM	0.838	D	0.841	D
			PM	0.840	D	0.842	D
6	Santa Fe Springs Road-Bloomfield Avenue/Telegraph Road	Signalized	AM	0.825	D	0.829	D
			PM	0.710	C	0.713	C
7	Greenleaf Avenue/Mulberry Drive	Signalized	AM	0.722	C	0.723	C
			PM	0.714	C	0.714	C
8	Greenleaf Avenue/Reis Street	Signalized	AM	0.569	A	0.573	A
			PM	0.455	A	0.459	A
9	Greenleaf Avenue/Barton Road	TWSC	AM	0.383	A	0.386	A
			PM	0.366	A	0.369	A
10	Greenleaf Avenue/Los Nietos Road	Signalized	AM	0.860	D	0.877	D
			PM	0.824	D	0.853	D
11	Greenleaf Avenue/Telegraph Road	Signalized	AM	0.636	B	0.651	B
			PM	0.612	B	0.620	B

Notes:

V/C – Volume to Capacity Ratio

LOS – Level of Service

Signalized – Signal Controlled Intersection (LOS based on V/C ratios)

TWSC – Two-Way Stop Controlled (LOS based on highest delay approach)

Source: Kittelson & Associates, Inc., 2019

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## 5.0 OPENING YEAR 2020 CONDITIONS

The Opening Year 2020 Conditions analysis forecasts how the study area's transportation system would operate with the full build-out of the proposed Project in combination with the growth and changes of the surrounding community by the year 2020. To derive the Opening Year 2020 baseline traffic forecast volumes, approved and pending projects in the vicinity of the proposed Project site were considered.

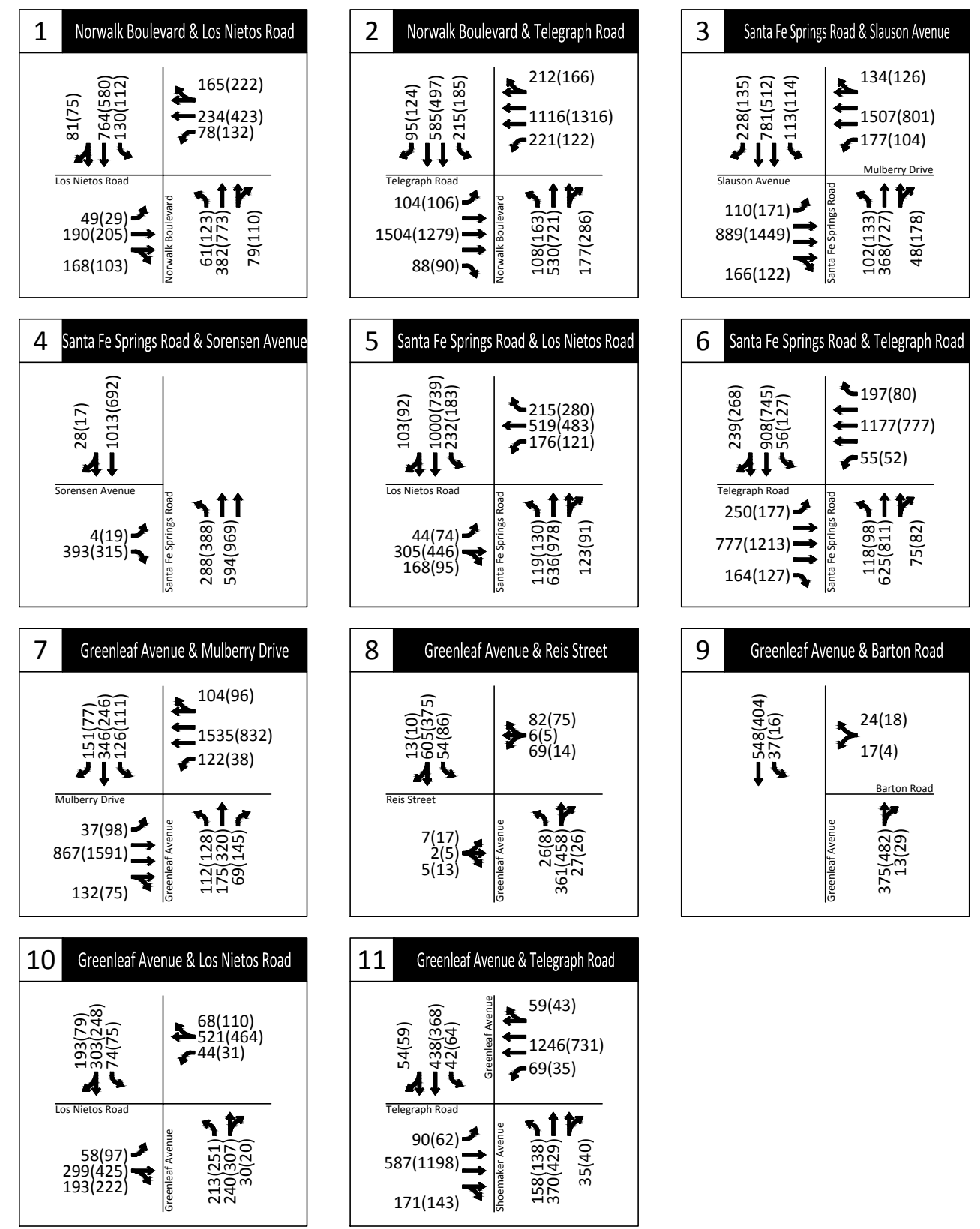
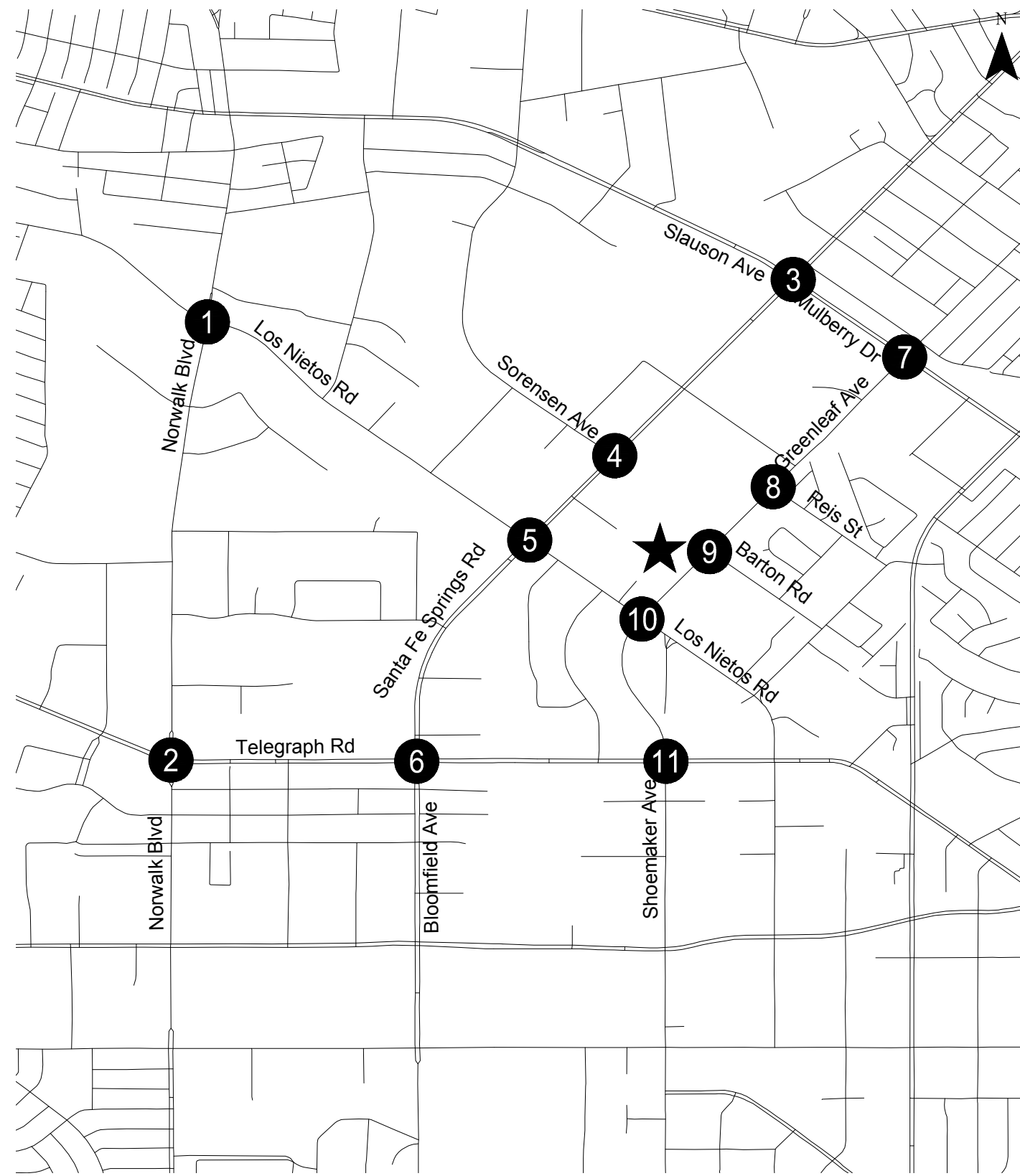
### 5.1 EXPECTED TRANSPORTATION IMPROVEMENTS

Based on conversations with the City staff, no roadway improvements or changes are expected to be implemented by the year 2020 in the study area.

### 5.2 TRAFFIC VOLUME FORECASTING

A list of approved/pending projects was provided by the City staff and is included in Appendix E. The number of trips generated by the approved/pending projects is also presented in Appendix E. Per direction from the City staff, a 1% per year growth rate was applied to the Existing traffic volumes and the traffic expected to be generated by the approved/pending projects was added. The resulting Opening Year 2020 Conditions traffic volumes is presented in Figure 6.

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AM(PM) - Traffic Volume

- Stop Sign
- Traffic Signal

Opening Year 2020 Traffic Volumes  
AM & PM Peak Hours  
Santa Fe Springs, California

Figure  
6



### 5.3 OPENING YEAR 2020 INTERSECTION LEVEL OF SERVICE

The Opening Year 2020 Conditions traffic counts presented in Figure 7 were added to the existing street network to calculate the levels of service at the study intersections for the weekday AM and PM peak hours. Table 5 shows the LOS results based on the V/C ratios for the study intersections for Opening Year 2020 Conditions. As shown, all intersections would operate at or better than the LOS D standard set forth by the City during both peak hours.

Detailed LOS worksheets for Opening Year 2020 Conditions are presented in Appendix F.

**Table 5: Intersection Level of Service – Opening Year 2020 Conditions**

#	Intersection	Control	Peak Hour	Opening Year 2020	
				V/C	LOS
1	Norwalk Boulevard/Los Nietos Road	Signalized	AM	0.588	A
			PM	0.690	B
2	Norwalk Boulevard/Telegraph Road	Signalized	AM	0.885	D
			PM	0.893	D
3	Santa Fe Springs Road/Slauson Avenue-Mulberry Drive	Signalized	AM	0.788	C
			PM	0.819	D
4	Santa Fe Springs Road/Sorensen Avenue	TWSC	AM	0.599	A
			PM	0.545	A
5	Santa Fe Springs Road/Los Nietos Road	Signalized	AM	0.869	D
			PM	0.894	D
6	Santa Fe Springs Road-Bloomfield Avenue/Telegraph Road	Signalized	AM	0.892	D
			PM	0.755	C
7	Greenleaf Avenue/Mulberry Drive	Signalized	AM	0.739	C
			PM	0.729	C
8	Greenleaf Avenue/Reis Street	Signalized	AM	0.578	A
			PM	0.462	A
9	Greenleaf Avenue/Barton Road	TWSC	AM	0.388	A
			PM	0.371	A
10	Greenleaf Avenue/Los Nietos Road	Signalized	AM	0.886	D
			PM	0.852	D
11	Greenleaf Avenue/Telegraph Road	Signalized	AM	0.663	B
			PM	0.635	B

Notes:

V/C – Volume to Capacity Ratio

LOS – Level of Service

Signalized – Signal Controlled Intersection (LOS based on V/C ratios)

TWSC – Two-Way Stop Controlled (LOS based on highest delay approach)

Source: Kittelson & Associates, Inc., 2019

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## 6.0 OPENING YEAR 2020 PLUS PROJECT CONDITIONS

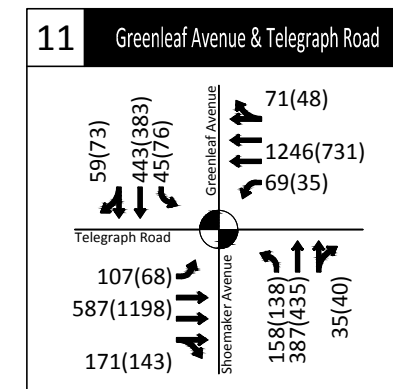
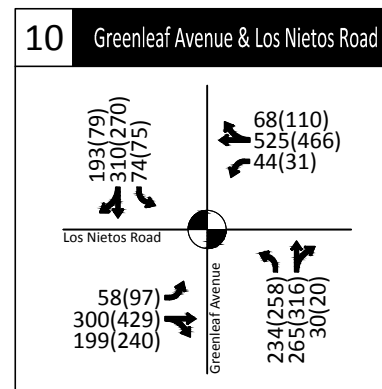
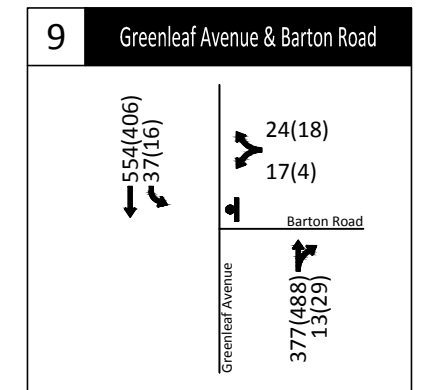
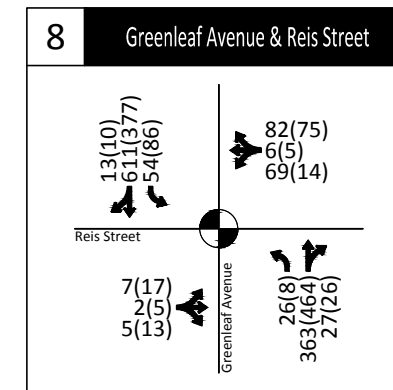
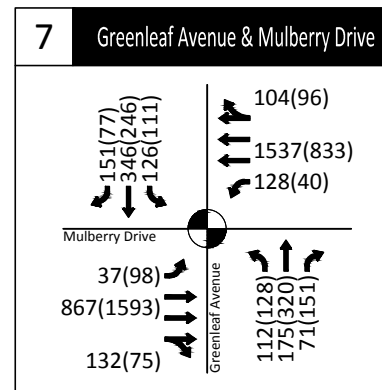
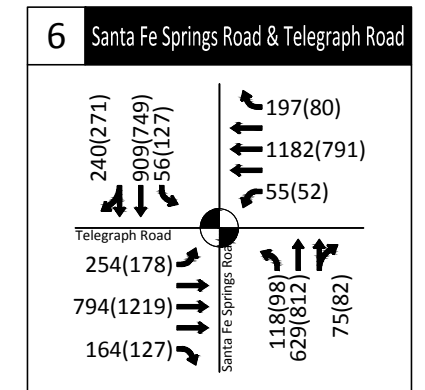
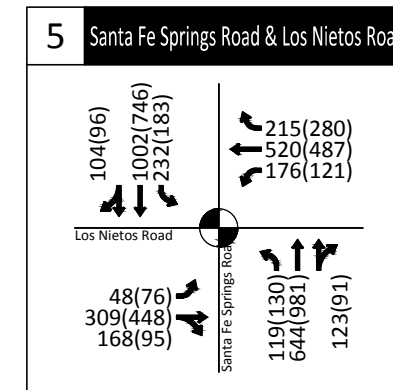
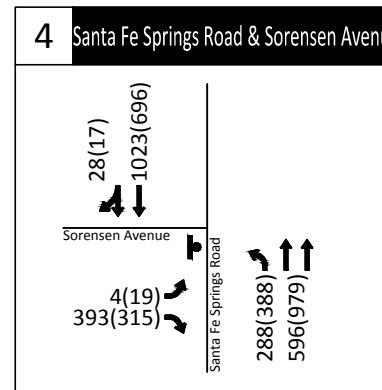
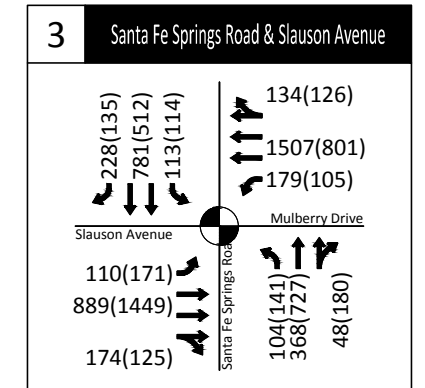
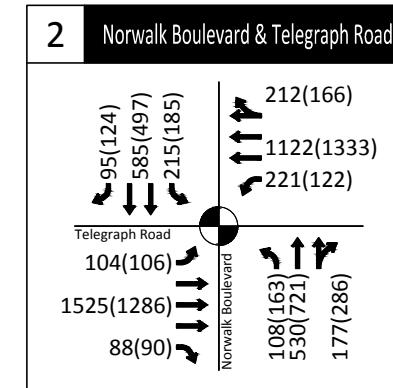
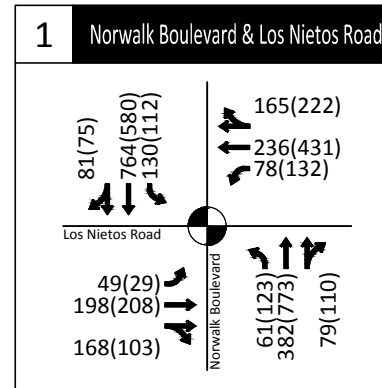
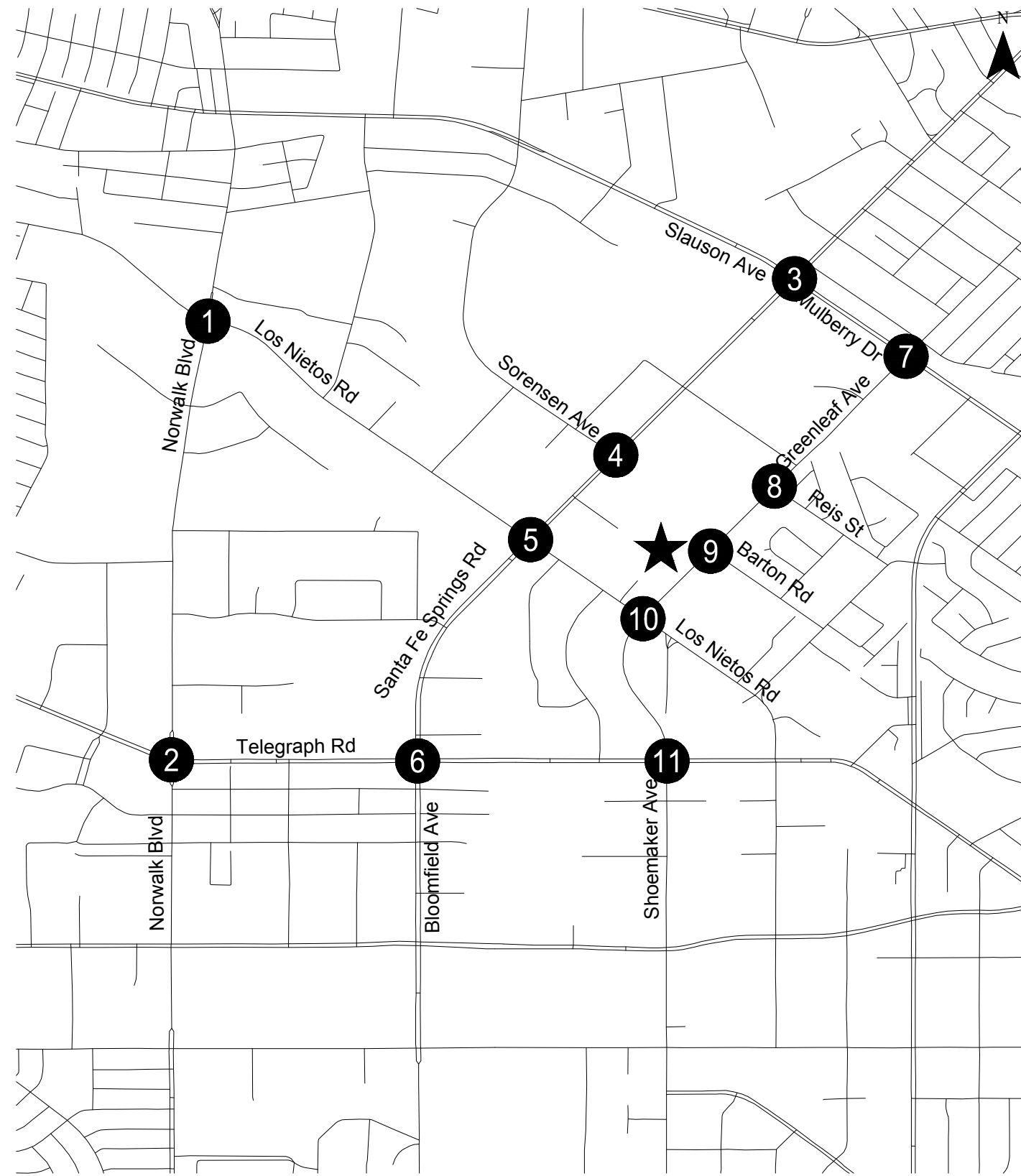
This section describes intersection operating conditions associated with the addition of the proposed Project traffic to the Opening Year 2020 Conditions.

### 6.1 OPENING YEAR 2020 PLUS PROJECT TRAFFIC VOLUMES

The weekday AM and PM peak hour traffic volumes generated by the proposed Project (as shown in Figure 4) were added to the Opening Year 2020 Conditions AM and PM peak hour traffic volumes (as shown in Figure 6). The resulting volumes are illustrated in Figure 7 and represent Opening Year 2020 Plus Project Conditions after addition of the proposed Project traffic to the Opening Year 2020 Conditions.



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AM(PM) - Traffic Volume

- Stop Sign
- Traffic Signal

Opening Year 2020 Plus Project Traffic Volumes  
AM & PM Peak Hours  
Santa Fe Springs, California

Figure  
7

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## 6.2 OPENING YEAR 2020 PLUS PROJECT INTERSECTION LEVEL OF SERVICE

The Opening Year 2020 Plus Project traffic volumes were added to the existing street network to calculate the levels of service at the study intersections for the AM and PM peak hours.

Table 6 shows the LOS results based on the V/C ratios for the study intersections for Opening Year 2020 Plus Project Conditions. As shown, all intersections would continue to operate at or better than the LOS D standard set forth by the City during both peak hours except for the Greenleaf Avenue/Los Nietos Road intersection (intersection 10), which would operate at LOS E during the AM peak hour. As such, the addition of the proposed Project traffic would cause a significant impact at the Greenleaf Avenue/Los Nietos Road intersection during the Opening Year 2020 Plus Project Conditions and a mitigation measure to alleviate the significant impact at the intersection has been proposed.

Detailed LOS worksheets for Opening Year 2020 Plus Project Conditions are presented in Appendix G.

**Table 6: Intersection Level of Service – Opening Year 2020 Plus Project Conditions**

#	Intersection	Control	Peak Hour	Opening Year 2020		Opening Year 2020 Plus Project	
				V/C	LOS	V/C	LOS
1	Norwalk Boulevard/Los Nietos Road	Signalized	AM	0.588	A	0.588	A
			PM	0.690	B	0.693	B
2	Norwalk Boulevard/Telegraph Road	Signalized	AM	0.885	D	0.889	D
			PM	0.893	D	0.896	D
3	Santa Fe Springs Road/Slauson Avenue-Mulberry Drive	Signalized	AM	0.788	C	0.789	C
			PM	0.819	D	0.821	D
4	Santa Fe Springs Road/Sorensen Avenue	TWSC	AM	0.599	A	0.602	B
			PM	0.545	A	0.546	A
5	Santa Fe Springs Road/Los Nietos Road	Signalized	AM	0.869	D	0.872	D
			PM	0.894	D	0.895	D
6	Santa Fe Springs Road-Bloomfield Avenue/Telegraph Road	Signalized	AM	0.892	D	0.896	D
			PM	0.755	C	0.758	C
7	Greenleaf Avenue/Mulberry Drive	Signalized	AM	0.739	C	0.739	C
			PM	0.729	C	0.729	C
8	Greenleaf Avenue/Reis Street	Signalized	AM	0.578	A	0.581	A
			PM	0.462	A	0.466	A
9	Greenleaf Avenue/Barton Road	TWSC	AM	0.388	A	0.392	A
			PM	0.371	A	0.374	A
<b>10</b>	<b>Greenleaf Avenue/Los Nietos Road</b>	<b>Signalized</b>	<b>AM</b>	<b>0.886</b>	<b>D</b>	<b>0.903</b>	<b>E</b>
			PM	0.852	D	0.880	D
11	Greenleaf Avenue/Telegraph Road	Signalized	AM	0.663	B	0.678	B
			PM	0.635	B	0.644	B

Notes:

V/C – Volume to Capacity Ratio

LOS – Level of Service

Signalized – Signal Controlled Intersection (LOS based on volume weighted average of delay for all approaches)

TWSC – Two-Way Stop Controlled (LOS based on highest delay approach)

**BOLD** – Significantly impact intersection

Source: Kittelson & Associates, Inc., 2019

## 7.0 MITIGATIONS

The addition of the proposed Project traffic would cause a significant impact at the Greenleaf Avenue/Los Nietos Road intersection during the AM peak hour for Opening Year 2020 Plus Project Conditions. This section presents the proposed mitigation measures to alleviate the significant impact at the intersection. The operating conditions with the mitigation measure implemented were analyzed and compared with the significant impact found for the Opening Year 2020 Plus Project Conditions.

### 7.1 SPECIFIC INTERSECTION IMPROVEMENT

Specific intersection improvements designed to alleviate the significant impact were considered and are identified in this section.

In order to reduce the significant impact at the Greenleaf Avenue/Los Nietos Road intersection (Intersection 10) to a less-than-significant level, a 100-foot long (consistent with the existing left-turn lane) southbound right-turn only lane should be striped adjacent to the curb. Currently, the curb lane is approximately 24 feet wide and operates as a shared through/right-turn lane. As such, striping a separate southbound right-turn only lane would result in a 12-foot through lane and a 12-foot right-turn lane. The resulting southbound lane configurations on Greenleaf Avenue would be one left-turn only lane, one through lane, and one right-turn only lane. This mitigation measure can be accommodated within the existing right of way for Greenleaf Avenue and no widening of the roadway would be required. The project would be required to implement this mitigation measure prior to opening.

### 7.2 INTERSECTION LEVEL OF SERVICE WITH MITIGATION

This section provides the change in the level of service results after implementation of the proposed mitigations measures at the impacted study intersection for the Opening Year 2020 Plus Project Conditions.

Table 7 shows a comparison between results under the Opening Year 2020 Conditions and the results with the proposed mitigation measures implemented at the Greenleaf Avenue/Los Nietos Road intersection. As shown, the proposed mitigation measure (restripe to add a separate southbound right-turn lane) improves the LOS to an acceptable level of LOS D based on City standards and reduces the impact to less-than-significant levels during the Opening Year 2020 Plus Project Conditions.

Detailed LOS worksheets for Opening Year 2020 Plus Project Conditions with Mitigation Conditions are presented in Appendix G.

**Table 7: Intersection Level of Service - Opening Year 2020 Plus Project with Mitigation Conditions**

#	Intersection	Control	Peak Hour	Opening Year 2020		Opening Year 2020 Plus Project with Mitigation	
				V/C	LOS	V/C	LOS
10	Greenleaf Avenue/Los Nietos Road	Signalized	AM	0.886	D	0.785	C
			PM	0.852	D	0.832	D

Notes:

V/C – Volume to Capacity Ratio

LOS – Level of Service

Signalized – Signal Controlled Intersection (LOS based on volume weighted average of delay for all approaches)

Source: Kittelson & Associates, Inc., 2019

## 8.0 SITE ACCESS AND CIRCULATION

This section describes the access and on-site circulation for the proposed Project site.

### 8.1 SITE ACCESS

As shown in the site plan provided in Figure 2, site access would be provided via one driveway on Santa Fe Springs Road, one driveway on Los Nietos Road, and one driveway on Greenleaf Avenue. Due to the driveway's close proximity to St. Paul High School to the north, the driveway on Greenleaf Avenue would be restricted to automobiles only and trucks would not be able to access the site through it. Primary truck access would be provided via the driveway on Santa Fe Springs Road and the driveway on Los Nietos Road. As currently proposed, all proposed Project driveways would operate as full access with all inbound movements uncontrolled and all outbound movements stop-controlled.

A review of the access points found that inbound vehicles making a right-turn into the proposed Project site at any of the driveways are not expected to experience any queuing on City streets as these inbound movements would be uncontrolled internal to the proposed Project site. As shown in the truck turning templates provided in Appendix H, trucks turning right into the proposed Project driveways on Santa Fe Springs Road and Los Nietos Road would need to utilize the entire curb lane as well as the entire width of the driveway.

Santa Fe Springs Road, Los Nietos Road and Greenleaf Avenue all consist of striped two-way left-turn center lanes. Inbound vehicles making a left-turn into the proposed Project site at either of the driveways are able to utilize the two-way left-turn center lanes to seek refuge and there is adequate vehicle storage in these center lanes for queueing. Any queuing that would occur for the outbound left turn movements will occur on the proposed Project site and would not affect City streets. As shown in the truck turning templates provided in Appendix H, trucks turning left into the proposed Project driveways on Santa Fe Springs Road and Los Nietos Road are able to adequately make the movement from the center two-way left-turn lanes and need to utilize the entire width of the driveway.

### 8.2 SITE CIRCULATION

As shown in the site plan in Figure 2, the proposed Project would provide surface parking spaces intended for trailer parking on the western portion of the Project site. The site plan provides adequate space for trucks to turn into and out of the proposed Project site and circulate through the truck parking and storage area. The site plan also provides adequate space in front of the loading dock positions for trucks to maneuver into and out of the loading docks. The truck turning templates for circulation internal to the proposed Project site are provided in Appendix H.

The proposed Project would also provide automobile parking areas to the north and south of the proposed warehouse building located on the east side of the Project site. The site plan provides

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adequate space for automobiles to turn into and out of the proposed Project site and circulate through the automobile parking areas. Trucks would not be able to access the automobile parking areas.

## 9.0 CONCLUSIONS AND FINDINGS

The proposed Project includes the construction of one new building that would consist of 200,500 sf of warehousing space (approximately 60,150 sf of which is anticipated to be utilized for light industrial uses with the remaining 140,350 sf used as general warehousing space) and a 16,000-sf office to support the industrial tenants. In addition, the proposed Project would provide 459 surface parking spaces intended for trailer parking and storage but may also be utilized by automobiles.

Based on the City's significant impact criteria, it is expected that the addition of the proposed Project traffic would not cause any significant impacts at the study intersections during the Existing Plus Project Conditions but would result in one significant impact during the AM peak hour of the Opening Year 2020 Plus Project Conditions at the Greenleaf Avenue/Los Nietos Road intersection. The mitigation recommended at this intersection proposes to stripe a southbound right-turn only lane adjacent to the curb. This mitigation measure can be accommodated within the existing right of way and no widening of the roadway would be required. The proposed mitigation measure improves the LOS to an acceptable level based on City standards and reduces the impact to less-than-significant levels during the Opening Year 2020 Plus Project Conditions. The project would be required to implement this mitigation measure prior to opening.

Based on the proposed Project site plan, no issues were identified with site access and circulation. The proposed Project site plan provided adequate space on-site for truck stacking and thus, no excessive queuing at the proposed Project driveways would occur on any City streets.



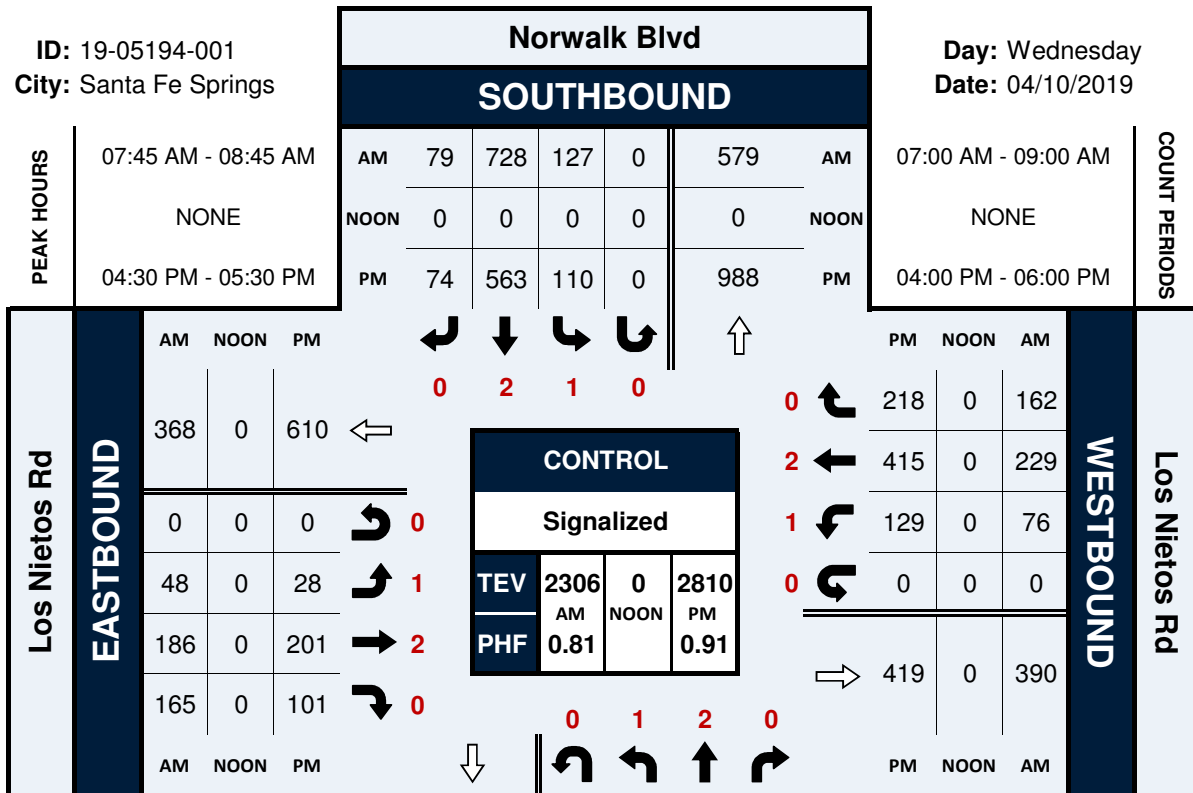
**Appendix A**  
Traffic Count Data

# Norwalk Blvd & Los Nietos Rd

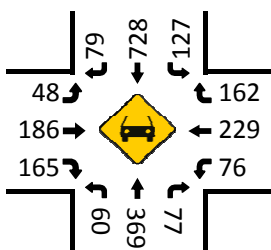
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City: Santa Fe Springs

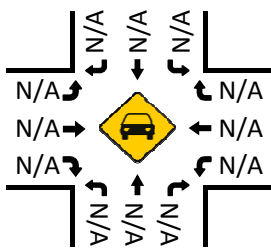
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Date: 04/10/2019



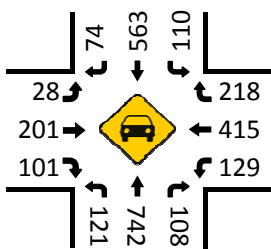
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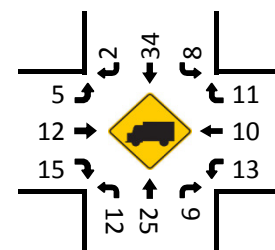
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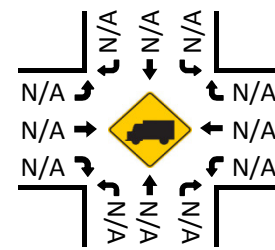
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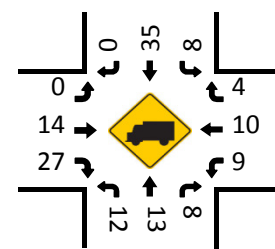
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HT (NOON)



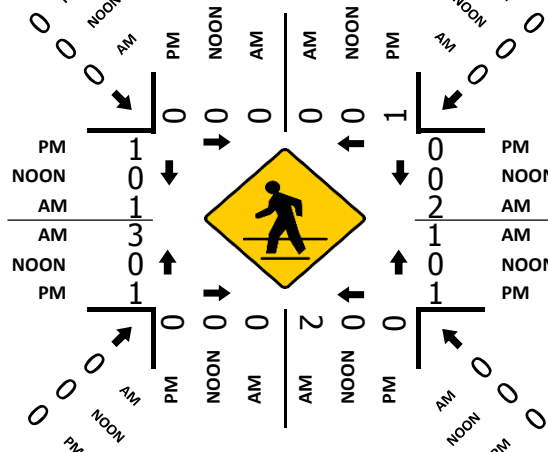
HT (PM)



## NORTHBOUND

Norwalk Blvd					
PM	793	0	121	742	108
NOON	0	0	0	0	0
AM	969	0	60	369	77

Pedestrians (Crosswalks)

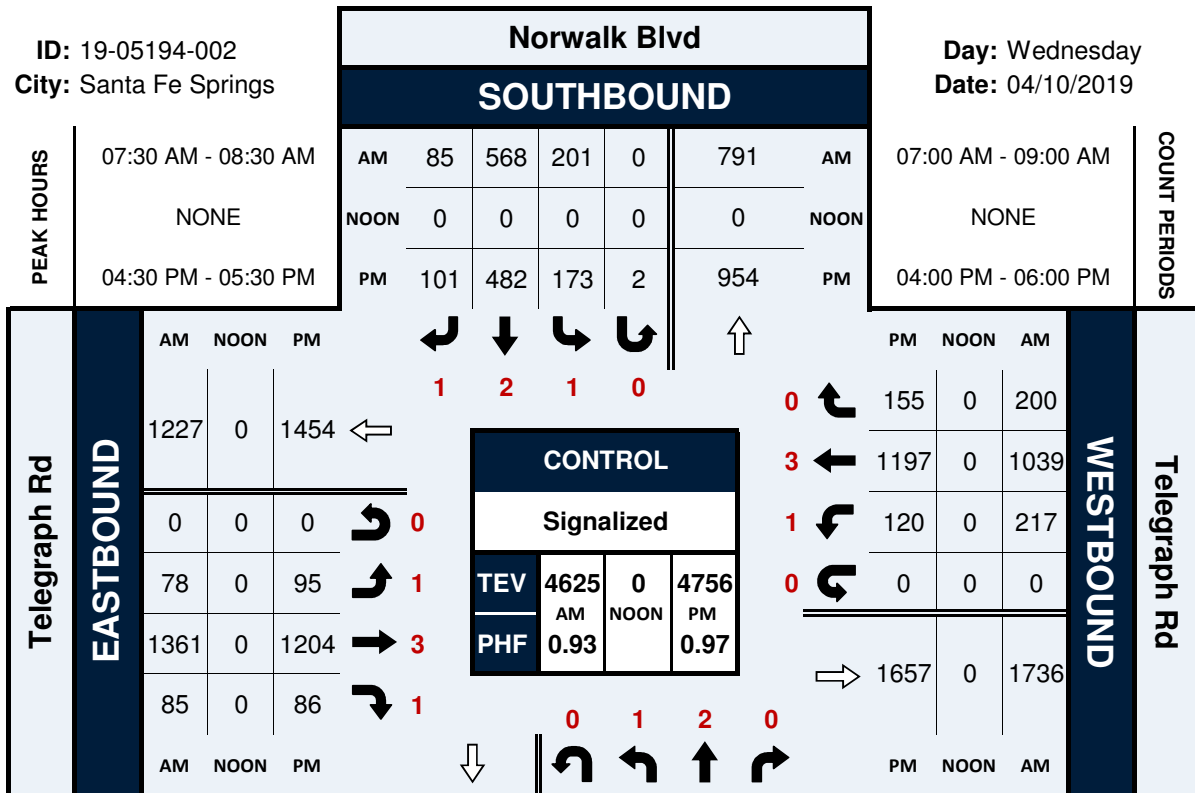


# Norwalk Blvd & Telegraph Rd

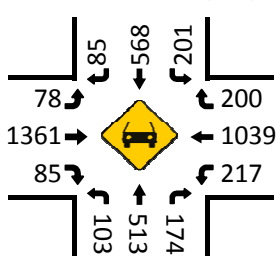
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City: Santa Fe Springs

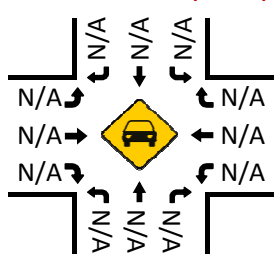
Day: Wednesday  
Date: 04/10/2019



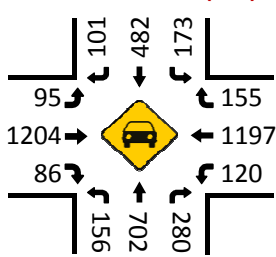
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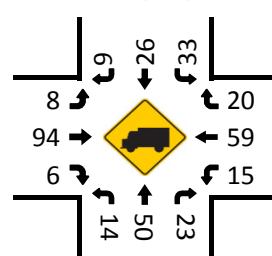
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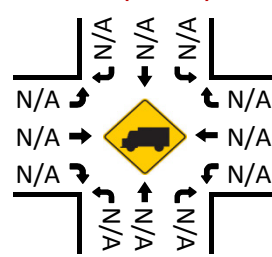
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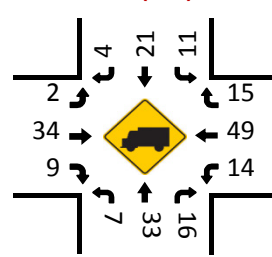
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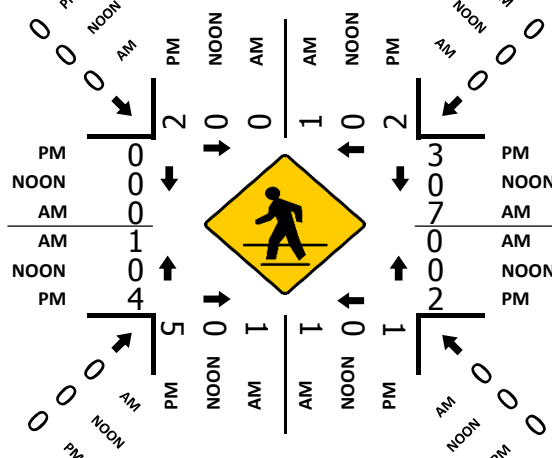
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HT (PM)



Pedestrians (Crosswalks)

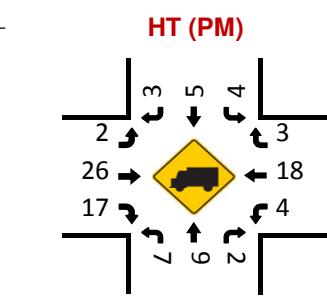
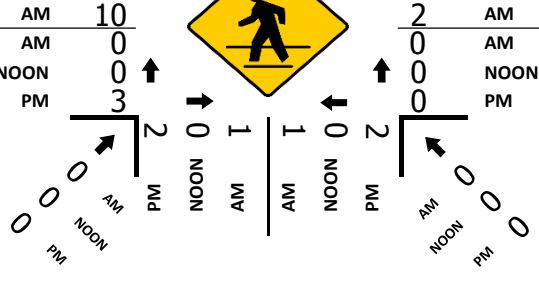
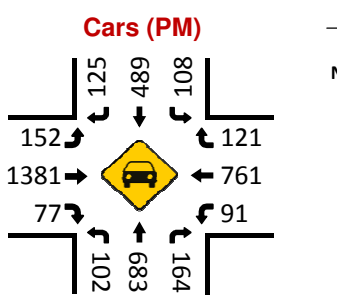
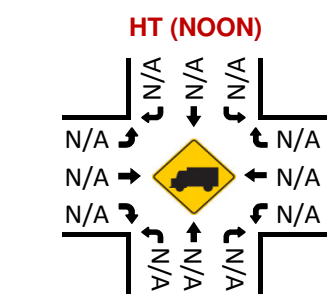
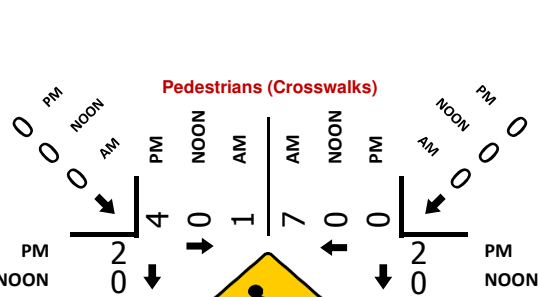
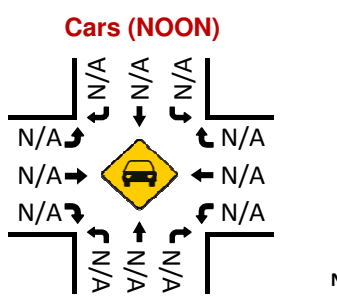
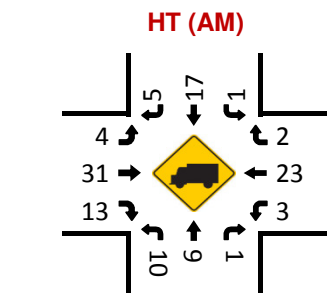
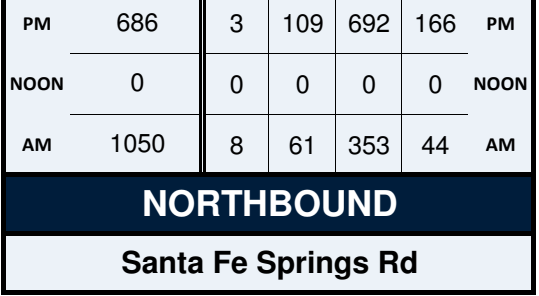
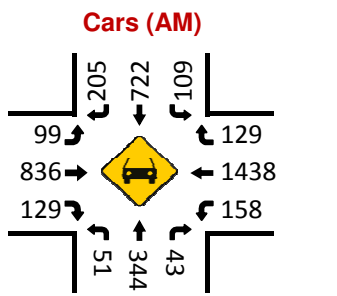
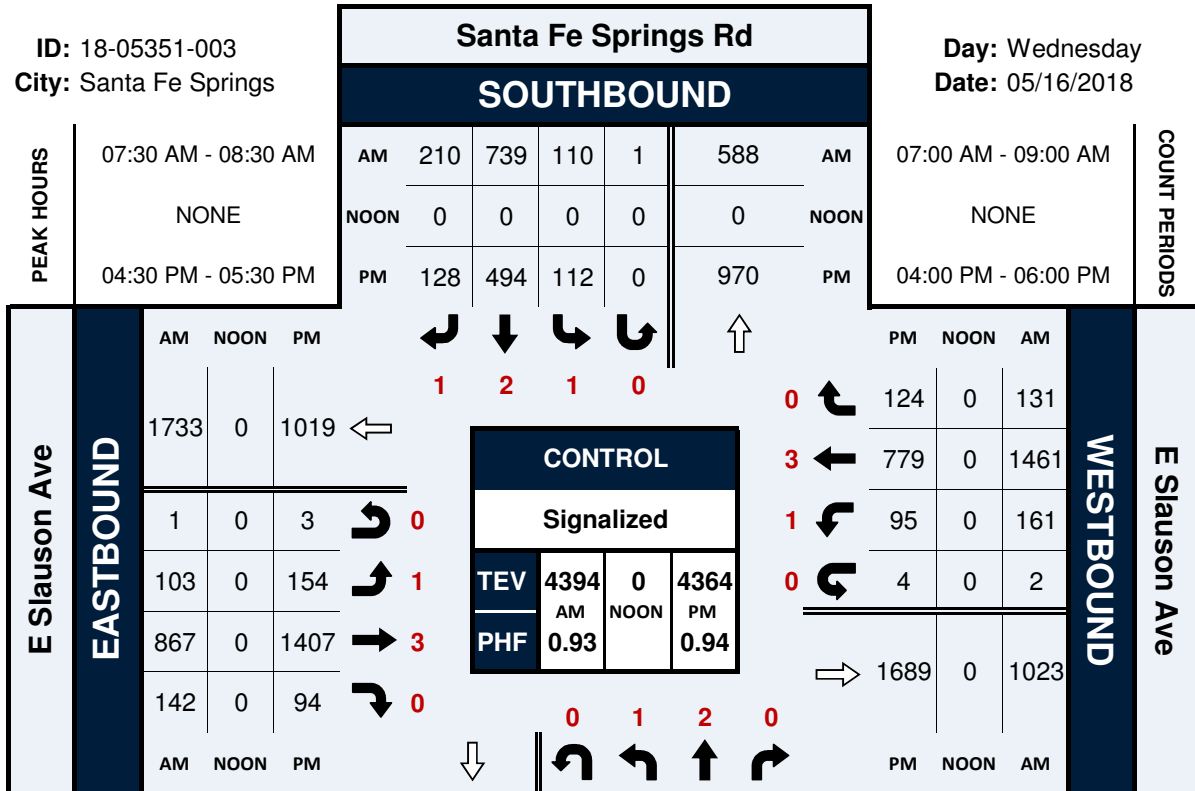


# Santa Fe Springs Rd & E Slauson Ave

## Peak Hour Turning Movement Count

ID: 18-05351-003  
City: Santa Fe Springs

Day: Wednesday  
Date: 05/16/2018

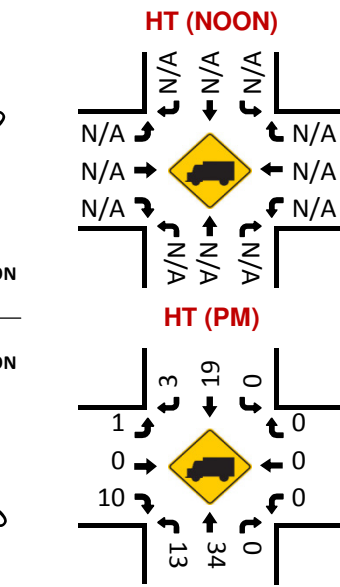
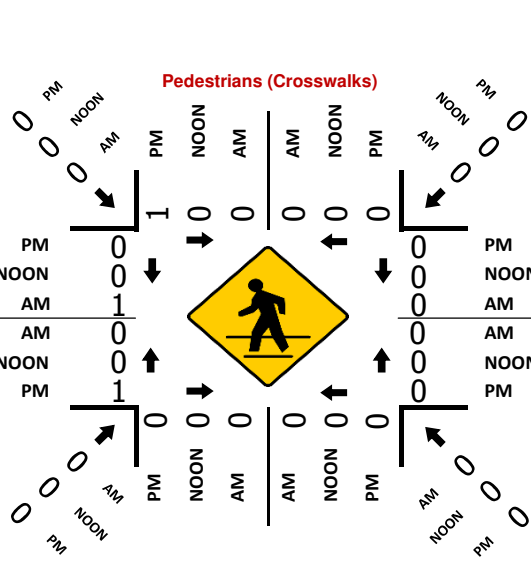
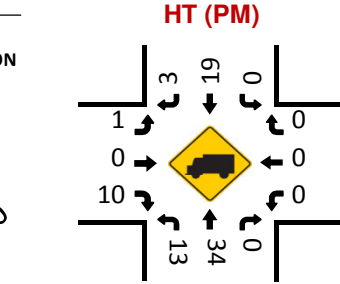
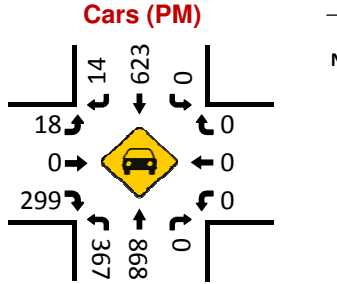
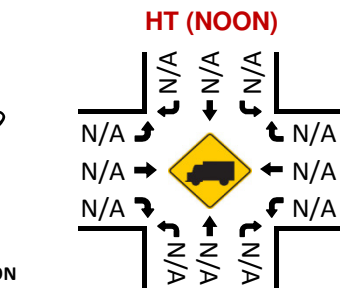
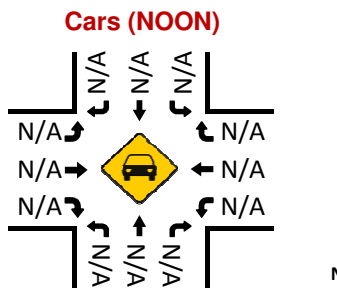
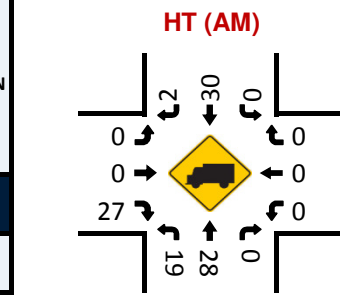
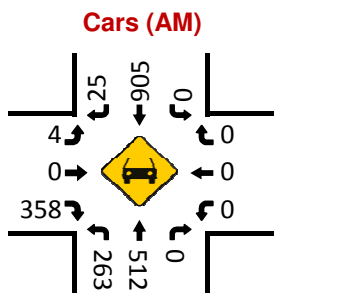
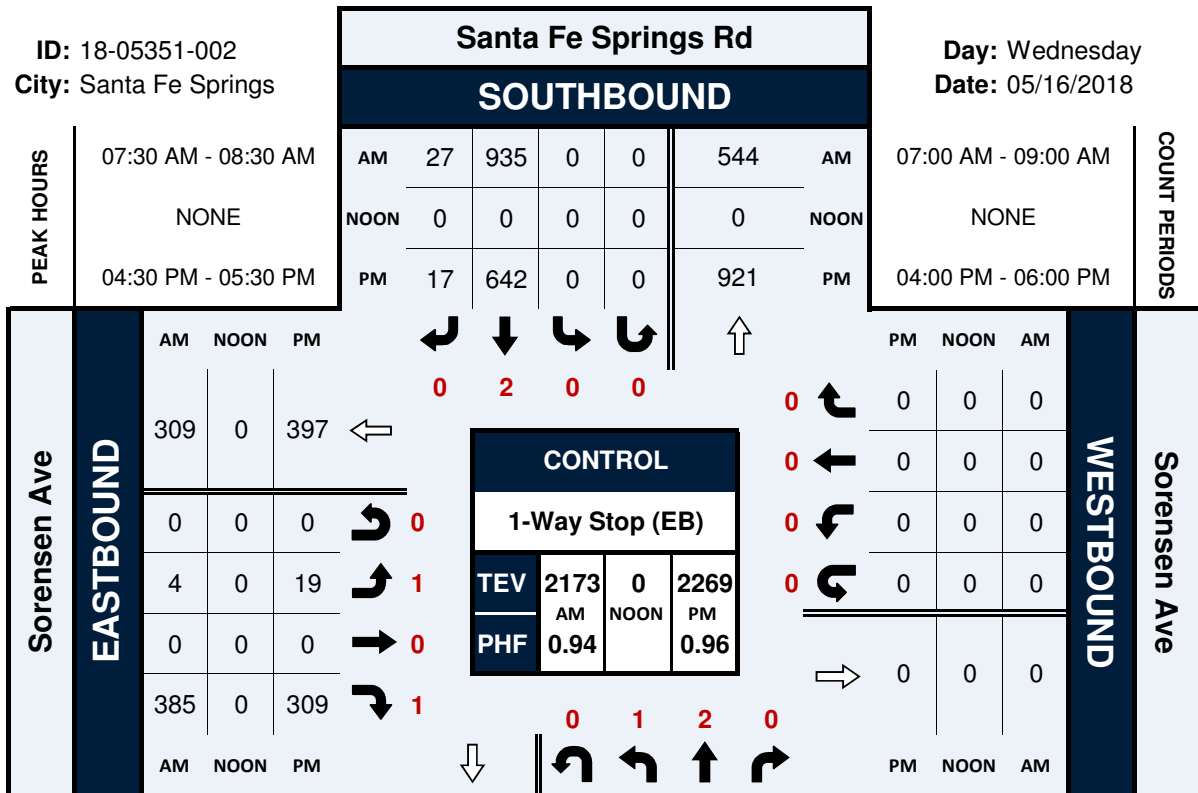


# Santa Fe Springs Rd & Sorensen Ave

## Peak Hour Turning Movement Count

ID: 18-05351-002  
City: Santa Fe Springs

Day: Wednesday  
Date: 05/16/2018

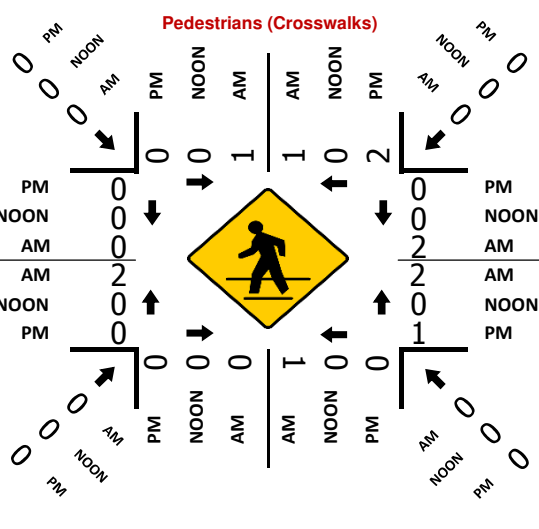
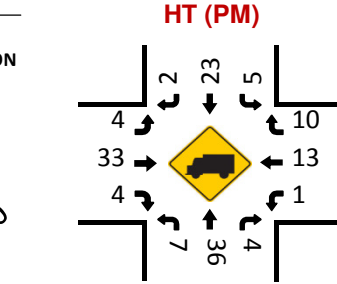
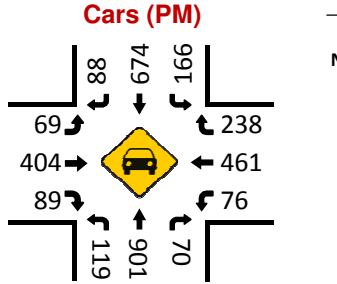
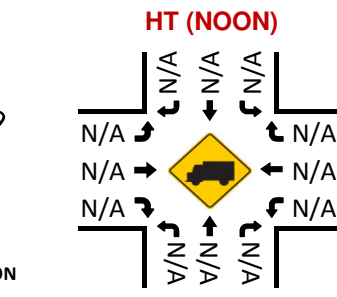
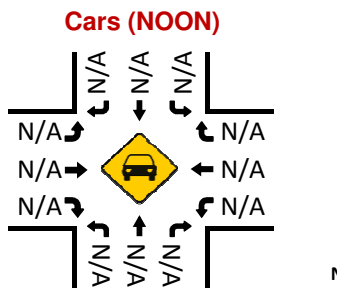
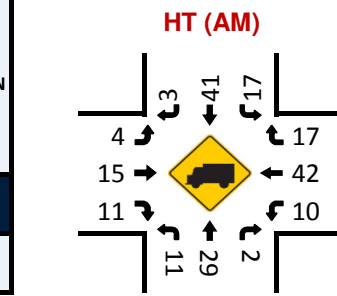
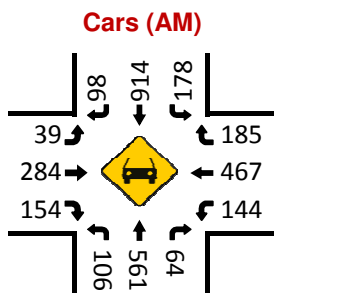
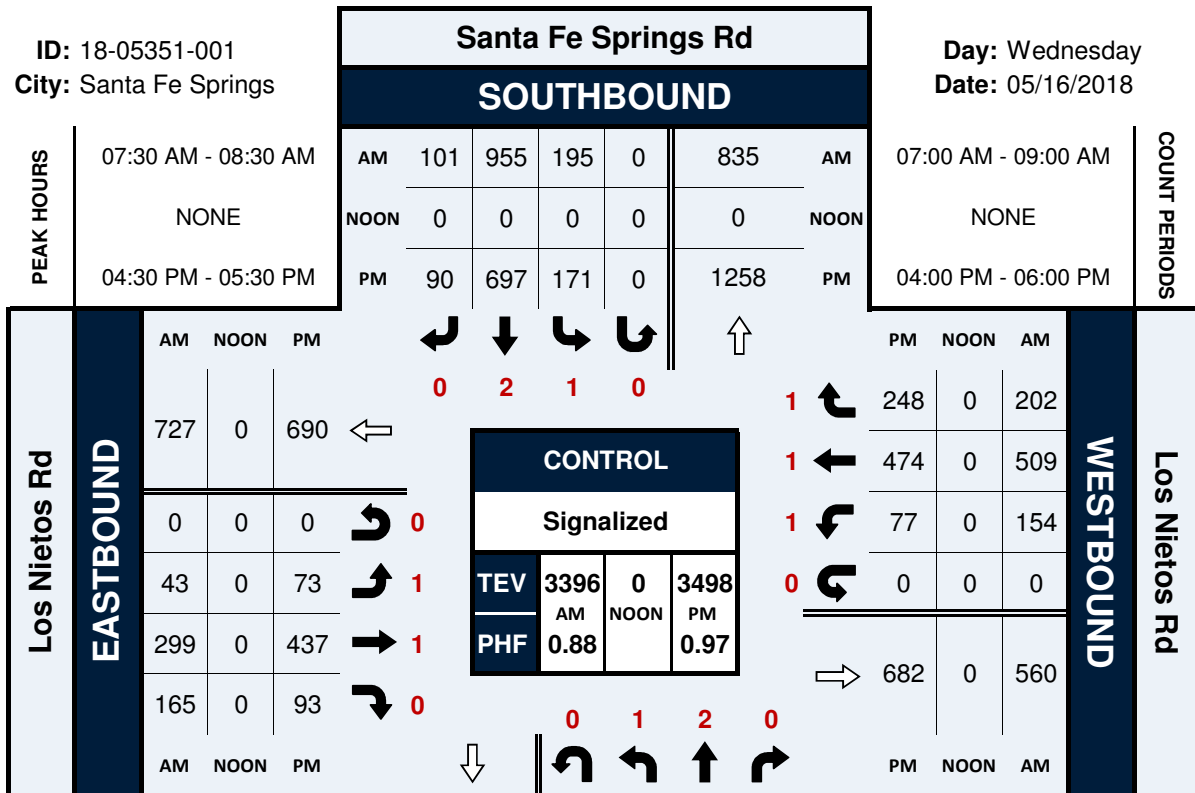


# Santa Fe Springs Rd & Los Nietos Rd

## Peak Hour Turning Movement Count

ID: 18-05351-001  
City: Santa Fe Springs

Day: Wednesday  
Date: 05/16/2018

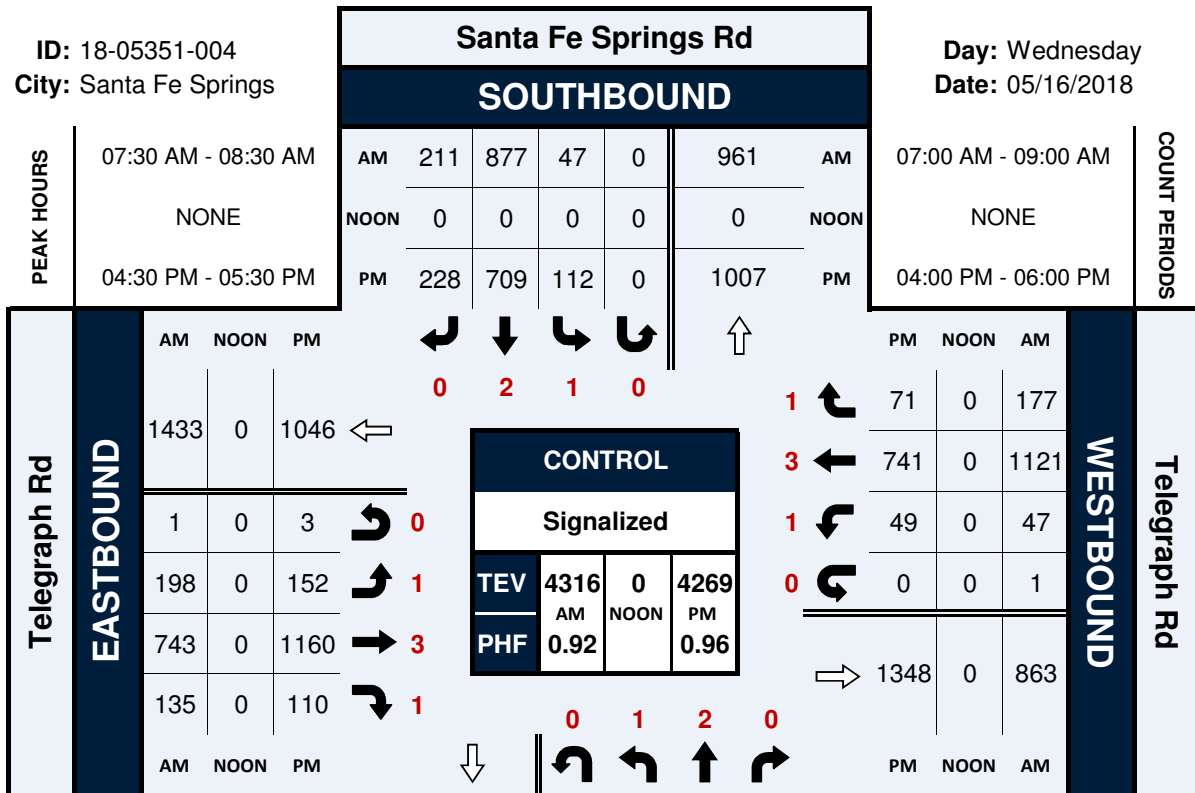


# Santa Fe Springs Rd & Telegraph Rd

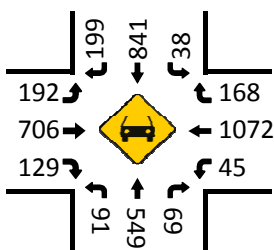
## Peak Hour Turning Movement Count

ID: 18-05351-004  
City: Santa Fe Springs

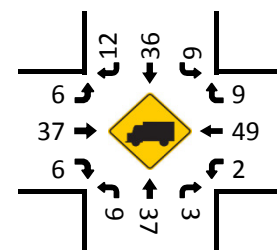
Day: Wednesday  
Date: 05/16/2018



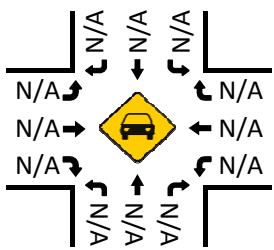
Cars (AM)



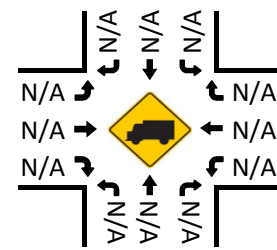
HT (AM)



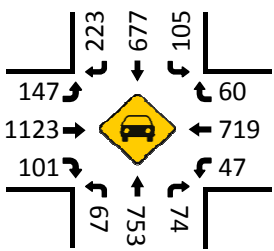
Cars (NOON)



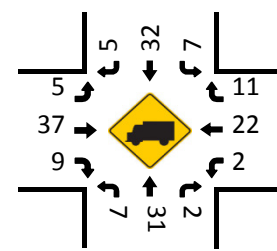
HT (NOON)



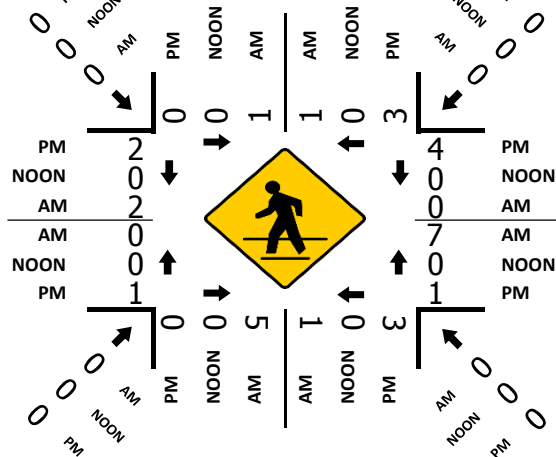
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

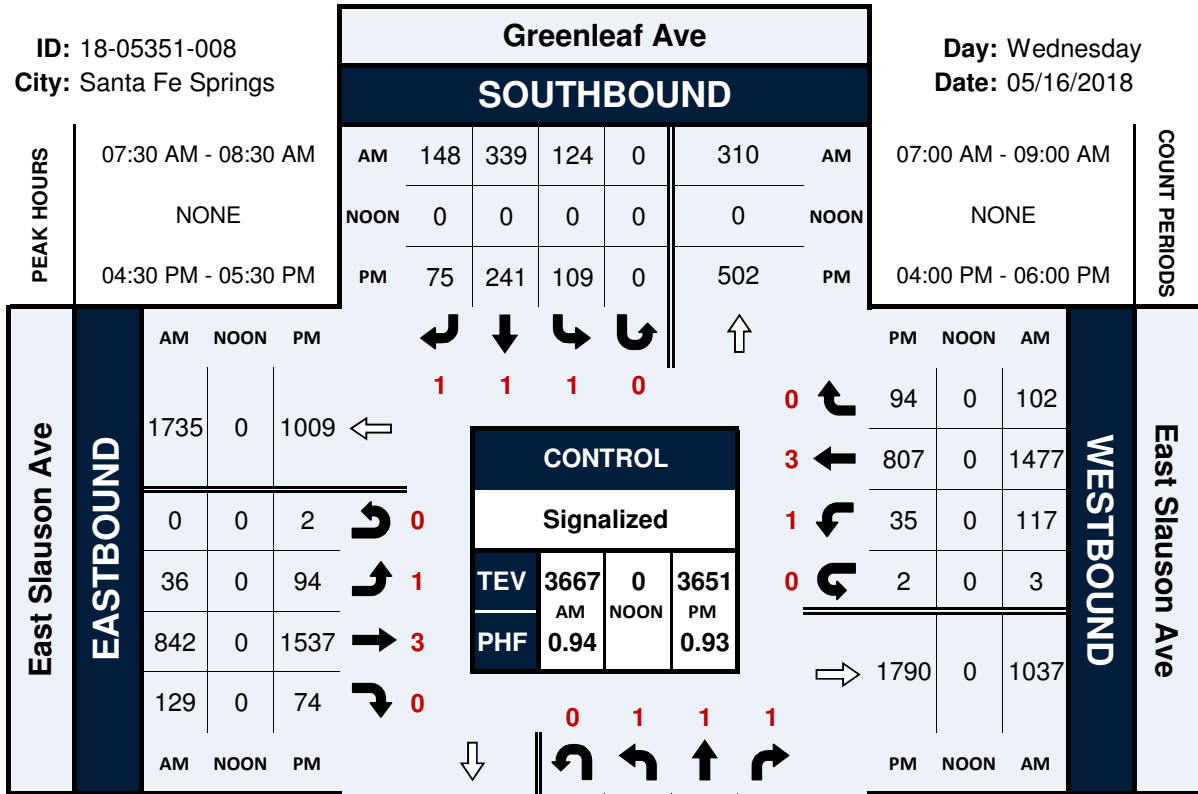


# Greenleaf Ave & East Slauson Ave

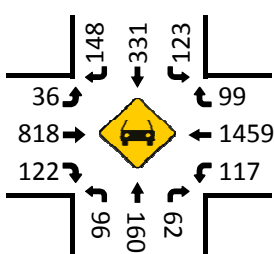
## Peak Hour Turning Movement Count

ID: 18-05351-008  
City: Santa Fe Springs

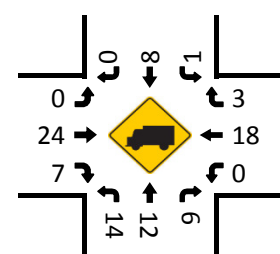
Day: Wednesday  
Date: 05/16/2018



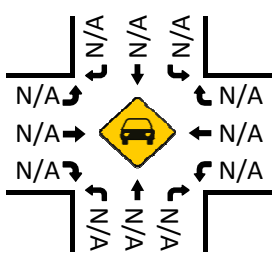
Cars (AM)



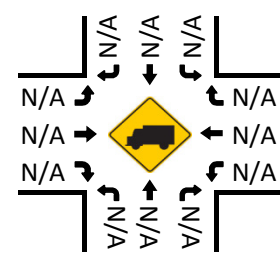
HT (AM)



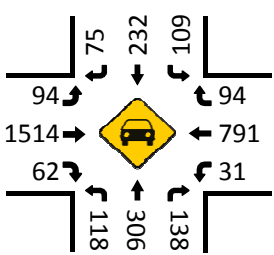
Cars (NOON)



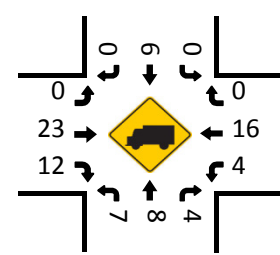
HT (NOON)



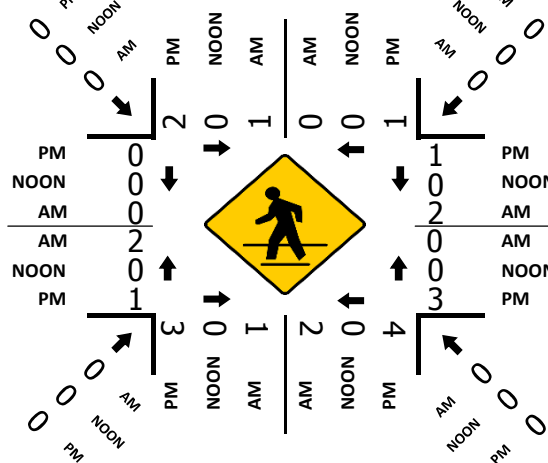
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



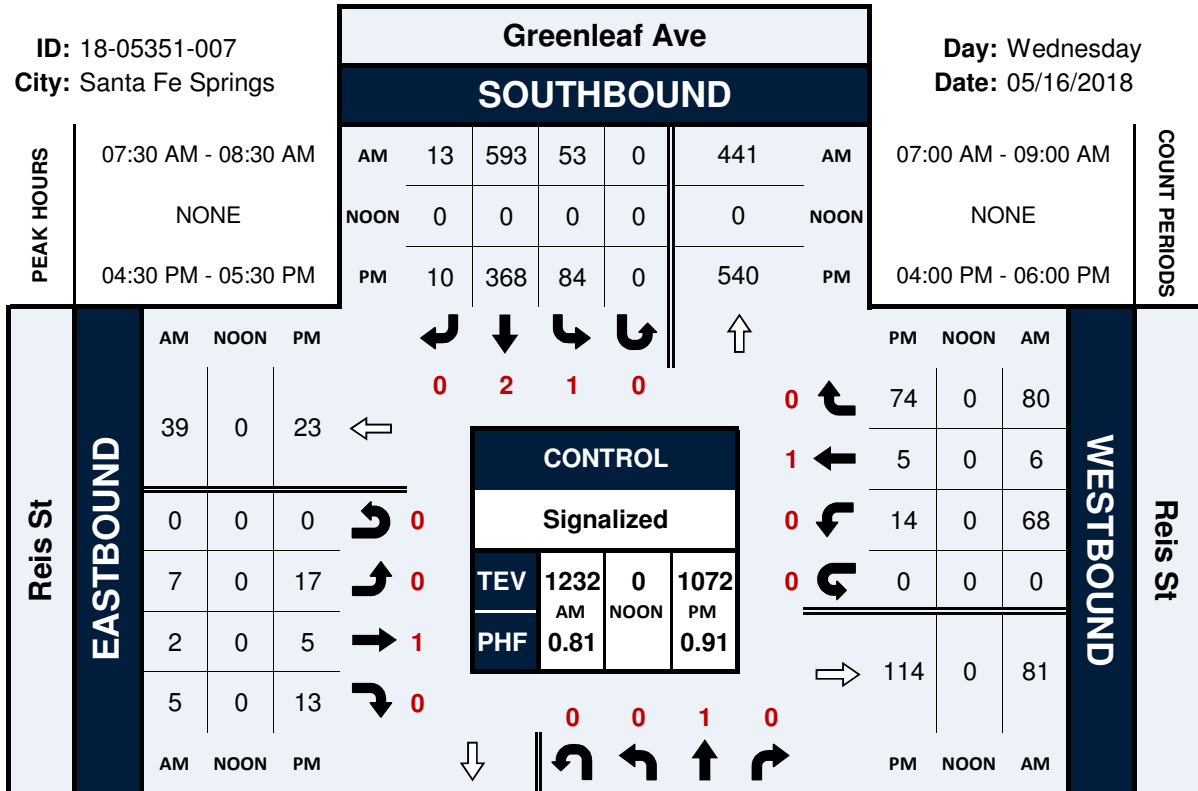


# Greenleaf Ave & Reis St

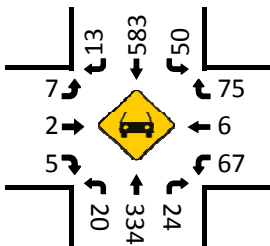
## Peak Hour Turning Movement Count

ID: 18-05351-007  
City: Santa Fe Springs

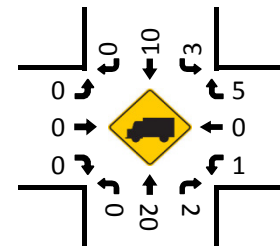
Day: Wednesday  
Date: 05/16/2018



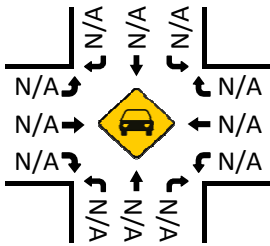
Cars (AM)



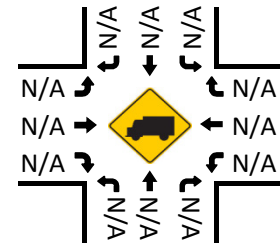
HT (AM)



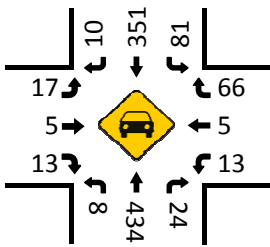
Cars (NOON)



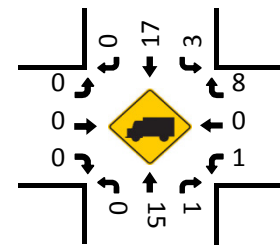
HT (NOON)



Cars (PM)

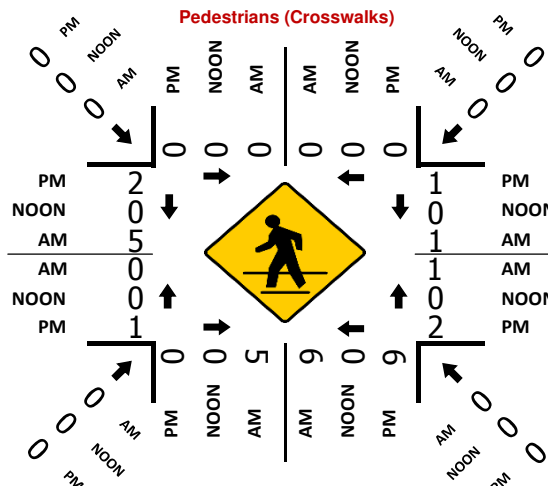


HT (PM)



## NORTHBOUND

## Greenleaf Ave

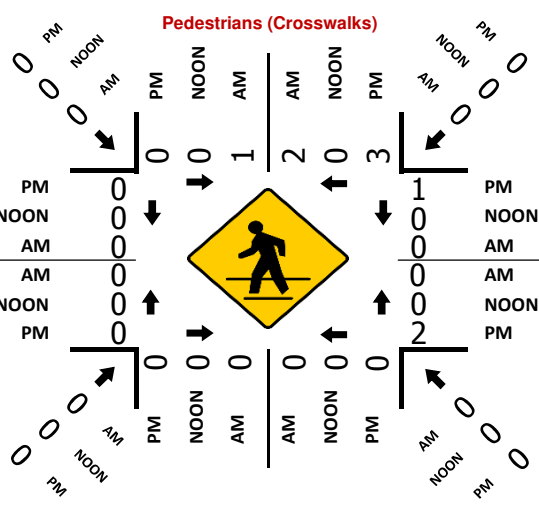
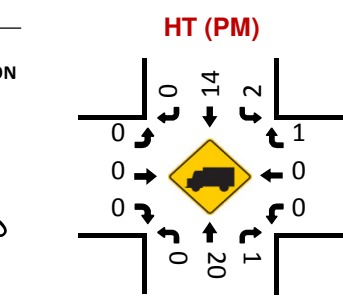
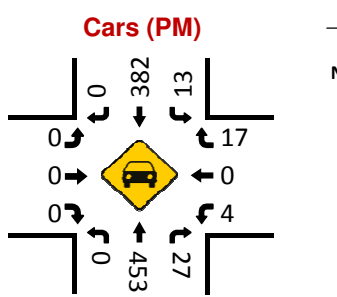
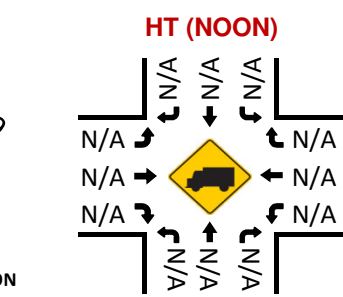
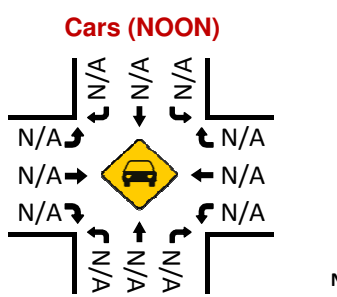
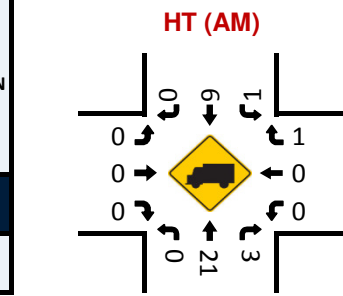
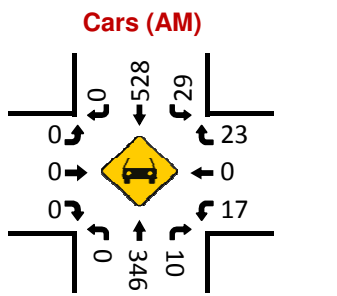
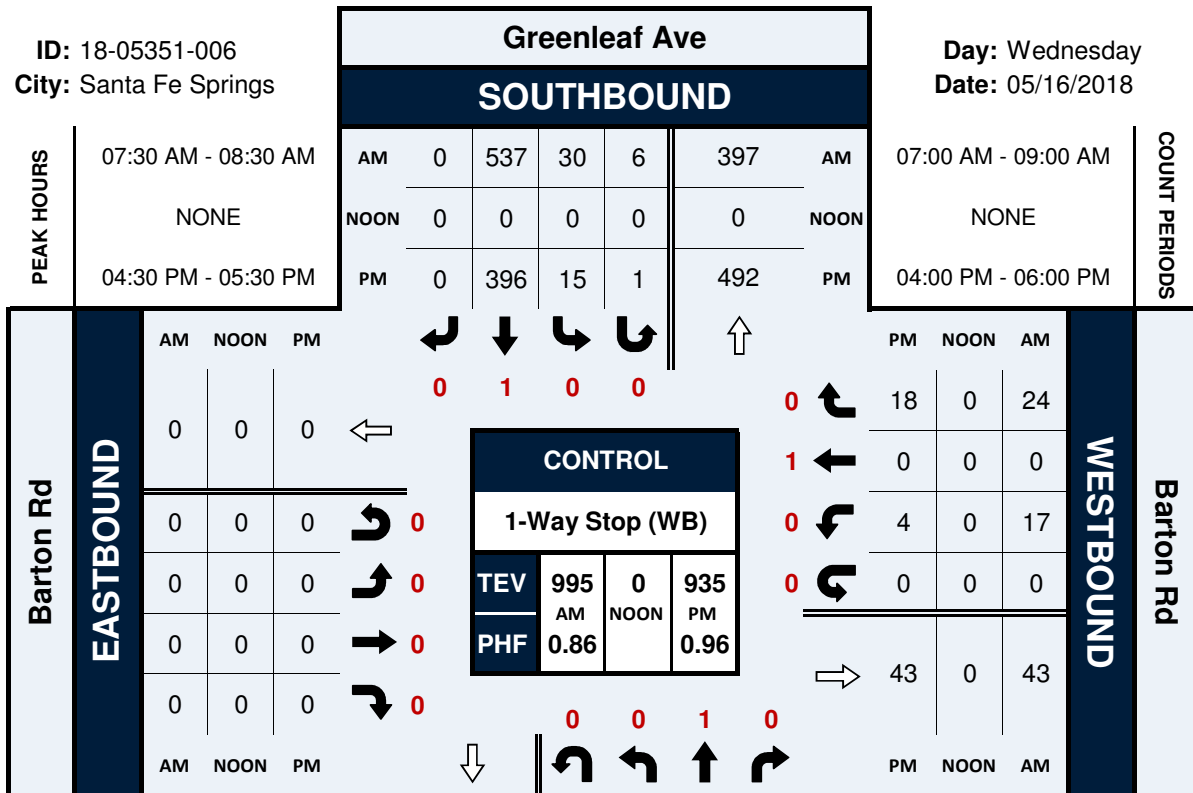


# Greenleaf Ave & Barton Rd

## Peak Hour Turning Movement Count

ID: 18-05351-006  
City: Santa Fe Springs

Day: Wednesday  
Date: 05/16/2018

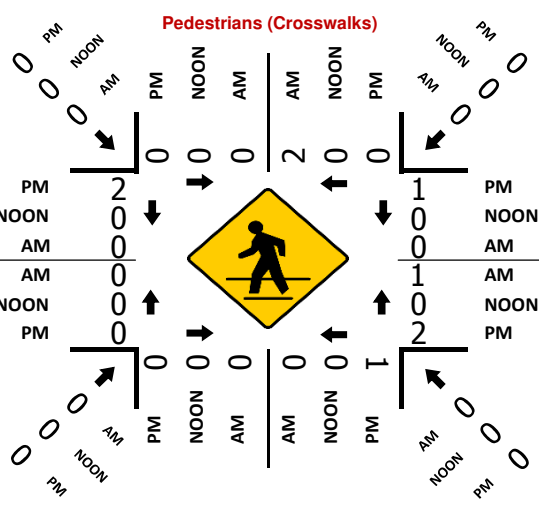
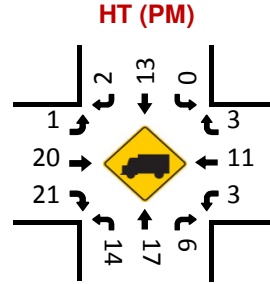
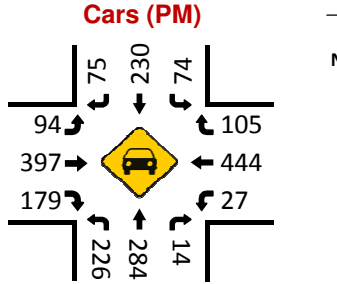
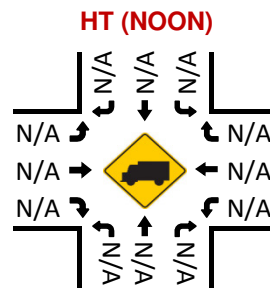
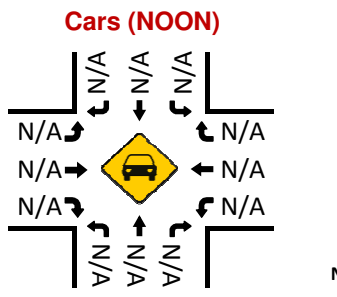
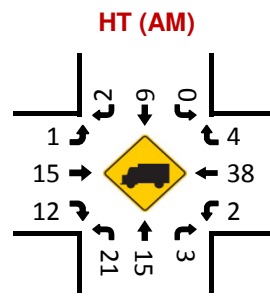
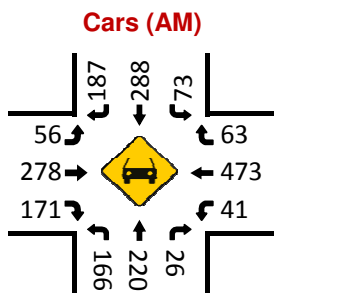
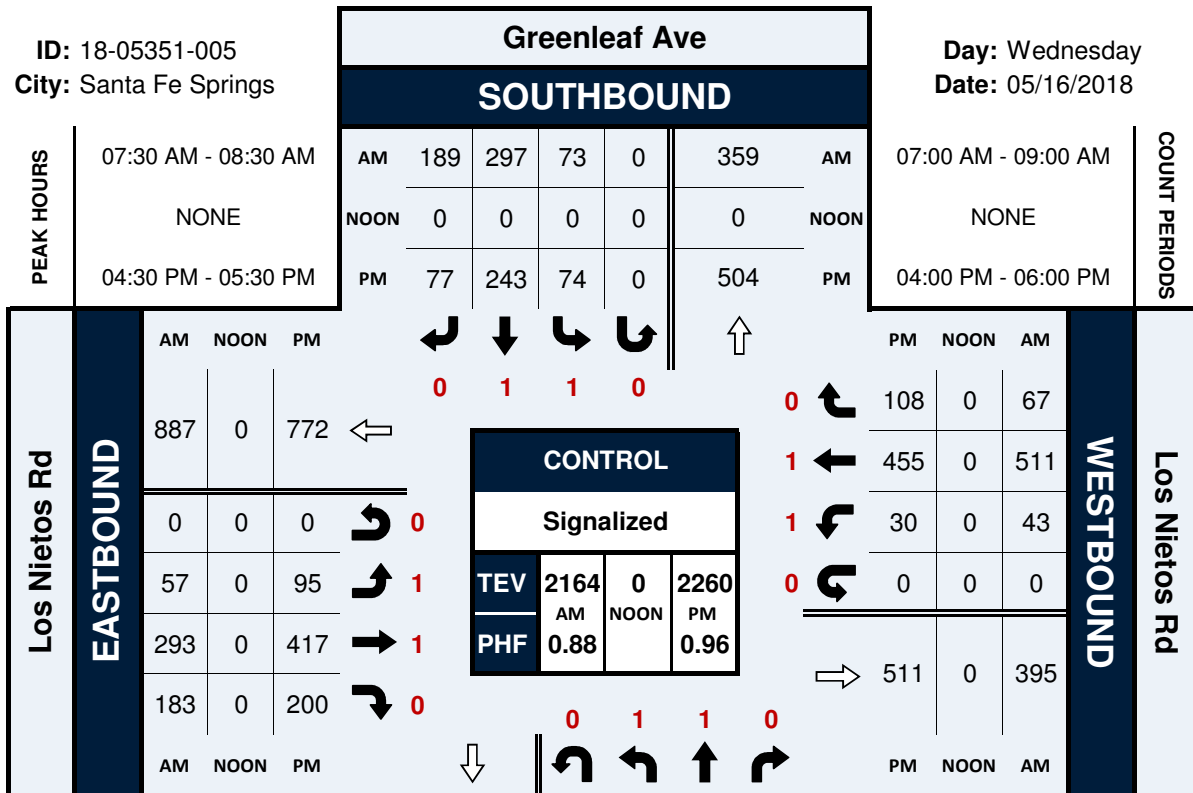


# Greenleaf Ave & Los Nietos Rd

## Peak Hour Turning Movement Count

ID: 18-05351-005  
City: Santa Fe Springs

Day: Wednesday  
Date: 05/16/2018

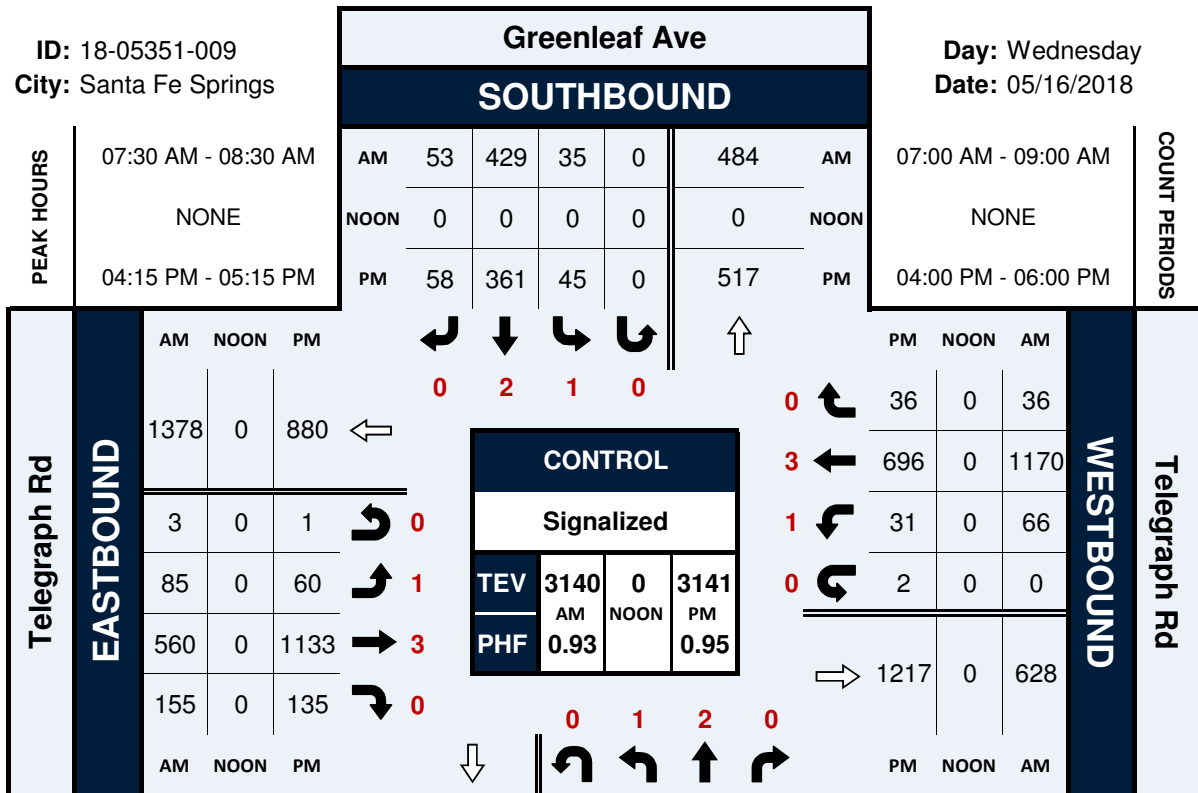


# Greenleaf Ave & Telegraph Rd

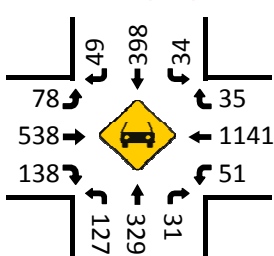
## Peak Hour Turning Movement Count

ID: 18-05351-009  
City: Santa Fe Springs

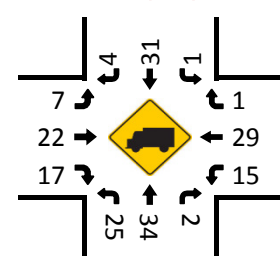
Day: Wednesday  
Date: 05/16/2018



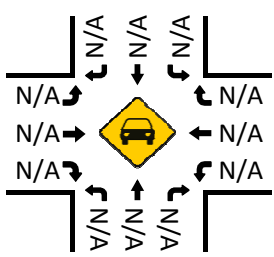
Cars (AM)



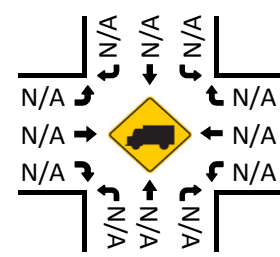
HT (AM)



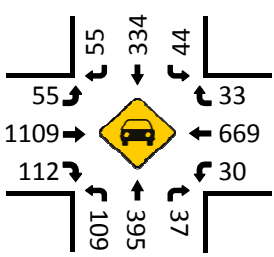
Cars (NOON)



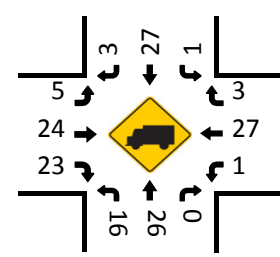
HT (NOON)



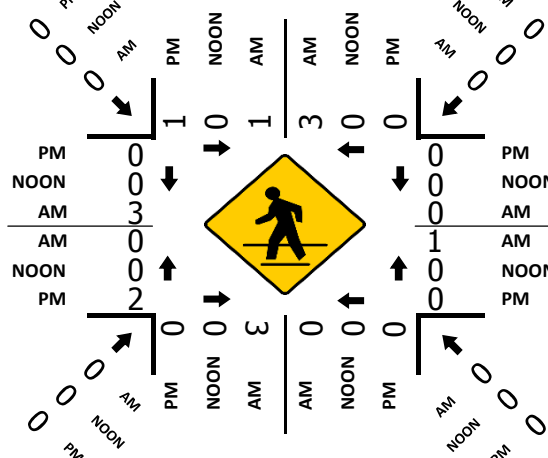
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



























**Appendix B**  
LOS Worksheets – Existing Conditions

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

05/07/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Volume (vph)	48	186	165	76	229	162	60	369	77	127	728	79
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	48	351	0	76	391	0	60	446	0	127	807	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.94	0.85	0.95	0.97	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1805	3363	0	1805	3393	0	1805	3524	0	1805	3564	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.2	12.5	0.0	5.1	13.8	0.0	4.0	15.2	0.0	8.4	27.2	0.0
Adj Reference Time (s)	9.5	17.0	0.0	9.6	18.3	0.0	9.5	19.7	0.0	12.9	31.7	0.0
Permitted Option												
Adj Saturation A (vph)	120	1681		120	1696		120	1762		120	1782	
Reference Time A (s)	47.9	12.5		75.8	13.8		59.8	15.2		126.6	27.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		47.9			75.8			59.8			126.6	
Adj Reference Time (s)		52.4			80.3			64.3			131.1	
Split Option												
Ref Time Combined (s)	3.2	12.5		5.1	13.8		4.0	15.2		8.4	27.2	
Ref Time Seperate (s)	3.2	6.6		5.1	8.1		4.0	12.6		8.4	24.5	
Reference Time (s)	12.5	12.5		13.8	13.8		15.2	15.2		27.2	27.2	
Adj Reference Time (s)	17.0	17.0		18.3	18.3		19.7	19.7		31.7	31.7	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	27.8		41.2									
Permitted Option (s)	80.3		131.1									
Split Option (s)	35.4		51.4									
Minimum (s)	27.8		41.2		69.0							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			57.5%		ICU Level of Service				B			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	78	1361	85	217	1039	200	104	513	174	201	568	85
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	78	1361	85	217	1239	0	104	687	0	201	568	85
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5050	0	1805	3480	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	5.2	31.6	6.3	14.4	29.4	0.0	6.9	23.7	0.0	13.4	18.8	6.3
Adj Reference Time (s)	9.7	36.1	10.8	18.9	33.9	0.0	11.4	28.2	0.0	17.9	23.3	10.8
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1683		120	1740		120	1809	
Reference Time A (s)	77.8	31.6		216.4	29.4		103.7	23.7		200.4	18.8	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		77.8			216.4			103.7			200.4	
Adj Reference Time (s)		82.3			220.9			108.2			204.9	
Split Option												
Ref Time Combined (s)	5.2	31.6		14.4	29.4		6.9	23.7		13.4	18.8	
Ref Time Seperate (s)	5.2	31.6		14.4	24.7		6.9	17.7		13.4	18.8	
Reference Time (s)	31.6	31.6		29.4	29.4		23.7	23.7		18.8	18.8	
Adj Reference Time (s)	36.1	36.1		33.9	33.9		28.2	28.2		23.3	23.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	55.0		46.1									
Permitted Option (s)	220.9		204.9									
Split Option (s)	70.0		51.5									
Minimum (s)	55.0		46.1		101.0							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	10.8		10.8									
Cross Thru Ref Time (s)	23.3		33.9									
Oncoming Left Ref Time (s)	18.9		11.4									
Combined (s)	53.1		56.2									
Intersection Summary												
Intersection Capacity Utilization			84.2%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑	↗
Volume (vph)	104	867	142	163	1461	131	69	353	44	111	739	210
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	104	1009	0	163	1592	0	69	397	0	111	739	210
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5066	0	1805	5112	0	1805	3557	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.9	23.9	0.0	10.8	37.4	0.0	4.6	13.4	0.0	7.4	24.5	15.6
Adj Reference Time (s)	10.9	27.9	0.0	14.8	41.4	0.0	9.0	17.4	0.0	11.4	28.5	19.6
Permitted Option												
Adj Saturation A (vph)	120	1689		120	1704		120	1779		120	1809	
Reference Time A (s)	103.7	23.9		162.5	37.4		68.8	13.4		110.7	24.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		103.7			162.5			68.8			110.7	
Adj Reference Time (s)		107.7			166.5			72.8			114.7	
Split Option												
Ref Time Combined (s)	6.9	23.9		10.8	37.4		4.6	13.4		7.4	24.5	
Ref Time Seperate (s)	6.9	20.5		10.8	34.3		4.6	11.9		7.4	24.5	
Reference Time (s)	23.9	23.9		37.4	37.4		13.4	13.4		24.5	24.5	
Adj Reference Time (s)	27.9	27.9		41.4	41.4		17.4	17.4		28.5	28.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	52.3		37.5									
Permitted Option (s)	166.5		114.7									
Split Option (s)	69.3		45.9									
Minimum (s)	52.3		37.5		89.8							
Right Turns												
	SBR											
Adj Reference Time (s)	19.6											
Cross Thru Ref Time (s)	41.4											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	70.0											
Intersection Summary												
Intersection Capacity Utilization			74.8%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

05/07/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	385	282	540	935	27
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	4	385	282	540	962	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3602	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	No			Yes		
Reference Time (s)	28.6		18.7	17.9	32.0	0.0
Adj Reference Time (s)	32.6		22.7	21.9	36.0	0.0
Permitted Option						
Adj Saturation A (vph)	120	120		1809	1801	
Reference Time A (s)	4.0	281.2		17.9	32.0	
Adj Saturation B (vph)	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA	
Reference Time (s)				281.2	32.0	
Adj Reference Time (s)				285.2	36.0	
Split Option						
Ref Time Combined (s)	0.3	18.7		17.9	32.0	
Ref Time Seperate (s)	0.3	18.7		17.9	31.1	
Reference Time (s)	0.3	18.7		18.7	32.0	
Adj Reference Time (s)	8.0	22.7		22.7	36.0	
Summary						
	EB	NB SB		Combined		
Protected Option (s)	NA	58.8				
Permitted Option (s)	Err	285.2				
Split Option (s)	8.0	58.8				
Minimum (s)	8.0	58.8		66.8		
Right Turns						
	EBR					
Adj Reference Time (s)	32.6					
Cross Thru Ref Time (s)	36.0					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	68.7					

### Intersection Summary

Intersection Capacity Utilization 57.2% ICU Level of Service B  
 Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↗		↖	↖	↗	↖	↖↗		↖	↖↗		
Volume (vph)	43	299	165	154	509	202	117	590	66	195	955	101	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	43	464	0	154	509	202	117	656	0	195	1056	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.99	0.85	
Saturated Flow (vph)	1805	1799	0	1805	1900	1615	1805	3563	0	1805	3566	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	2.9	31.0	0.0	10.2	32.1	15.0	7.8	22.1	0.0	13.0	35.5	0.0	
Adj Reference Time (s)	9.0	35.0	0.0	14.2	36.1	19.0	11.8	26.1	0.0	17.0	39.5	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1799		120	1900		120	1782		120	1783		
Reference Time A (s)	42.9	31.0		153.6	32.1		116.7	22.1		194.5	35.5		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		42.9			153.6			116.7			194.5		
Adj Reference Time (s)		46.9			157.6			120.7			198.5		
Split Option													
Ref Time Combined (s)	2.9	31.0		10.2	32.1		7.8	22.1		13.0	35.5		
Ref Time Seperate (s)	2.9	19.9		10.2	32.1		7.8	19.9		13.0	32.1		
Reference Time (s)	31.0	31.0		32.1	32.1		22.1	22.1		35.5	35.5		
Adj Reference Time (s)	35.0	35.0		36.1	36.1		26.1	26.1		39.5	39.5		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	49.2		51.3										
Permitted Option (s)	157.6		198.5										
Split Option (s)	71.1		65.6										
Minimum (s)	49.2		51.3		100.5								
Right Turns													
	WBR												
Adj Reference Time (s)	19.0												
Cross Thru Ref Time (s)	26.1												
Oncoming Left Ref Time (s)	9.0												
Combined (s)	54.1												
Intersection Summary													
Intersection Capacity Utilization			83.8%		ICU Level of Service						E		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	199	743	135	48	1121	177	100	586	72	47	877	211
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	199	743	135	48	1121	177	100	658	0	47	1088	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3558	0	1805	3512	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	13.2	17.2	10.0	3.2	26.0	13.2	6.6	22.2	0.0	3.1	37.2	0.0
Adj Reference Time (s)	17.2	21.2	14.0	9.0	30.0	17.2	10.6	26.2	0.0	9.0	41.2	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1779		120	1756	
Reference Time A (s)	198.4	17.2		47.9	26.0		99.7	22.2		46.9	37.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		198.4			47.9			99.7			46.9	
Adj Reference Time (s)		202.4			51.9			103.7			50.9	
Split Option												
Ref Time Combined (s)	13.2	17.2		3.2	26.0		6.6	22.2		3.1	37.2	
Ref Time Seperate (s)	13.2	17.2		3.2	26.0		6.6	19.8		3.1	30.0	
Reference Time (s)	17.2	17.2		26.0	26.0		22.2	22.2		37.2	37.2	
Adj Reference Time (s)	21.2	21.2		30.0	30.0		26.2	26.2		41.2	41.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.2		51.8									
Permitted Option (s)	202.4		103.7									
Split Option (s)	51.2		67.4									
Minimum (s)	47.2		51.8		99.0							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	14.0		17.2									
Cross Thru Ref Time (s)	41.2		26.2									
Oncoming Left Ref Time (s)	9.0		17.2									
Combined (s)	64.2		60.6									
Intersection Summary												
Intersection Capacity Utilization			82.5%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
7: Greenleaf Avenue & Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑	↗	↗	↑	↗
Volume (vph)	36	842	129	120	1477	102	110	172	68	124	339	148
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	36	971	0	120	1579	0	110	172	68	124	339	148
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5072	0	1805	5125	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	2.4	23.0	0.0	8.0	37.0	0.0	7.3	10.9	5.1	8.2	21.4	11.0
Adj Reference Time (s)	9.0	27.0	0.0	12.0	41.0	0.0	11.3	14.9	9.1	12.2	25.4	15.0
Permitted Option												
Adj Saturation A (vph)	120	1691		120	1708		120	1900		120	1900	
Reference Time A (s)	35.9	23.0		119.7	37.0		109.7	10.9		123.7	21.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		35.9			119.7			109.7			123.7	
Adj Reference Time (s)		39.9			123.7			113.7			127.7	
Split Option												
Ref Time Combined (s)	2.4	23.0		8.0	37.0		7.3	10.9		8.2	21.4	
Ref Time Seperate (s)	2.4	19.9		8.0	34.6		7.3	10.9		8.2	21.4	
Reference Time (s)	23.0	23.0		37.0	37.0		10.9	10.9		21.4	21.4	
Adj Reference Time (s)	27.0	27.0		41.0	41.0		14.9	14.9		25.4	25.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.0		36.7									
Permitted Option (s)	123.7		127.7									
Split Option (s)	67.9		40.3									
Minimum (s)	50.0		36.7		86.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	9.1		15.0									
Cross Thru Ref Time (s)	27.0		41.0									
Oncoming Left Ref Time (s)	12.2		11.3									
Combined (s)	48.3		67.3									
Intersection Summary												
Intersection Capacity Utilization			72.2%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	7	2	5	68	6	80	25	354	26	53	593	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	14	0	0	154	0	25	380	0	53	606	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.90	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1753	0	0	1713	0	1805	1881	0	1805	1894	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	1.7	24.2	0.0	3.5	38.4	0.0
Adj Reference Time (s)			0.0			0.0	9.0	28.2	0.0	9.0	42.4	0.0
Permitted Option												
Adj Saturation A (vph)	0	1309		0	1429		120	1881		120	1894	
Reference Time A (s)	0.0	1.3		0.0	12.9		24.9	24.2		52.9	38.4	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	8.5	9.0		12.5	18.8		NA	NA		NA	NA	
Reference Time (s)		1.3			12.9			24.9			52.9	
Adj Reference Time (s)		9.0			16.9			28.9			56.9	
Split Option												
Ref Time Combined (s)	0.0	1.0		0.0	10.8		1.7	24.2		3.5	38.4	
Ref Time Seperate (s)	0.5	0.1		4.5	0.4		1.7	22.6		3.5	37.6	
Reference Time (s)	1.0	1.0		10.8	10.8		24.2	24.2		38.4	38.4	
Adj Reference Time (s)	9.0	9.0		14.8	14.8		28.2	28.2		42.4	42.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		51.4									
Permitted Option (s)	16.9		56.9									
Split Option (s)	23.8		70.6									
Minimum (s)	16.9		51.4		68.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			56.9%		ICU Level of Service		B					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

05/07/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	24	368	13	36	537
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	41	0	381	0	36	537
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.89	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1697	0	1890	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	24.2	0.0	2.4	33.9
Adj Reference Time (s)		0.0	28.2	0.0	8.0	37.9
Permitted Option						
Adj Saturation A (vph)	113		1890		120	1900
Reference Time A (s)	43.5		24.2		35.9	33.9
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			24.2			35.9
Adj Reference Time (s)			28.2			39.9
Split Option						
Ref Time Combined (s)	2.9		24.2		2.4	33.9
Ref Time Seperate (s)	1.2		23.4		2.4	33.9
Reference Time (s)	2.9		24.2		33.9	33.9
Adj Reference Time (s)	8.0		28.2		37.9	37.9
Summary						
	WB		NB SB		Combined	
Protected Option (s)	NA		37.9			
Permitted Option (s)	Err		39.9			
Split Option (s)	8.0		66.1			
Minimum (s)	8.0		37.9		45.9	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			38.3%		ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗		
Volume (vph)	57	293	183	43	511	67	187	235	29	73	297	189	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	57	476	0	43	578	0	187	264	0	73	486	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	0.94	0.85	
Saturated Flow (vph)	1805	1790	0	1805	1867	0	1805	1869	0	1805	1789	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	3.8	31.9	0.0	2.9	37.2	0.0	12.4	17.0	0.0	4.9	32.6	0.0	
Adj Reference Time (s)	9.0	35.9	0.0	9.0	41.2	0.0	16.4	21.0	0.0	9.0	36.6	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1790		120	1867		120	1869		120	1789		
Reference Time A (s)	56.8	31.9		42.9	37.2		186.5	17.0		72.8	32.6		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		56.8			42.9			186.5			72.8		
Adj Reference Time (s)		60.8			46.9			190.5			76.8		
Split Option													
Ref Time Combined (s)	3.8	31.9		2.9	37.2		12.4	17.0		4.9	32.6		
Ref Time Seperate (s)	3.8	19.6		2.9	32.8		12.4	15.1		4.9	19.9		
Reference Time (s)	31.9	31.9		37.2	37.2		17.0	17.0		32.6	32.6		
Adj Reference Time (s)	35.9	35.9		41.2	41.2		21.0	21.0		36.6	36.6		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	50.2		53.0										
Permitted Option (s)	60.8		190.5										
Split Option (s)	77.1		57.5										
Minimum (s)	50.2		53.0		103.2								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			86.0%		ICU Level of Service						E		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑		
Volume (vph)	88	560	155	66	1170	36	152	363	33	35	429	53	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	88	715	0	66	1206	0	152	396	0	35	482	0	
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.98	0.85	
Saturated Flow (vph)	1805	5007	0	1805	5152	0	1805	3572	0	1805	3558	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	5.9	17.1	0.0	4.4	28.1	0.0	10.1	13.3	0.0	2.3	16.3	0.0	
Adj Reference Time (s)	9.9	21.1	0.0	9.0	32.1	0.0	14.1	17.3	0.0	9.0	20.3	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1669		120	1717		120	1786		120	1779		
Reference Time A (s)	87.8	17.1		65.8	28.1		151.6	13.3		34.9	16.3		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		87.8			65.8			151.6			34.9		
Adj Reference Time (s)		91.8			69.8			155.6			38.9		
Split Option													
Ref Time Combined (s)	5.9	17.1		4.4	28.1		10.1	13.3		2.3	16.3		
Ref Time Seperate (s)	5.9	13.4		4.4	27.2		10.1	12.2		2.3	14.5		
Reference Time (s)	17.1	17.1		28.1	28.1		13.3	13.3		16.3	16.3		
Adj Reference Time (s)	21.1	21.1		32.1	32.1		17.3	17.3		20.3	20.3		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	41.9		34.4										
Permitted Option (s)	91.8		155.6										
Split Option (s)	53.2		37.6										
Minimum (s)	41.9		34.4		76.3								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			63.6%		ICU Level of Service						B		
Reference Times and Phasing Options do not represent an optimized timing plan.													



Intersection Capacity Utilization  
1: Norwalk Boulevard & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Volume (vph)	28	201	101	129	415	218	121	742	108	110	563	74
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	28	302	0	129	633	0	121	850	0	110	637	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.98	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	3436	0	1805	3431	0	1805	3549	0	1805	3555	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	1.9	10.5	0.0	8.6	22.1	0.0	8.0	28.7	0.0	7.3	21.5	0.0
Adj Reference Time (s)	9.5	15.0	0.0	13.1	26.6	0.0	12.5	33.2	0.0	11.8	26.0	0.0
Permitted Option												
Adj Saturation A (vph)	120	1718		120	1715		120	1774		120	1777	
Reference Time A (s)	27.9	10.5		128.6	22.1		120.7	28.7		109.7	21.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		27.9			128.6			120.7			109.7	
Adj Reference Time (s)		32.4			133.1			125.2			114.2	
Split Option												
Ref Time Combined (s)	1.9	10.5		8.6	22.1		8.0	28.7		7.3	21.5	
Ref Time Seperate (s)	1.9	7.0		8.6	14.5		8.0	25.1		7.3	19.0	
Reference Time (s)	10.5	10.5		22.1	22.1		28.7	28.7		21.5	21.5	
Adj Reference Time (s)	15.0	15.0		26.6	26.6		33.2	33.2		26.0	26.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.1		45.1									
Permitted Option (s)	133.1		125.2									
Split Option (s)	41.7		59.2									
Minimum (s)	36.1		45.1		81.2							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			67.7%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	95	1204	86	120	1197	155	159	702	280	175	482	101
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	95	1204	86	120	1352	0	159	982	0	175	482	101
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5087	0	1805	3463	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.3	27.9	6.4	8.0	31.9	0.0	10.6	34.0	0.0	11.6	16.0	7.5
Adj Reference Time (s)	10.8	32.4	10.9	12.5	36.4	0.0	15.1	38.5	0.0	16.1	20.5	12.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1696		120	1731		120	1809	
Reference Time A (s)	94.7	27.9		119.7	31.9		158.6	34.0		174.5	16.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		94.7			119.7			158.6			174.5	
Adj Reference Time (s)		99.2			124.2			163.1			179.0	
Split Option												
Ref Time Combined (s)	6.3	27.9		8.0	31.9		10.6	34.0		11.6	16.0	
Ref Time Seperate (s)	6.3	27.9		8.0	28.2		10.6	24.3		11.6	16.0	
Reference Time (s)	27.9	27.9		31.9	31.9		34.0	34.0		16.0	16.0	
Adj Reference Time (s)	32.4	32.4		36.4	36.4		38.5	38.5		20.5	20.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.2		54.7									
Permitted Option (s)	124.2		179.0									
Split Option (s)	68.8		59.0									
Minimum (s)	47.2		54.7		101.9							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	10.9		12.0									
Cross Thru Ref Time (s)	20.5		36.4									
Oncoming Left Ref Time (s)	12.5		15.1									
Combined (s)	43.9		63.5									
Intersection Summary												
Intersection Capacity Utilization			84.9%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕↕↕		↗	↕↕↕		↗	↕↕		↗	↕↕	↗
Volume (vph)	157	1407	94	99	779	124	112	692	166	112	494	128
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	157	1501	0	99	903	0	112	858	0	112	494	128
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	0.97	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5127	0	1805	5069	0	1805	3513	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	10.4	35.1	0.0	6.6	21.4	0.0	7.4	29.3	0.0	7.4	16.4	9.5
Adj Reference Time (s)	14.4	39.1	0.0	10.6	25.4	0.0	11.4	33.3	0.0	11.4	20.4	13.5
Permitted Option												
Adj Saturation A (vph)	120	1709		120	1690		120	1756		120	1809	
Reference Time A (s)	156.6	35.1		98.7	21.4		111.7	29.3		111.7	16.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		156.6			98.7			111.7			111.7	
Adj Reference Time (s)		160.6			102.7			115.7			115.7	
Split Option												
Ref Time Combined (s)	10.4	35.1		6.6	21.4		7.4	29.3		7.4	16.4	
Ref Time Seperate (s)	10.4	32.9		6.6	18.4		7.4	23.6		7.4	16.4	
Reference Time (s)	35.1	35.1		21.4	21.4		29.3	29.3		16.4	16.4	
Adj Reference Time (s)	39.1	39.1		25.4	25.4		33.3	33.3		20.4	20.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	49.7		44.8									
Permitted Option (s)	160.6		115.7									
Split Option (s)	64.5		53.7									
Minimum (s)	49.7		44.8		94.5							
Right Turns												
	SBR											
Adj Reference Time (s)	13.5											
Cross Thru Ref Time (s)	25.4											
Oncoming Left Ref Time (s)	11.4											
Combined (s)	50.3											
Intersection Summary												
Intersection Capacity Utilization			78.7%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

05/07/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	309	380	902	642	17
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	19	309	380	902	659	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3604	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)	23.0		25.3	29.9	21.9	0.0
Adj Reference Time (s)	27.0		29.3	33.9	25.9	0.0
Permitted Option						
Adj Saturation A (vph)	120	120		1809	1802	
Reference Time A (s)	18.9	378.9		29.9	21.9	
Adj Saturation B (vph)	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA	
Reference Time (s)				378.9	21.9	
Adj Reference Time (s)				382.9	25.9	
Split Option						
Ref Time Combined (s)	1.3	25.3		29.9	21.9	
Ref Time Seperate (s)	1.3	25.3		29.9	21.4	
Reference Time (s)	1.3	29.9		29.9	21.9	
Adj Reference Time (s)	8.0	33.9		33.9	25.9	
Summary						
	EB	NB SB		Combined		
Protected Option (s)	NA	55.2				
Permitted Option (s)	Err	382.9				
Split Option (s)	8.0	59.9				
Minimum (s)	8.0	55.2		63.2		
Right Turns						
	EBR					
Adj Reference Time (s)	27.0					
Cross Thru Ref Time (s)	25.9					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	52.9					

### Intersection Summary

Intersection Capacity Utilization 52.7% ICU Level of Service A  
 Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	437	93	77	474	248	127	937	74	171	697	90
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	73	530	0	77	474	248	127	1011	0	171	787	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	1850	0	1805	1900	1615	1805	3578	0	1805	3556	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	4.9	34.4	0.0	5.1	29.9	18.4	8.4	33.9	0.0	11.4	26.6	0.0
Adj Reference Time (s)	9.0	38.4	0.0	9.1	33.9	22.4	12.4	37.9	0.0	15.4	30.6	0.0
Permitted Option												
Adj Saturation A (vph)	120	1850		120	1900		120	1789		120	1778	
Reference Time A (s)	72.8	34.4		76.8	29.9		126.6	33.9		170.5	26.6	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		72.8			76.8			126.6			170.5	
Adj Reference Time (s)		76.8			80.8			130.6			174.5	
Split Option												
Ref Time Combined (s)	4.9	34.4		5.1	29.9		8.4	33.9		11.4	26.6	
Ref Time Seperate (s)	4.9	28.3		5.1	29.9		8.4	31.4		11.4	23.5	
Reference Time (s)	34.4	34.4		29.9	29.9		33.9	33.9		26.6	26.6	
Adj Reference Time (s)	38.4	38.4		33.9	33.9		37.9	37.9		30.6	30.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.5		53.3									
Permitted Option (s)	80.8		174.5									
Split Option (s)	72.3		68.5									
Minimum (s)	47.5		53.3		100.8							
Right Turns												
	WBR											
Adj Reference Time (s)	22.4											
Cross Thru Ref Time (s)	37.9											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	69.3											
Intersection Summary												
Intersection Capacity Utilization	84.0%		ICU Level of Service		E							
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑↑	↵	↵	↑↑↑	↵	↵	↑↑		↵	↑↑	
Volume (vph)	155	1160	110	49	741	71	74	784	76	112	709	228
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	155	1160	110	49	741	71	74	860	0	112	937	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3570	0	1805	3486	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	10.3	26.9	8.2	3.3	17.2	5.3	4.9	28.9	0.0	7.4	32.3	0.0
Adj Reference Time (s)	14.3	30.9	12.2	9.0	21.2	9.3	9.0	32.9	0.0	11.4	36.3	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1785		120	1743	
Reference Time A (s)	154.6	26.9		48.9	17.2		73.8	28.9		111.7	32.3	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		154.6			48.9			73.8			111.7	
Adj Reference Time (s)		158.6			52.9			77.8			115.7	
Split Option												
Ref Time Combined (s)	10.3	26.9		3.3	17.2		4.9	28.9		7.4	32.3	
Ref Time Seperate (s)	10.3	26.9		3.3	17.2		4.9	26.4		7.4	24.4	
Reference Time (s)	26.9	26.9		17.2	17.2		28.9	28.9		32.3	32.3	
Adj Reference Time (s)	30.9	30.9		21.2	21.2		32.9	32.9		36.3	36.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	39.9		45.3									
Permitted Option (s)	158.6		115.7									
Split Option (s)	52.1		69.2									
Minimum (s)	39.9		45.3		85.2							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	12.2		9.3									
Cross Thru Ref Time (s)	36.3		32.9									
Oncoming Left Ref Time (s)	9.0		14.3									
Combined (s)	57.4		56.5									
Intersection Summary												
Intersection Capacity Utilization			71.0%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 7: Greenleaf Avenue & Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕↕↕		↖	↕↕↕		↖	↕	↗	↖	↕	↗
Volume (vph)	96	1537	74	37	807	94	125	314	142	109	241	75
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	96	1611	0	37	901	0	125	314	142	109	241	75
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5140	0	1805	5095	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00				0.00
Protected Option Allowed		Yes			Yes			Yes				Yes
Reference Time (s)	6.4	37.6	0.0	2.5	21.2	0.0	8.3	19.8	10.6	7.2	15.2	5.6
Adj Reference Time (s)	10.4	41.6	0.0	9.0	25.2	0.0	12.3	23.8	14.6	11.2	19.2	9.6
Permitted Option												
Adj Saturation A (vph)	120	1713		120	1698		120	1900		120	1900	
Reference Time A (s)	95.7	37.6		36.9	21.2		124.7	19.8		108.7	15.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		95.7			36.9			124.7			108.7	
Adj Reference Time (s)		99.7			40.9			128.7			112.7	
Split Option												
Ref Time Combined (s)	6.4	37.6		2.5	21.2		8.3	19.8		7.2	15.2	
Ref Time Seperate (s)	6.4	35.9		2.5	19.0		8.3	19.8		7.2	15.2	
Reference Time (s)	37.6	37.6		21.2	21.2		19.8	19.8		15.2	15.2	
Adj Reference Time (s)	41.6	41.6		25.2	25.2		23.8	23.8		19.2	19.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.6		35.1									
Permitted Option (s)	99.7		128.7									
Split Option (s)	66.8		43.1									
Minimum (s)	50.6		35.1		85.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.6		9.6									
Cross Thru Ref Time (s)	41.6		25.2									
Oncoming Left Ref Time (s)	11.2		12.3									
Combined (s)	67.4		47.1									
Intersection Summary												
Intersection Capacity Utilization			71.4%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	17	5	13	14	5	74	8	449	25	84	368	10
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	35	0	0	93	0	8	474	0	84	378	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.87	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1751	0	0	1661	0	1805	1885	0	1805	1892	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	0.5	30.2	0.0	5.6	24.0	0.0
Adj Reference Time (s)			0.0			0.0	9.0	34.2	0.0	9.6	28.0	0.0
Permitted Option												
Adj Saturation A (vph)	0	700		0	1619		120	1885		120	1892	
Reference Time A (s)	0.0	6.0		0.0	6.9		8.0	30.2		83.8	24.0	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	9.1	10.4		8.9	14.7		NA	NA		NA	NA	
Reference Time (s)		6.0			6.9			30.2			83.8	
Adj Reference Time (s)		10.0			10.9			34.2			87.8	
Split Option												
Ref Time Combined (s)	0.0	2.4		0.0	6.7		0.5	30.2		5.6	24.0	
Ref Time Seperate (s)	1.1	0.4		0.9	0.4		0.5	28.6		5.6	23.3	
Reference Time (s)	2.4	2.4		6.7	6.7		30.2	30.2		24.0	24.0	
Adj Reference Time (s)	9.0	9.0		10.7	10.7		34.2	34.2		28.0	28.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		43.8									
Permitted Option (s)	10.9		87.8									
Split Option (s)	19.7		62.1									
Minimum (s)	10.9		43.8		54.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			45.5%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

05/07/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Volume (vph)	4	18	473	28	16	396
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	22	0	501	0	16	396
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.87	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1652	0	1884	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	31.9	0.0	1.1	25.0
Adj Reference Time (s)		0.0	35.9	0.0	8.0	29.0
Permitted Option						
Adj Saturation A (vph)	110		1884		120	1900
Reference Time A (s)	24.0		31.9		16.0	25.0
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			31.9			25.0
Adj Reference Time (s)			35.9			29.0
Split Option						
Ref Time Combined (s)	1.6		31.9		1.1	25.0
Ref Time Seperate (s)	0.3		30.1		1.1	25.0
Reference Time (s)	1.6		31.9		25.0	25.0
Adj Reference Time (s)	8.0		35.9		29.0	29.0
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		43.9			
Permitted Option (s)	Err		35.9			
Split Option (s)	8.0		64.9			
Minimum (s)	8.0		35.9		43.9	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			36.6%		ICU Level of Service	A
Reference Times and Phasing Options do not represent an optimized timing plan.						

Intersection Capacity Utilization  
10: Greenleaf Avenue & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↘		↗	↘		↗	↘		↗	↘		
Volume (vph)	95	417	200	30	455	108	240	301	20	74	243	77	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	95	617	0	30	563	0	240	321	0	74	320	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.96	0.85	
Saturated Flow (vph)	1805	1808	0	1805	1845	0	1805	1882	0	1805	1831	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	6.3	41.0	0.0	2.0	36.6	0.0	16.0	20.5	0.0	4.9	21.0	0.0	
Adj Reference Time (s)	10.3	45.0	0.0	9.0	40.6	0.0	20.0	24.5	0.0	9.0	25.0	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1808		120	1845		120	1882		120	1831		
Reference Time A (s)	94.7	41.0		29.9	36.6		239.3	20.5		73.8	21.0		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		94.7			36.6			239.3			73.8		
Adj Reference Time (s)		98.7			40.6			243.3			77.8		
Split Option													
Ref Time Combined (s)	6.3	41.0		2.0	36.6		16.0	20.5		4.9	21.0		
Ref Time Seperate (s)	6.3	27.7		2.0	29.6		16.0	19.2		4.9	15.9		
Reference Time (s)	41.0	41.0		36.6	36.6		20.5	20.5		21.0	21.0		
Adj Reference Time (s)	45.0	45.0		40.6	40.6		24.5	24.5		25.0	25.0		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	54.0		44.9										
Permitted Option (s)	98.7		243.3										
Split Option (s)	85.6		49.4										
Minimum (s)	54.0		44.9		98.9								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			82.4%		ICU Level of Service						E		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑		
Volume (vph)	61	1133	135	33	696	36	125	421	37	45	361	58	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	61	1268	0	33	732	0	125	458	0	45	419	0	
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85	
Saturated Flow (vph)	1805	5093	0	1805	5137	0	1805	3574	0	1805	3542	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	4.1	29.9	0.0	2.2	17.1	0.0	8.3	15.4	0.0	3.0	14.2	0.0	
Adj Reference Time (s)	9.0	33.9	0.0	9.0	21.1	0.0	12.3	19.4	0.0	9.0	18.2	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1698		120	1712		120	1787		120	1771		
Reference Time A (s)	60.8	29.9		32.9	17.1		124.7	15.4		44.9	14.2		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		60.8			32.9			124.7			44.9		
Adj Reference Time (s)		64.8			36.9			128.7			48.9		
Split Option													
Ref Time Combined (s)	4.1	29.9		2.2	17.1		8.3	15.4		3.0	14.2		
Ref Time Seperate (s)	4.1	26.7		2.2	16.3		8.3	14.1		3.0	12.2		
Reference Time (s)	29.9	29.9		17.1	17.1		15.4	15.4		14.2	14.2		
Adj Reference Time (s)	33.9	33.9		21.1	21.1		19.4	19.4		18.2	18.2		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	42.9		30.5										
Permitted Option (s)	64.8		128.7										
Split Option (s)	55.0		37.6										
Minimum (s)	42.9		30.5		73.4								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			61.2%		ICU Level of Service						B		
Reference Times and Phasing Options do not represent an optimized timing plan.													

**Appendix C**  
Proposed Project Trip Generation Calculations

**TRIP GENERATION  
GREENLEAF BUSINESS CENTER PROJECT**

<b>Table 1: Trip Generation Rates</b>								
Land Use	Rate	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
General Light Industrial (ITE Code 110)	per 1,000 sf	4.96	77%	23%	0.70	27%	73%	0.63
Warehousing (ITE Code 150)	per 1,000 sf	1.74	77%	23%	0.17	27%	73%	0.19
General Office Building (ITE Code 710)	per 1,000 sf	9.74	86%	14%	1.16	16%	84%	1.15

<b>Table 2: Trip Generation Estimates</b>								
Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
General Light Industrial (ITE Code 110)	60,150 sf	298	32	10	42	10	28	38
Warehousing (ITE Code 150)	140,350 sf	244	18	6	24	7	20	27
<i>Estimated Number of Passenger Vehicles (78.6%) [a]</i>	-- --	426	40	12	52	14	37	51
<i>Estimated Number of 2-Axle Trucks (8.0%) [a]</i>	-- --	43	4	1	5	1	4	5
<i>Estimated Number of 2-Axle Trucks - PCE Trips (PCE - 2.0)</i>		86	8	2	10	2	8	10
<i>Estimated Number of 3-Axle Trucks (3.9%) [a]</i>	-- --	21	2	1	3	1	2	3
<i>Estimated Number of 3-Axle Trucks - PCE Trips (PCE - 2.0)</i>		42	4	2	6	2	4	6
<i>Estimated Number of 4+-Axle Trucks (9.5%) [a]</i>	-- --	51	5	1	6	2	4	6
<i>Estimated Number of 4+-Axle Trucks - PCE Trips (PCE - 3.0)</i>		153	15	3	18	6	12	18
General Light Industrial and Warehousing Subtotal		707	67	19	86	24	61	85
Office (ITE Code 710)	16,000 sf	156	16	3	19	3	15	18
<b>TOTAL</b>	<b>216,500 sf</b>	<b>863</b>	<b>83</b>	<b>22</b>	<b>105</b>	<b>27</b>	<b>76</b>	<b>103</b>

Notes:  
 sf - square feet  
 [a] Source: *Truck Trip Generation Study* (City of Fontana, August 2003)

**Appendix D**  
LOS Worksheets – Existing Plus Project Conditions

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷		
Volume (vph)	48	194	165	76	231	162	60	369	77	127	728	79	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	48	359	0	76	393	0	60	446	0	127	807	0	
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.94	0.85	0.95	0.97	0.85	0.95	0.99	0.85	
Saturated Flow (vph)	1805	3368	0	1805	3394	0	1805	3524	0	1805	3564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	3.2	12.8	0.0	5.1	13.9	0.0	4.0	15.2	0.0	8.4	27.2	0.0	
Adj Reference Time (s)	9.5	17.3	0.0	9.6	18.4	0.0	9.5	19.7	0.0	12.9	31.7	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1684		120	1697		120	1762		120	1782		
Reference Time A (s)	47.9	12.8		75.8	13.9		59.8	15.2		126.6	27.2		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		47.9			75.8			59.8			126.6		
Adj Reference Time (s)		52.4			80.3			64.3			131.1		
Split Option													
Ref Time Combined (s)	3.2	12.8		5.1	13.9		4.0	15.2		8.4	27.2		
Ref Time Seperate (s)	3.2	6.9		5.1	8.2		4.0	12.6		8.4	24.5		
Reference Time (s)	12.8	12.8		13.9	13.9		15.2	15.2		27.2	27.2		
Adj Reference Time (s)	17.3	17.3		18.4	18.4		19.7	19.7		31.7	31.7		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	27.9		41.2										
Permitted Option (s)	80.3		131.1										
Split Option (s)	35.7		51.4										
Minimum (s)	27.9		41.2		69.1								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			57.6%		ICU Level of Service						B		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	78	1382	85	217	1045	200	104	513	174	201	568	85
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	78	1382	85	217	1245	0	104	687	0	201	568	85
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5051	0	1805	3480	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	5.2	32.0	6.3	14.4	29.6	0.0	6.9	23.7	0.0	13.4	18.8	6.3
Adj Reference Time (s)	9.7	36.5	10.8	18.9	34.1	0.0	11.4	28.2	0.0	17.9	23.3	10.8
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1684		120	1740		120	1809	
Reference Time A (s)	77.8	32.0		216.4	29.6		103.7	23.7		200.4	18.8	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		77.8			216.4			103.7			200.4	
Adj Reference Time (s)		82.3			220.9			108.2			204.9	
Split Option												
Ref Time Combined (s)	5.2	32.0		14.4	29.6		6.9	23.7		13.4	18.8	
Ref Time Seperate (s)	5.2	32.0		14.4	24.8		6.9	17.7		13.4	18.8	
Reference Time (s)	32.0	32.0		29.6	29.6		23.7	23.7		18.8	18.8	
Adj Reference Time (s)	36.5	36.5		34.1	34.1		28.2	28.2		23.3	23.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	55.5		46.1									
Permitted Option (s)	220.9		204.9									
Split Option (s)	70.6		51.5									
Minimum (s)	55.5		46.1		101.5							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	10.8		10.8									
Cross Thru Ref Time (s)	23.3		34.1									
Oncoming Left Ref Time (s)	18.9		11.4									
Combined (s)	53.1		56.3									

### Intersection Summary

Intersection Capacity Utilization 84.6% ICU Level of Service E  
 Reference Times and Phasing Options do not represent an optimized timing plan.



# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷↷↷		↶	↷↷↷		↶	↷↷		↶	↷↷	↶
Volume (vph)	104	867	150	165	1461	131	71	353	44	111	739	210
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	104	1017	0	165	1592	0	71	397	0	111	739	210
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5061	0	1805	5112	0	1805	3557	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.9	24.1	0.0	11.0	37.4	0.0	4.7	13.4	0.0	7.4	24.5	15.6
Adj Reference Time (s)	10.9	28.1	0.0	15.0	41.4	0.0	9.0	17.4	0.0	11.4	28.5	19.6
Permitted Option												
Adj Saturation A (vph)	120	1687		120	1704		120	1779		120	1809	
Reference Time A (s)	103.7	24.1		164.5	37.4		70.8	13.4		110.7	24.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		103.7			164.5			70.8			110.7	
Adj Reference Time (s)		107.7			168.5			74.8			114.7	
Split Option												
Ref Time Combined (s)	6.9	24.1		11.0	37.4		4.7	13.4		7.4	24.5	
Ref Time Seperate (s)	6.9	20.6		11.0	34.3		4.7	11.9		7.4	24.5	
Reference Time (s)	24.1	24.1		37.4	37.4		13.4	13.4		24.5	24.5	
Adj Reference Time (s)	28.1	28.1		41.4	41.4		17.4	17.4		28.5	28.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	52.3		37.5									
Permitted Option (s)	168.5		114.7									
Split Option (s)	69.5		45.9									
Minimum (s)	52.3		37.5		89.8							
Right Turns												
	SBR											
Adj Reference Time (s)	19.6											
Cross Thru Ref Time (s)	41.4											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	70.0											
Intersection Summary												
Intersection Capacity Utilization			74.8%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

09/17/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	385	282	542	945	27
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	4	385	282	542	972	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3603	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)		28.6	18.7	18.0	32.4	0.0
Adj Reference Time (s)		32.6	22.7	22.0	36.4	0.0
Permitted Option						
Adj Saturation A (vph)	120		120	1809	1801	
Reference Time A (s)	4.0		281.2	18.0	32.4	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)				281.2	32.4	
Adj Reference Time (s)				285.2	36.4	
Split Option						
Ref Time Combined (s)	0.3		18.7	18.0	32.4	
Ref Time Seperate (s)	0.3		18.7	18.0	31.5	
Reference Time (s)	0.3		18.7	18.7	32.4	
Adj Reference Time (s)	8.0		22.7	22.7	36.4	
Summary						
	EB		NB SB		Combined	
Protected Option (s)	NA		59.1			
Permitted Option (s)	Err		285.2			
Split Option (s)	8.0		59.1			
Minimum (s)	8.0		59.1		67.1	
Right Turns						
	EBR					
Adj Reference Time (s)	32.6					
Cross Thru Ref Time (s)	36.4					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	69.0					

### Intersection Summary

Intersection Capacity Utilization 57.5% ICU Level of Service B  
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization  
5: Santa Fe Springs Road & Los Nietos Road






























09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	303	165	154	510	202	117	598	66	195	957	102
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	47	468	0	154	510	202	117	664	0	195	1059	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1805	1800	0	1805	1900	1615	1805	3564	0	1805	3565	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	3.1	31.2	0.0	10.2	32.2	15.0	7.8	22.4	0.0	13.0	35.6	0.0
Adj Reference Time (s)	9.0	35.2	0.0	14.2	36.2	19.0	11.8	26.4	0.0	17.0	39.6	0.0
Permitted Option												
Adj Saturation A (vph)	120	1800		120	1900		120	1782		120	1783	
Reference Time A (s)	46.9	31.2		153.6	32.2		116.7	22.4		194.5	35.6	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		46.9			153.6			116.7			194.5	
Adj Reference Time (s)		50.9			157.6			120.7			198.5	
Split Option												
Ref Time Combined (s)	3.1	31.2		10.2	32.2		7.8	22.4		13.0	35.6	
Ref Time Seperate (s)	3.1	20.2		10.2	32.2		7.8	20.1		13.0	32.2	
Reference Time (s)	31.2	31.2		32.2	32.2		22.4	22.4		35.6	35.6	
Adj Reference Time (s)	35.2	35.2		36.2	36.2		26.4	26.4		39.6	39.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	49.4		51.4									
Permitted Option (s)	157.6		198.5									
Split Option (s)	71.4		66.0									
Minimum (s)	49.4		51.4		100.9							
Right Turns												
	WBR											
Adj Reference Time (s)	19.0											
Cross Thru Ref Time (s)	26.4											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	54.4											
Intersection Summary												
Intersection Capacity Utilization			84.1%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
6: Santa Fe Springs Road & Telegraph Road

09/17/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Volume (vph)	203	760	135	48	1126	177	100	590	72	47	878	212
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	203	760	135	48	1126	177	100	662	0	47	1090	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3559	0	1805	3512	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	13.5	17.6	10.0	3.2	26.1	13.2	6.6	22.3	0.0	3.1	37.2	0.0
Adj Reference Time (s)	17.5	21.6	14.0	9.0	30.1	17.2	10.6	26.3	0.0	9.0	41.2	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1779		120	1756	
Reference Time A (s)	202.4	17.6		47.9	26.1		99.7	22.3		46.9	37.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		202.4			47.9			99.7			46.9	
Adj Reference Time (s)		206.4			51.9			103.7			50.9	
Split Option												
Ref Time Combined (s)	13.5	17.6		3.2	26.1		6.6	22.3		3.1	37.2	
Ref Time Seperate (s)	13.5	17.6		3.2	26.1		6.6	19.9		3.1	30.0	
Reference Time (s)	17.6	17.6		26.1	26.1		22.3	22.3		37.2	37.2	
Adj Reference Time (s)	21.6	21.6		30.1	30.1		26.3	26.3		41.2	41.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.6		51.9									
Permitted Option (s)	206.4		103.7									
Split Option (s)	51.7		67.6									
Minimum (s)	47.6		51.9		99.5							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	14.0		17.2									
Cross Thru Ref Time (s)	41.2		26.3									
Oncoming Left Ref Time (s)	9.0		17.5									
Combined (s)	64.3		61.0									
Intersection Summary												
Intersection Capacity Utilization			82.9%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
7: Greenleaf Avenue & Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↕↕↕		↰	↕↕↕		↰	↕	↰	↰	↕	↰
Volume (vph)	36	842	129	126	1479	102	110	172	70	124	339	148
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	36	971	0	126	1581	0	110	172	70	124	339	148
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5072	0	1805	5126	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	2.4	23.0	0.0	8.4	37.0	0.0	7.3	10.9	5.2	8.2	21.4	11.0
Adj Reference Time (s)	9.0	27.0	0.0	12.4	41.0	0.0	11.3	14.9	9.2	12.2	25.4	15.0
Permitted Option												
Adj Saturation A (vph)	120	1691		120	1709		120	1900		120	1900	
Reference Time A (s)	35.9	23.0		125.7	37.0		109.7	10.9		123.7	21.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		35.9			125.7			109.7			123.7	
Adj Reference Time (s)		39.9			129.7			113.7			127.7	
Split Option												
Ref Time Combined (s)	2.4	23.0		8.4	37.0		7.3	10.9		8.2	21.4	
Ref Time Seperate (s)	2.4	19.9		8.4	34.6		7.3	10.9		8.2	21.4	
Reference Time (s)	23.0	23.0		37.0	37.0		10.9	10.9		21.4	21.4	
Adj Reference Time (s)	27.0	27.0		41.0	41.0		14.9	14.9		25.4	25.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.0		36.7									
Permitted Option (s)	129.7		127.7									
Split Option (s)	68.0		40.3									
Minimum (s)	50.0		36.7		86.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	9.2		15.0									
Cross Thru Ref Time (s)	27.0		41.0									
Oncoming Left Ref Time (s)	12.2		11.3									
Combined (s)	48.4		67.3									
Intersection Summary												
Intersection Capacity Utilization			72.3%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	7	2	5	68	6	80	25	356	26	53	599	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	14	0	0	154	0	25	382	0	53	612	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.90	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1753	0	0	1713	0	1805	1881	0	1805	1894	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	1.7	24.4	0.0	3.5	38.8	0.0
Adj Reference Time (s)			0.0			0.0	9.0	28.4	0.0	9.0	42.8	0.0
Permitted Option												
Adj Saturation A (vph)	0	1309		0	1429		120	1881		120	1894	
Reference Time A (s)	0.0	1.3		0.0	12.9		24.9	24.4		52.9	38.8	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	8.5	9.0		12.5	18.8		NA	NA		NA	NA	
Reference Time (s)		1.3			12.9			24.9			52.9	
Adj Reference Time (s)		9.0			16.9			28.9			56.9	
Split Option												
Ref Time Combined (s)	0.0	1.0		0.0	10.8		1.7	24.4		3.5	38.8	
Ref Time Seperate (s)	0.5	0.1		4.5	0.4		1.7	22.7		3.5	38.0	
Reference Time (s)	1.0	1.0		10.8	10.8		24.4	24.4		38.8	38.8	
Adj Reference Time (s)	9.0	9.0		14.8	14.8		28.4	28.4		42.8	42.8	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		51.8									
Permitted Option (s)	16.9		56.9									
Split Option (s)	23.8		71.2									
Minimum (s)	16.9		51.8		68.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			57.3%		ICU Level of Service		B					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

09/17/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	24	370	13	36	543
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	41	0	383	0	36	543
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.89	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1697	0	1890	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	24.3	0.0	2.4	34.3
Adj Reference Time (s)		0.0	28.3	0.0	8.0	38.3
Permitted Option						
Adj Saturation A (vph)	113		1890		120	1900
Reference Time A (s)	43.5		24.3		35.9	34.3
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			24.3			35.9
Adj Reference Time (s)			28.3			39.9
Split Option						
Ref Time Combined (s)	2.9		24.3		2.4	34.3
Ref Time Seperate (s)	1.2		23.5		2.4	34.3
Reference Time (s)	2.9		24.3		34.3	34.3
Adj Reference Time (s)	8.0		28.3		38.3	38.3
Summary						
	WB		NB SB		Combined	
Protected Option (s)	NA		38.3			
Permitted Option (s)	Err		39.9			
Split Option (s)	8.0		66.6			
Minimum (s)	8.0		38.3		46.3	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			38.6%		ICU Level of Service	A
Reference Times and Phasing Options do not represent an optimized timing plan.						

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	57	294	189	43	515	67	208	260	29	73	304	189
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	57	483	0	43	582	0	208	289	0	73	493	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	0.94	0.85
Saturated Flow (vph)	1805	1788	0	1805	1867	0	1805	1871	0	1805	1791	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	3.8	32.4	0.0	2.9	37.4	0.0	13.8	18.5	0.0	4.9	33.0	0.0
Adj Reference Time (s)	9.0	36.4	0.0	9.0	41.4	0.0	17.8	22.5	0.0	9.0	37.0	0.0
Permitted Option												
Adj Saturation A (vph)	120	1788		120	1867		120	1871		120	1791	
Reference Time A (s)	56.8	32.4		42.9	37.4		207.4	18.5		72.8	33.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		56.8			42.9			207.4			72.8	
Adj Reference Time (s)		60.8			46.9			211.4			76.8	
Split Option												
Ref Time Combined (s)	3.8	32.4		2.9	37.4		13.8	18.5		4.9	33.0	
Ref Time Seperate (s)	3.8	19.7		2.9	33.1		13.8	16.7		4.9	20.4	
Reference Time (s)	32.4	32.4		37.4	37.4		18.5	18.5		33.0	33.0	
Adj Reference Time (s)	36.4	36.4		41.4	41.4		22.5	22.5		37.0	37.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.4		54.9									
Permitted Option (s)	60.8		211.4									
Split Option (s)	77.8		59.6									
Minimum (s)	50.4		54.9		105.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			87.7%		ICU Level of Service				E			
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↕↕↕		↗	↕↕↕		↗	↕↕		↗	↕↕		
Volume (vph)	105	560	155	66	1170	48	152	380	33	38	434	58	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	105	715	0	66	1218	0	152	413	0	38	492	0	
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85	
Saturated Flow (vph)	1805	5007	0	1805	5145	0	1805	3574	0	1805	3554	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	7.0	17.1	0.0	4.4	28.4	0.0	10.1	13.9	0.0	2.5	16.6	0.0	
Adj Reference Time (s)	11.0	21.1	0.0	9.0	32.4	0.0	14.1	17.9	0.0	9.0	20.6	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1669		120	1715		120	1787		120	1777		
Reference Time A (s)	104.7	17.1		65.8	28.4		151.6	13.9		37.9	16.6		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		104.7			65.8			151.6			37.9		
Adj Reference Time (s)		108.7			69.8			155.6			41.9		
Split Option													
Ref Time Combined (s)	7.0	17.1		4.4	28.4		10.1	13.9		2.5	16.6		
Ref Time Seperate (s)	7.0	13.4		4.4	27.3		10.1	12.8		2.5	14.7		
Reference Time (s)	17.1	17.1		28.4	28.4		13.9	13.9		16.6	16.6		
Adj Reference Time (s)	21.1	21.1		32.4	32.4		17.9	17.9		20.6	20.6		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	43.4		34.7										
Permitted Option (s)	108.7		155.6										
Split Option (s)	53.5		38.5										
Minimum (s)	43.4		34.7		78.1								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			65.1%		ICU Level of Service						C		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↖	↕		↖	↕	
Volume (vph)	28	204	101	129	423	218	121	742	108	110	563	74
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	28	305	0	129	641	0	121	850	0	110	637	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.98	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	3438	0	1805	3433	0	1805	3549	0	1805	3555	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	1.9	10.6	0.0	8.6	22.4	0.0	8.0	28.7	0.0	7.3	21.5	0.0
Adj Reference Time (s)	9.5	15.1	0.0	13.1	26.9	0.0	12.5	33.2	0.0	11.8	26.0	0.0
Permitted Option												
Adj Saturation A (vph)	120	1719		120	1717		120	1774		120	1777	
Reference Time A (s)	27.9	10.6		128.6	22.4		120.7	28.7		109.7	21.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		27.9			128.6			120.7			109.7	
Adj Reference Time (s)		32.4			133.1			125.2			114.2	
Split Option												
Ref Time Combined (s)	1.9	10.6		8.6	22.4		8.0	28.7		7.3	21.5	
Ref Time Seperate (s)	1.9	7.1		8.6	14.8		8.0	25.1		7.3	19.0	
Reference Time (s)	10.6	10.6		22.4	22.4		28.7	28.7		21.5	21.5	
Adj Reference Time (s)	15.1	15.1		26.9	26.9		33.2	33.2		26.0	26.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.4		45.1									
Permitted Option (s)	133.1		125.2									
Split Option (s)	42.1		59.2									
Minimum (s)	36.4		45.1		81.5							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			67.9%		ICU Level of Service						C	
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	95	1211	86	120	1214	155	159	702	280	175	482	101
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	95	1211	86	120	1369	0	159	982	0	175	482	101
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5088	0	1805	3463	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.3	28.1	6.4	8.0	32.3	0.0	10.6	34.0	0.0	11.6	16.0	7.5
Adj Reference Time (s)	10.8	32.6	10.9	12.5	36.8	0.0	15.1	38.5	0.0	16.1	20.5	12.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1696		120	1731		120	1809	
Reference Time A (s)	94.7	28.1		119.7	32.3		158.6	34.0		174.5	16.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		94.7			119.7			158.6			174.5	
Adj Reference Time (s)		99.2			124.2			163.1			179.0	
Split Option												
Ref Time Combined (s)	6.3	28.1		8.0	32.3		10.6	34.0		11.6	16.0	
Ref Time Seperate (s)	6.3	28.1		8.0	28.6		10.6	24.3		11.6	16.0	
Reference Time (s)	28.1	28.1		32.3	32.3		34.0	34.0		16.0	16.0	
Adj Reference Time (s)	32.6	32.6		36.8	36.8		38.5	38.5		20.5	20.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.6		54.7									
Permitted Option (s)	124.2		179.0									
Split Option (s)	69.4		59.0									
Minimum (s)	47.6		54.7		102.3							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	10.9		12.0									
Cross Thru Ref Time (s)	20.5		36.8									
Oncoming Left Ref Time (s)	12.5		15.1									
Combined (s)	43.9		63.9									
Intersection Summary												
Intersection Capacity Utilization			85.2%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕↕↕		↗	↕↕↕		↗	↕↕		↗	↕↕	↗
Volume (vph)	157	1407	97	100	779	124	120	692	168	112	494	128
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	157	1504	0	100	903	0	120	860	0	112	494	128
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	0.97	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5126	0	1805	5069	0	1805	3512	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	10.4	35.2	0.0	6.6	21.4	0.0	8.0	29.4	0.0	7.4	16.4	9.5
Adj Reference Time (s)	14.4	39.2	0.0	10.6	25.4	0.0	12.0	33.4	0.0	11.4	20.4	13.5
Permitted Option												
Adj Saturation A (vph)	120	1709		120	1690		120	1756		120	1809	
Reference Time A (s)	156.6	35.2		99.7	21.4		119.7	29.4		111.7	16.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		156.6			99.7			119.7			111.7	
Adj Reference Time (s)		160.6			103.7			123.7			115.7	
Split Option												
Ref Time Combined (s)	10.4	35.2		6.6	21.4		8.0	29.4		7.4	16.4	
Ref Time Seperate (s)	10.4	32.9		6.6	18.4		8.0	23.6		7.4	16.4	
Reference Time (s)	35.2	35.2		21.4	21.4		29.4	29.4		16.4	16.4	
Adj Reference Time (s)	39.2	39.2		25.4	25.4		33.4	33.4		20.4	20.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	49.9		44.8									
Permitted Option (s)	160.6		123.7									
Split Option (s)	64.6		53.8									
Minimum (s)	49.9		44.8		94.7							
Right Turns												
	SBR											
Adj Reference Time (s)	13.5											
Cross Thru Ref Time (s)	25.4											
Oncoming Left Ref Time (s)	12.0											
Combined (s)	50.9											
Intersection Summary												
Intersection Capacity Utilization			78.9%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

09/17/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	309	380	912	646	17
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No				No	
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	19	309	380	912	663	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3604	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00	
Protected Option Allowed	No		Yes		Yes	
Reference Time (s)	23.0		25.3	30.3	22.1	0.0
Adj Reference Time (s)	27.0		29.3	34.3	26.1	0.0
Permitted Option						
Adj Saturation A (vph)	120	120		1809	1802	
Reference Time A (s)	18.9	378.9		30.3	22.1	
Adj Saturation B (vph)	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA	
Reference Time (s)				378.9	22.1	
Adj Reference Time (s)				382.9	26.1	
Split Option						
Ref Time Combined (s)	1.3	25.3		30.3	22.1	
Ref Time Seperate (s)	1.3	25.3		30.3	21.5	
Reference Time (s)	1.3	30.3		30.3	22.1	
Adj Reference Time (s)	8.0	34.3		34.3	26.1	
Summary						
	EB	NB SB		Combined		
Protected Option (s)	NA	55.3				
Permitted Option (s)	Err	382.9				
Split Option (s)	8.0	60.3				
Minimum (s)	8.0	55.3		63.3		
Right Turns						
	EBR					
Adj Reference Time (s)	27.0					
Cross Thru Ref Time (s)	26.1					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	53.0					
Intersection Summary						
Intersection Capacity Utilization	52.8%		ICU Level of Service		A	
Reference Times and Phasing Options do not represent an optimized timing plan.						

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	439	93	77	478	248	127	940	74	171	704	94
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	75	532	0	77	478	248	127	1014	0	171	798	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	1850	0	1805	1900	1615	1805	3578	0	1805	3554	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	5.0	34.5	0.0	5.1	30.2	18.4	8.4	34.0	0.0	11.4	26.9	0.0
Adj Reference Time (s)	9.0	38.5	0.0	9.1	34.2	22.4	12.4	38.0	0.0	15.4	30.9	0.0
Permitted Option												
Adj Saturation A (vph)	120	1850		120	1900		120	1789		120	1777	
Reference Time A (s)	74.8	34.5		76.8	30.2		126.6	34.0		170.5	26.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		74.8			76.8			126.6			170.5	
Adj Reference Time (s)		78.8			80.8			130.6			174.5	
Split Option												
Ref Time Combined (s)	5.0	34.5		5.1	30.2		8.4	34.0		11.4	26.9	
Ref Time Seperate (s)	5.0	28.5		5.1	30.2		8.4	31.5		11.4	23.8	
Reference Time (s)	34.5	34.5		30.2	30.2		34.0	34.0		26.9	26.9	
Adj Reference Time (s)	38.5	38.5		34.2	34.2		38.0	38.0		30.9	30.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.6		53.4									
Permitted Option (s)	80.8		174.5									
Split Option (s)	72.7		69.0									
Minimum (s)	47.6		53.4		101.0							
Right Turns												
	WBR											
Adj Reference Time (s)	22.4											
Cross Thru Ref Time (s)	38.0											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	69.4											
Intersection Summary												
Intersection Capacity Utilization	84.2%		ICU Level of Service		E							
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑↑	↵	↵	↑↑↑	↵	↵	↑↑		↵	↑↑	
Volume (vph)	156	1166	110	49	755	71	74	785	76	112	713	231
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	156	1166	110	49	755	71	74	861	0	112	944	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3570	0	1805	3485	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	10.4	27.0	8.2	3.3	17.5	5.3	4.9	28.9	0.0	7.4	32.5	0.0
Adj Reference Time (s)	14.4	31.0	12.2	9.0	21.5	9.3	9.0	32.9	0.0	11.4	36.5	0.0
Permitted Option												
Adj Saturation A (vph)		120	1725		120	1725		120	1785		120	1742
Reference Time A (s)		155.6	27.0		48.9	17.5		73.8	28.9		111.7	32.5
Adj Saturation B (vph)		NA	NA		NA	NA		NA	NA		NA	NA
Reference Time B (s)		NA	NA		NA	NA		NA	NA		NA	NA
Reference Time (s)		155.6			48.9			73.8			111.7	
Adj Reference Time (s)		159.6			52.9			77.8			115.7	
Split Option												
Ref Time Combined (s)	10.4	27.0		3.3	17.5		4.9	28.9		7.4	32.5	
Ref Time Seperate (s)	10.4	27.0		3.3	17.5		4.9	26.4		7.4	24.6	
Reference Time (s)	27.0	27.0		17.5	17.5		28.9	28.9		32.5	32.5	
Adj Reference Time (s)	31.0	31.0		21.5	21.5		32.9	32.9		36.5	36.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	40.0		45.5									
Permitted Option (s)	159.6		115.7									
Split Option (s)	52.5		69.5									
Minimum (s)	40.0		45.5		85.5							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	12.2		9.3									
Cross Thru Ref Time (s)	36.5		32.9									
Oncoming Left Ref Time (s)	9.0		14.4									
Combined (s)	57.7		56.6									
Intersection Summary												
Intersection Capacity Utilization			71.3%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 7: Greenleaf Avenue & Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑	↗	↗	↑	↗
Volume (vph)	96	1539	74	39	808	94	125	314	148	109	241	75
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	96	1613	0	39	902	0	125	314	148	109	241	75
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5140	0	1805	5095	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.4	37.7	0.0	2.6	21.2	0.0	8.3	19.8	11.0	7.2	15.2	5.6
Adj Reference Time (s)	10.4	41.7	0.0	9.0	25.2	0.0	12.3	23.8	15.0	11.2	19.2	9.6
Permitted Option												
Adj Saturation A (vph)	120	1713		120	1698		120	1900		120	1900	
Reference Time A (s)	95.7	37.7		38.9	21.2		124.7	19.8		108.7	15.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		95.7			38.9			124.7			108.7	
Adj Reference Time (s)		99.7			42.9			128.7			112.7	
Split Option												
Ref Time Combined (s)	6.4	37.7		2.6	21.2		8.3	19.8		7.2	15.2	
Ref Time Seperate (s)	6.4	35.9		2.6	19.0		8.3	19.8		7.2	15.2	
Reference Time (s)	37.7	37.7		21.2	21.2		19.8	19.8		15.2	15.2	
Adj Reference Time (s)	41.7	41.7		25.2	25.2		23.8	23.8		19.2	19.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.7		35.1									
Permitted Option (s)	99.7		128.7									
Split Option (s)	66.9		43.1									
Minimum (s)	50.7		35.1		85.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	15.0		9.6									
Cross Thru Ref Time (s)	41.7		25.2									
Oncoming Left Ref Time (s)	11.2		12.3									
Combined (s)	67.9		47.1									

### Intersection Summary

Intersection Capacity Utilization 71.4% ICU Level of Service C  
 Reference Times and Phasing Options do not represent an optimized timing plan.



Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	17	5	13	14	5	74	8	455	25	84	370	10
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	35	0	0	93	0	8	480	0	84	380	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.87	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1751	0	0	1661	0	1805	1885	0	1805	1893	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	0.5	30.6	0.0	5.6	24.1	0.0
Adj Reference Time (s)			0.0			0.0	9.0	34.6	0.0	9.6	28.1	0.0
Permitted Option												
Adj Saturation A (vph)	0	700		0	1619		120	1885		120	1893	
Reference Time A (s)	0.0	6.0		0.0	6.9		8.0	30.6		83.8	24.1	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	9.1	10.4		8.9	14.7		NA	NA		NA	NA	
Reference Time (s)		6.0			6.9			30.6			83.8	
Adj Reference Time (s)		10.0			10.9			34.6			87.8	
Split Option												
Ref Time Combined (s)	0.0	2.4		0.0	6.7		0.5	30.6		5.6	24.1	
Ref Time Seperate (s)	1.1	0.4		0.9	0.4		0.5	29.0		5.6	23.5	
Reference Time (s)	2.4	2.4		6.7	6.7		30.6	30.6		24.1	24.1	
Adj Reference Time (s)	9.0	9.0		10.7	10.7		34.6	34.6		28.1	28.1	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		44.1									
Permitted Option (s)	10.9		87.8									
Split Option (s)	19.7		62.6									
Minimum (s)	10.9		44.1		55.0							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			45.9%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
9: Greenleaf Avenue & Barton Road

09/17/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	18	479	28	16	398
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No		No			
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	22	0	507	0	16	398
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.87	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1652	0	1884	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	32.3	0.0	1.1	25.1
Adj Reference Time (s)		0.0	36.3	0.0	8.0	29.1
Permitted Option						
Adj Saturation A (vph)	110		1884		120	1900
Reference Time A (s)	24.0		32.3		16.0	25.1
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			32.3			25.1
Adj Reference Time (s)			36.3			29.1
Split Option						
Ref Time Combined (s)	1.6		32.3		1.1	25.1
Ref Time Seperate (s)	0.3		30.5		1.1	25.1
Reference Time (s)	1.6		32.3		25.1	25.1
Adj Reference Time (s)	8.0		36.3		29.1	29.1
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		44.3			
Permitted Option (s)	Err		36.3			
Split Option (s)	8.0		65.4			
Minimum (s)	8.0		36.3		44.3	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						

Intersection Summary

Intersection Capacity Utilization 36.9% ICU Level of Service A  
Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↘		↗	↘	
Volume (vph)	95	421	218	30	457	108	247	310	20	74	265	77
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	95	639	0	30	565	0	247	330	0	74	342	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1805	1803	0	1805	1846	0	1805	1883	0	1805	1836	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.3	42.5	0.0	2.0	36.7	0.0	16.4	21.0	0.0	4.9	22.4	0.0
Adj Reference Time (s)	10.3	46.5	0.0	9.0	40.7	0.0	20.4	25.0	0.0	9.0	26.4	0.0
Permitted Option												
Adj Saturation A (vph)	120	1803		120	1846		120	1883		120	1836	
Reference Time A (s)	94.7	42.5		29.9	36.7		246.3	21.0		73.8	22.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		94.7			36.7			246.3			73.8	
Adj Reference Time (s)		98.7			40.7			250.3			77.8	
Split Option												
Ref Time Combined (s)	6.3	42.5		2.0	36.7		16.4	21.0		4.9	22.4	
Ref Time Seperate (s)	6.3	28.0		2.0	29.7		16.4	19.8		4.9	17.3	
Reference Time (s)	42.5	42.5		36.7	36.7		21.0	21.0		22.4	22.4	
Adj Reference Time (s)	46.5	46.5		40.7	40.7		25.0	25.0		26.4	26.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	55.5		46.8									
Permitted Option (s)	98.7		250.3									
Split Option (s)	87.3		51.4									
Minimum (s)	55.5		46.8		102.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			85.3%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↗↗		↖	↗↗↗		↖	↗↗		↖	↗↗	
Volume (vph)	67	1133	135	33	696	41	125	427	37	57	376	72
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	67	1268	0	33	737	0	125	464	0	57	448	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	5093	0	1805	5132	0	1805	3574	0	1805	3530	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	4.5	29.9	0.0	2.2	17.2	0.0	8.3	15.6	0.0	3.8	15.2	0.0
Adj Reference Time (s)	9.0	33.9	0.0	9.0	21.2	0.0	12.3	19.6	0.0	9.0	19.2	0.0
Permitted Option												
Adj Saturation A (vph)	120	1698		120	1711		120	1787		120	1765	
Reference Time A (s)	66.8	29.9		32.9	17.2		124.7	15.6		56.8	15.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		66.8			32.9			124.7			56.8	
Adj Reference Time (s)		70.8			36.9			128.7			60.8	
Split Option												
Ref Time Combined (s)	4.5	29.9		2.2	17.2		8.3	15.6		3.8	15.2	
Ref Time Seperate (s)	4.5	26.7		2.2	16.3		8.3	14.3		3.8	12.8	
Reference Time (s)	29.9	29.9		17.2	17.2		15.6	15.6		15.2	15.2	
Adj Reference Time (s)	33.9	33.9		21.2	21.2		19.6	19.6		19.2	19.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	42.9		31.5									
Permitted Option (s)	70.8		128.7									
Split Option (s)	55.1		38.8									
Minimum (s)	42.9		31.5		74.4							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			62.0%		ICU Level of Service						B	
Reference Times and Phasing Options do not represent an optimized timing plan.												

**Appendix E**  
Approved/Pending Projects

**TRIP GENERATION  
APPROVED/PENDING PROJECTS**

No.	Land Use	Address	Land Use	Size	Daily	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	8640 Sorensen Avenue	8940 Sorensen Avenue	Industrial	26,250 sf	157	13	4	17	4	11	15
2	Air Liquide	8832 Dice Road	Industrial	15,000 sf	115	8	3	11	3	7	10
3	Ayala Industrial Investors, LLC	SW/C of Dice Road & Burke Street	Industrial	62,441 sf	295	24	7	31	7	20	27
4	Breitburn Operating L.P.	12405 Telegraph Road	Industrial	318,121 sf	1,264	81	24	105	22	60	82
5	FLP Santa Fe Springs, LLC	SW/C of Greenleaf Avenue & Los Nietos Road	Industrial	131,708 sf	557	42	13	55	12	33	45
6	Golden State Storage	13020 Telegraph Road	Self-Storage	56,426 sf	272	22	7	29	7	18	25
7	JSF Management, LLC	11212 Norwalk Boulevard	Industrial	128,896 sf	546	42	12	54	12	32	44
8	OC Engineering	8739 Dice Road	Industrial	30,902 sf	175	15	4	19	4	12	16
9	Ore International Inc	13360 Mollette Street	Industrial	15,098 sf	115	8	3	11	3	7	10
10	PPF Industrial, LLC	10075-10095 Romandel Avenue	Industrial	57,901 sf	249	20	6	25	6	15	21
11	PPF Industrial, LLC	12015-12085 Telegraph Road	Industrial	57,901 sf	249	20	6	25	6	15	21
12	PPF Industrial, LLC	SE/C of Telegraph Road & Bloomfield Avenue	Industrial	178,627 sf	735	53	16	69	15	40	55
13	PPF Industrial, LLC	10370 Slusher Drive	Industrial	25,132 sf	153	12	4	16	4	10	14
14	Rexford Industrial	9615 Norwalk Boulevard	Industrial	200,150 sf	817	58	17	75	16	44	60
15	Romandel	10051 Romandel Avenue	Industrial	167,366 sf	692	50	15	65	14	39	53
16	SE Pipeline	11908 Bloomfield Avenue	Industrial	8,022 sf	88	5	2	7	2	4	6
17	Sorensen XC, LLC	8201 Sorensen Avenue	Industrial	233,779 sf	944	65	19	84	18	48	66
18	UWS	9010-9016 Norwalk Boulevard	Industrial	20,000 sf	134	11	3	14	3	9	12
19	Storm Properties	SW/C of Carmenita Road and Lakeland Road	Multi-Family	128 du	696	12	34	46	34	22	56
<b>TOTAL</b>					<b>9,196</b>	<b>625</b>	<b>217</b>	<b>842</b>	<b>209</b>	<b>494</b>	<b>703</b>

Source: City of Santa Fe Springs

**Appendix F**  
LOS Worksheets – Opening Year 2020 Conditions

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷		
Volume (vph)	49	190	168	78	234	165	61	382	79	130	764	81	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	49	358	0	78	399	0	61	461	0	130	845	0	
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.94	0.85	0.95	0.97	0.85	0.95	0.99	0.85	
Saturated Flow (vph)	1805	3363	0	1805	3393	0	1805	3525	0	1805	3566	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	3.3	12.8	0.0	5.2	14.1	0.0	4.1	15.7	0.0	8.6	28.4	0.0	
Adj Reference Time (s)	9.5	17.3	0.0	9.7	18.6	0.0	9.5	20.2	0.0	13.1	32.9	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1681		120	1697		120	1762		120	1783		
Reference Time A (s)	48.9	12.8		77.8	14.1		60.8	15.7		129.6	28.4		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		48.9			77.8			60.8			129.6		
Adj Reference Time (s)		53.4			82.3			65.3			134.1		
Split Option													
Ref Time Combined (s)	3.3	12.8		5.2	14.1		4.1	15.7		8.6	28.4		
Ref Time Seperate (s)	3.3	6.8		5.2	8.3		4.1	13.0		8.6	25.7		
Reference Time (s)	12.8	12.8		14.1	14.1		15.7	15.7		28.4	28.4		
Adj Reference Time (s)	17.3	17.3		18.6	18.6		20.2	20.2		32.9	32.9		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	28.1		42.4										
Permitted Option (s)	82.3		134.1										
Split Option (s)	35.9		53.1										
Minimum (s)	28.1		42.4		70.5								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			58.8%		ICU Level of Service						B		
Reference Times and Phasing Options do not represent an optimized timing plan.													



# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	104	1504	88	221	1116	212	108	530	177	215	585	95
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	104	1504	88	221	1328	0	108	707	0	215	585	95
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5052	0	1805	3482	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.9	34.9	6.5	14.7	31.5	0.0	7.2	24.4	0.0	14.3	19.4	7.1
Adj Reference Time (s)	11.4	39.4	11.0	19.2	36.0	0.0	11.7	28.9	0.0	18.8	23.9	11.6
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1684		120	1741		120	1809	
Reference Time A (s)	103.7	34.9		220.4	31.5		107.7	24.4		214.4	19.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		103.7			220.4			107.7			214.4	
Adj Reference Time (s)		108.2			224.9			112.2			218.9	
Split Option												
Ref Time Combined (s)	6.9	34.9		14.7	31.5		7.2	24.4		14.3	19.4	
Ref Time Seperate (s)	6.9	34.9		14.7	26.5		7.2	18.3		14.3	19.4	
Reference Time (s)	34.9	34.9		31.5	31.5		24.4	24.4		19.4	19.4	
Adj Reference Time (s)	39.4	39.4		36.0	36.0		28.9	28.9		23.9	23.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	58.6		47.7									
Permitted Option (s)	224.9		218.9									
Split Option (s)	75.4		52.8									
Minimum (s)	58.6		47.7		106.2							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.0		11.6									
Cross Thru Ref Time (s)	23.9		36.0									
Oncoming Left Ref Time (s)	19.2		11.7									
Combined (s)	54.1		59.3									
Intersection Summary												
Intersection Capacity Utilization			88.5%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↗↗		↗	↗↗↗		↗	↗↗		↗	↗↗	↗
Volume (vph)	110	889	166	177	1507	134	102	368	48	113	781	228
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	110	1055	0	177	1641	0	102	416	0	113	781	228
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5053	0	1805	5112	0	1805	3555	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	7.3	25.1	0.0	11.8	38.5	0.0	6.8	14.0	0.0	7.5	25.9	16.9
Adj Reference Time (s)	11.3	29.1	0.0	15.8	42.5	0.0	10.8	18.0	0.0	11.5	29.9	20.9
Permitted Option												
Adj Saturation A (vph)	120	1684		120	1704		120	1777		120	1809	
Reference Time A (s)	109.7	25.1		176.5	38.5		101.7	14.0		112.7	25.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		109.7			176.5			101.7			112.7	
Adj Reference Time (s)		113.7			180.5			105.7			116.7	
Split Option												
Ref Time Combined (s)	7.3	25.1		11.8	38.5		6.8	14.0		7.5	25.9	
Ref Time Seperate (s)	7.3	21.1		11.8	35.4		6.8	12.4		7.5	25.9	
Reference Time (s)	25.1	25.1		38.5	38.5		14.0	14.0		25.9	25.9	
Adj Reference Time (s)	29.1	29.1		42.5	42.5		18.0	18.0		29.9	29.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	53.8		40.7									
Permitted Option (s)	180.5		116.7									
Split Option (s)	71.6		47.9									
Minimum (s)	53.8		40.7		94.5							
Right Turns												
	SBR											
Adj Reference Time (s)	20.9											
Cross Thru Ref Time (s)	42.5											
Oncoming Left Ref Time (s)	10.8											
Combined (s)	74.2											
Intersection Summary												
Intersection Capacity Utilization			78.8%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

05/07/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	393	288	594	1013	28
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	4	393	288	594	1041	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3603	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)		29.2	19.1	19.7	34.7	0.0
Adj Reference Time (s)		33.2	23.1	23.7	38.7	0.0
Permitted Option						
Adj Saturation A (vph)	120		120	1809	1802	
Reference Time A (s)	4.0		287.2	19.7	34.7	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)				287.2	34.7	
Adj Reference Time (s)				291.2	38.7	
Split Option						
Ref Time Combined (s)	0.3		19.1	19.7	34.7	
Ref Time Seperate (s)	0.3		19.1	19.7	33.7	
Reference Time (s)	0.3		19.7	19.7	34.7	
Adj Reference Time (s)	8.0		23.7	23.7	38.7	
Summary						
	EB		NB SB		Combined	
Protected Option (s)	NA		61.8			
Permitted Option (s)	Err		291.2			
Split Option (s)	8.0		62.4			
Minimum (s)	8.0		61.8		69.8	
Right Turns						
	EBR					
Adj Reference Time (s)	33.2					
Cross Thru Ref Time (s)	38.7					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	71.9					
Intersection Summary						
Intersection Capacity Utilization		59.9%		ICU Level of Service		B
Reference Times and Phasing Options do not represent an optimized timing plan.						

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	44	305	168	176	519	215	119	636	123	232	1000	103	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	44	473	0	176	519	215	119	759	0	232	1103	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.99	0.85	
Saturated Flow (vph)	1805	1799	0	1805	1900	1615	1805	3530	0	1805	3567	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	2.9	31.6	0.0	11.7	32.8	16.0	7.9	25.8	0.0	15.4	37.1	0.0	
Adj Reference Time (s)	9.0	35.6	0.0	15.7	36.8	20.0	11.9	29.8	0.0	19.4	41.1	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1799		120	1900		120	1765		120	1783		
Reference Time A (s)	43.9	31.6		175.5	32.8		118.7	25.8		231.4	37.1		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		43.9			175.5			118.7			231.4		
Adj Reference Time (s)		47.9			179.5			122.7			235.4		
Split Option													
Ref Time Combined (s)	2.9	31.6		11.7	32.8		7.9	25.8		15.4	37.1		
Ref Time Seperate (s)	2.9	20.3		11.7	32.8		7.9	21.6		15.4	33.6		
Reference Time (s)	31.6	31.6		32.8	32.8		25.8	25.8		37.1	37.1		
Adj Reference Time (s)	35.6	35.6		36.8	36.8		29.8	29.8		41.1	41.1		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	51.3		53.0										
Permitted Option (s)	179.5		235.4										
Split Option (s)	72.3		70.9										
Minimum (s)	51.3		53.0		104.3								
Right Turns													
	WBR												
Adj Reference Time (s)	20.0												
Cross Thru Ref Time (s)	29.8												
Oncoming Left Ref Time (s)	9.0												
Combined (s)	58.8												
Intersection Summary													
Intersection Capacity Utilization			86.9%		ICU Level of Service						E		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	250	777	164	55	1177	197	118	625	75	56	908	239
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	250	777	164	55	1177	197	118	700	0	56	1147	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3559	0	1805	3505	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	16.6	18.0	12.2	3.7	27.3	14.6	7.8	23.6	0.0	3.7	39.3	0.0
Adj Reference Time (s)	20.6	22.0	16.2	9.0	31.3	18.6	11.8	27.6	0.0	9.0	43.3	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1780		120	1752	
Reference Time A (s)	249.3	18.0		54.8	27.3		117.7	23.6		55.8	39.3	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		249.3			54.8			117.7			55.8	
Adj Reference Time (s)		253.3			58.8			121.7			59.8	
Split Option												
Ref Time Combined (s)	16.6	18.0		3.7	27.3		7.8	23.6		3.7	39.3	
Ref Time Seperate (s)	16.6	18.0		3.7	27.3		7.8	21.1		3.7	31.1	
Reference Time (s)	18.0	18.0		27.3	27.3		23.6	23.6		39.3	39.3	
Adj Reference Time (s)	22.0	22.0		31.3	31.3		27.6	27.6		43.3	43.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.9		55.1									
Permitted Option (s)	253.3		121.7									
Split Option (s)	53.3		70.9									
Minimum (s)	51.9		55.1		107.0							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	16.2		18.6									
Cross Thru Ref Time (s)	43.3		27.6									
Oncoming Left Ref Time (s)	9.0		20.6									
Combined (s)	68.5		66.9									
Intersection Summary												
Intersection Capacity Utilization			89.2%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 7: Greenleaf Avenue & Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕↕↕		↖	↕↕↕		↖	↕	↗	↖	↕	↗
Volume (vph)	37	867	132	122	1535	104	112	175	69	126	346	151
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	37	999	0	122	1639	0	112	175	69	126	346	151
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5073	0	1805	5126	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	2.5	23.6	0.0	8.1	38.4	0.0	7.4	11.1	5.1	8.4	21.9	11.2
Adj Reference Time (s)	9.0	27.6	0.0	12.1	42.4	0.0	11.4	15.1	9.1	12.4	25.9	15.2
Permitted Option												
Adj Saturation A (vph)	120	1691		120	1709		120	1900		120	1900	
Reference Time A (s)	36.9	23.6		121.7	38.4		111.7	11.1		125.7	21.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		36.9			121.7			111.7			125.7	
Adj Reference Time (s)		40.9			125.7			115.7			129.7	
Split Option												
Ref Time Combined (s)	2.5	23.6		8.1	38.4		7.4	11.1		8.4	21.9	
Ref Time Seperate (s)	2.5	20.5		8.1	35.9		7.4	11.1		8.4	21.9	
Reference Time (s)	23.6	23.6		38.4	38.4		11.1	11.1		21.9	21.9	
Adj Reference Time (s)	27.6	27.6		42.4	42.4		15.1	15.1		25.9	25.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.4		37.3									
Permitted Option (s)	125.7		129.7									
Split Option (s)	70.0		40.9									
Minimum (s)	51.4		37.3		88.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	9.1		15.2									
Cross Thru Ref Time (s)	27.6		42.4									
Oncoming Left Ref Time (s)	12.4		11.4									
Combined (s)	49.1		69.0									
Intersection Summary												
Intersection Capacity Utilization			73.9%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Volume (vph)	7	2	5	69	6	82	26	361	27	54	605	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	14	0	0	157	0	26	388	0	54	618	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.90	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1753	0	0	1713	0	1805	1880	0	1805	1894	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	1.7	24.8	0.0	3.6	39.2	0.0
Adj Reference Time (s)			0.0			0.0	9.0	28.8	0.0	9.0	43.2	0.0
Permitted Option												
Adj Saturation A (vph)	0	1306		0	1431		120	1880		120	1894	
Reference Time A (s)	0.0	1.3		0.0	13.2		25.9	24.8		53.9	39.2	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	8.5	9.0		12.6	19.0		NA	NA		NA	NA	
Reference Time (s)		1.3			13.2			25.9			53.9	
Adj Reference Time (s)		9.0			17.2			29.9			57.9	
Split Option												
Ref Time Combined (s)	0.0	1.0		0.0	11.0		1.7	24.8		3.6	39.2	
Ref Time Seperate (s)	0.5	0.1		4.6	0.4		1.7	23.0		3.6	38.3	
Reference Time (s)	1.0	1.0		11.0	11.0		24.8	24.8		39.2	39.2	
Adj Reference Time (s)	9.0	9.0		15.0	15.0		28.8	28.8		43.2	43.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		52.2									
Permitted Option (s)	17.2		57.9									
Split Option (s)	24.0		71.9									
Minimum (s)	17.2		52.2		69.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			57.8%		ICU Level of Service						B	
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

05/07/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	R
Volume (vph)	17	24	375	13	37	548
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	41	0	388	0	37	548
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.89	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1697	0	1890	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	24.6	0.0	2.5	34.6
Adj Reference Time (s)		0.0	28.6	0.0	8.0	38.6
Permitted Option						
Adj Saturation A (vph)	113		1890		120	1900
Reference Time A (s)	43.5		24.6		36.9	34.6
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			24.6			36.9
Adj Reference Time (s)			28.6			40.9
Split Option						
Ref Time Combined (s)	2.9		24.6		2.5	34.6
Ref Time Seperate (s)	1.2		23.8		2.5	34.6
Reference Time (s)	2.9		24.6		34.6	34.6
Adj Reference Time (s)	8.0		28.6		38.6	38.6
Summary						
	WB		NB SB		Combined	
Protected Option (s)	NA		38.6			
Permitted Option (s)	Err		40.9			
Split Option (s)	8.0		67.2			
Minimum (s)	8.0		38.6		46.6	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			38.8%		ICU Level of Service	A
Reference Times and Phasing Options do not represent an optimized timing plan.						



# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	299	193	44	521	68	213	240	30	74	303	193
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	58	492	0	44	589	0	213	270	0	74	496	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	0.94	0.85
Saturated Flow (vph)	1805	1788	0	1805	1867	0	1805	1868	0	1805	1789	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	3.9	33.0	0.0	2.9	37.9	0.0	14.2	17.3	0.0	4.9	33.3	0.0
Adj Reference Time (s)	9.0	37.0	0.0	9.0	41.9	0.0	18.2	21.3	0.0	9.0	37.3	0.0
Permitted Option												
Adj Saturation A (vph)	120	1788		120	1867		120	1868		120	1789	
Reference Time A (s)	57.8	33.0		43.9	37.9		212.4	17.3		73.8	33.3	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		57.8			43.9			212.4			73.8	
Adj Reference Time (s)		61.8			47.9			216.4			77.8	
Split Option												
Ref Time Combined (s)	3.9	33.0		2.9	37.9		14.2	17.3		4.9	33.3	
Ref Time Seperate (s)	3.9	20.1		2.9	33.5		14.2	15.4		4.9	20.3	
Reference Time (s)	33.0	33.0		37.9	37.9		17.3	17.3		33.3	33.3	
Adj Reference Time (s)	37.0	37.0		41.9	41.9		21.3	21.3		37.3	37.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.9		55.4									
Permitted Option (s)	61.8		216.4									
Split Option (s)	78.9		58.6									
Minimum (s)	50.9		55.4		106.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			88.6%		ICU Level of Service				E			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑			
Volume (vph)	90	587	171	69	1246	59	158	370	35	42	438	54		
Pedestrians														
Ped Button														
Pedestrian Timing (s)														
Free Right			No			No			No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0		
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120		
Volume Combined (vph)	90	758	0	69	1305	0	158	405	0	42	492	0		
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85		
Saturated Flow (vph)	1805	5000	0	1805	5141	0	1805	3571	0	1805	3558	0		
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00			
Protected Option Allowed		Yes			Yes			Yes			Yes			
Reference Time (s)	6.0	18.2	0.0	4.6	30.5	0.0	10.5	13.6	0.0	2.8	16.6	0.0		
Adj Reference Time (s)	10.0	22.2	0.0	9.0	34.5	0.0	14.5	17.6	0.0	9.0	20.6	0.0		
Permitted Option														
Adj Saturation A (vph)	120	1667		120	1714		120	1785		120	1779			
Reference Time A (s)	89.8	18.2		68.8	30.5		157.6	13.6		41.9	16.6			
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA			
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA			
Reference Time (s)		89.8			68.8			157.6			41.9			
Adj Reference Time (s)		93.8			72.8			161.6			45.9			
Split Option														
Ref Time Combined (s)	6.0	18.2		4.6	30.5		10.5	13.6		2.8	16.6			
Ref Time Seperate (s)	6.0	14.1		4.6	29.1		10.5	12.4		2.8	14.8			
Reference Time (s)	18.2	18.2		30.5	30.5		13.6	13.6		16.6	16.6			
Adj Reference Time (s)	22.2	22.2		34.5	34.5		17.6	17.6		20.6	20.6			
Summary														
	EB WB		NB SB		Combined									
Protected Option (s)	44.4		35.1											
Permitted Option (s)	93.8		161.6											
Split Option (s)	56.7		38.2											
Minimum (s)	44.4		35.1		79.5									
Right Turns														
Adj Reference Time (s)														
Cross Thru Ref Time (s)														
Oncoming Left Ref Time (s)														
Combined (s)														
Intersection Summary														
Intersection Capacity Utilization			66.3%			ICU Level of Service			C					
Reference Times and Phasing Options do not represent an optimized timing plan.														

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	29	205	103	132	423	222	123	773	110	112	580	75
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	29	308	0	132	645	0	123	883	0	112	655	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.98	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	3436	0	1805	3431	0	1805	3550	0	1805	3555	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	1.9	10.8	0.0	8.8	22.6	0.0	8.2	29.8	0.0	7.4	22.1	0.0
Adj Reference Time (s)	9.5	15.3	0.0	13.3	27.1	0.0	12.7	34.3	0.0	11.9	26.6	0.0
Permitted Option												
Adj Saturation A (vph)	120	1718		120	1715		120	1775		120	1778	
Reference Time A (s)	28.9	10.8		131.6	22.6		122.7	29.8		111.7	22.1	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		28.9			131.6			122.7			111.7	
Adj Reference Time (s)		33.4			136.1			127.2			116.2	
Split Option												
Ref Time Combined (s)	1.9	10.8		8.8	22.6		8.2	29.8		7.4	22.1	
Ref Time Seperate (s)	1.9	7.2		8.8	14.8		8.2	26.1		7.4	19.6	
Reference Time (s)	10.8	10.8		22.6	22.6		29.8	29.8		22.1	22.1	
Adj Reference Time (s)	15.3	15.3		27.1	27.1		34.3	34.3		26.6	26.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.6		46.3									
Permitted Option (s)	136.1		127.2									
Split Option (s)	42.3		61.0									
Minimum (s)	36.6		46.3		82.9							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			69.0%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷↷↷	↷	↶	↷↷↷		↶	↷↷		↶	↷↷	↷
Volume (vph)	106	1279	90	122	1316	166	163	721	286	185	497	124
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	106	1279	90	122	1482	0	163	1007	0	185	497	124
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5089	0	1805	3463	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	7.0	29.7	6.7	8.1	34.9	0.0	10.8	34.9	0.0	12.3	16.5	9.2
Adj Reference Time (s)	11.5	34.2	11.2	12.6	39.4	0.0	15.3	39.4	0.0	16.8	21.0	13.7
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1696		120	1732		120	1809	
Reference Time A (s)	105.7	29.7		121.7	34.9		162.5	34.9		184.5	16.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		105.7			121.7			162.5			184.5	
Adj Reference Time (s)		110.2			126.2			167.0			189.0	
Split Option												
Ref Time Combined (s)	7.0	29.7		8.1	34.9		10.8	34.9		12.3	16.5	
Ref Time Seperate (s)	7.0	29.7		8.1	31.0		10.8	25.0		12.3	16.5	
Reference Time (s)	29.7	29.7		34.9	34.9		34.9	34.9		16.5	16.5	
Adj Reference Time (s)	34.2	34.2		39.4	39.4		39.4	39.4		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.0		56.2									
Permitted Option (s)	126.2		189.0									
Split Option (s)	73.6		60.4									
Minimum (s)	51.0		56.2		107.2							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.2		13.7									
Cross Thru Ref Time (s)	21.0		39.4									
Oncoming Left Ref Time (s)	12.6		15.3									
Combined (s)	44.8		68.5									
Intersection Summary												
Intersection Capacity Utilization			89.3%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑	↗
Volume (vph)	171	1449	122	104	801	126	133	727	178	114	512	135
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	171	1571	0	104	927	0	133	905	0	114	512	135
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	0.97	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5115	0	1805	5070	0	1805	3511	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	11.4	36.9	0.0	6.9	21.9	0.0	8.8	30.9	0.0	7.6	17.0	10.0
Adj Reference Time (s)	15.4	40.9	0.0	10.9	25.9	0.0	12.8	34.9	0.0	11.6	21.0	14.0
Permitted Option												
Adj Saturation A (vph)	120	1705		120	1690		120	1755		120	1809	
Reference Time A (s)	170.5	36.9		103.7	21.9		132.6	30.9		113.7	17.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		170.5			103.7			132.6			113.7	
Adj Reference Time (s)		174.5			107.7			136.6			117.7	
Split Option												
Ref Time Combined (s)	11.4	36.9		6.9	21.9		8.8	30.9		7.6	17.0	
Ref Time Seperate (s)	11.4	34.0		6.9	19.0		8.8	24.8		7.6	17.0	
Reference Time (s)	36.9	36.9		21.9	21.9		30.9	30.9		17.0	17.0	
Adj Reference Time (s)	40.9	40.9		25.9	25.9		34.9	34.9		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.8		46.5									
Permitted Option (s)	174.5		136.6									
Split Option (s)	66.8		55.9									
Minimum (s)	51.8		46.5		98.3							
Right Turns												
	SBR											
Adj Reference Time (s)	14.0											
Cross Thru Ref Time (s)	25.9											
Oncoming Left Ref Time (s)	12.8											
Combined (s)	52.8											
Intersection Summary												
Intersection Capacity Utilization			81.9%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

05/07/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	315	388	969	692	17
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	19	315	388	969	709	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3605	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)		23.4	25.8	32.1	23.6	0.0
Adj Reference Time (s)		27.4	29.8	36.1	27.6	0.0
Permitted Option						
Adj Saturation A (vph)	120		120	1809	1802	
Reference Time A (s)	18.9		386.9	32.1	23.6	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)				386.9	23.6	
Adj Reference Time (s)				390.9	27.6	
Split Option						
Ref Time Combined (s)	1.3		25.8	32.1	23.6	
Ref Time Seperate (s)	1.3		25.8	32.1	23.0	
Reference Time (s)	1.3		32.1	32.1	23.6	
Adj Reference Time (s)	8.0		36.1	36.1	27.6	
Summary						
	EB		NB SB		Combined	
Protected Option (s)	NA		57.4			
Permitted Option (s)	Err		390.9			
Split Option (s)	8.0		63.7			
Minimum (s)	8.0		57.4		65.4	
Right Turns						
	EBR					
Adj Reference Time (s)	27.4					
Cross Thru Ref Time (s)	27.6					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	55.0					

### Intersection Summary

Intersection Capacity Utilization 54.5% ICU Level of Service A  
 Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↖	↗	↗	↕		↗	↖	
Volume (vph)	74	446	95	121	483	280	130	978	91	183	739	92
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	74	541	0	121	483	280	130	1069	0	183	831	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	1850	0	1805	1900	1615	1805	3571	0	1805	3558	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	4.9	35.1	0.0	8.0	30.5	20.8	8.6	35.9	0.0	12.2	28.0	0.0
Adj Reference Time (s)	9.0	39.1	0.0	12.0	34.5	24.8	12.6	39.9	0.0	16.2	32.0	0.0
Permitted Option												
Adj Saturation A (vph)	120	1850		120	1900		120	1786		120	1779	
Reference Time A (s)	73.8	35.1		120.7	30.5		129.6	35.9		182.5	28.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		73.8			120.7			129.6			182.5	
Adj Reference Time (s)		77.8			124.7			133.6			186.5	
Split Option												
Ref Time Combined (s)	4.9	35.1		8.0	30.5		8.6	35.9		12.2	28.0	
Ref Time Seperate (s)	4.9	28.9		8.0	30.5		8.6	32.9		12.2	24.9	
Reference Time (s)	35.1	35.1		30.5	30.5		35.9	35.9		28.0	28.0	
Adj Reference Time (s)	39.1	39.1		34.5	34.5		39.9	39.9		32.0	32.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.1		56.1									
Permitted Option (s)	124.7		186.5									
Split Option (s)	73.6		71.9									
Minimum (s)	51.1		56.1		107.2							
Right Turns												
	WBR											
Adj Reference Time (s)	24.8											
Cross Thru Ref Time (s)	39.9											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	73.7											
Intersection Summary												
Intersection Capacity Utilization			89.4%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	177	1213	127	52	777	80	98	811	82	127	745	268
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	177	1213	127	52	777	80	98	893	0	127	1013	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3568	0	1805	3474	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	11.8	28.1	9.4	3.5	18.0	5.9	6.5	30.0	0.0	8.4	35.0	0.0
Adj Reference Time (s)	15.8	32.1	13.4	9.0	22.0	9.9	10.5	34.0	0.0	12.4	39.0	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1784		120	1737	
Reference Time A (s)	176.5	28.1		51.9	18.0		97.7	30.0		126.6	35.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		176.5			51.9			97.7			126.6	
Adj Reference Time (s)		180.5			55.9			101.7			130.6	
Split Option												
Ref Time Combined (s)	11.8	28.1		3.5	18.0		6.5	30.0		8.4	35.0	
Ref Time Seperate (s)	11.8	28.1		3.5	18.0		6.5	27.3		8.4	25.7	
Reference Time (s)	28.1	28.1		18.0	18.0		30.0	30.0		35.0	35.0	
Adj Reference Time (s)	32.1	32.1		22.0	22.0		34.0	34.0		39.0	39.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	41.1		49.5									
Permitted Option (s)	180.5		130.6									
Split Option (s)	54.1		73.0									
Minimum (s)	41.1		49.5		90.6							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	13.4		9.9									
Cross Thru Ref Time (s)	39.0		34.0									
Oncoming Left Ref Time (s)	9.0		15.8									
Combined (s)	61.4		59.7									
Intersection Summary												
Intersection Capacity Utilization			75.5%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 7: Greenleaf Avenue & Mulberry Drive

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑	↗	↗	↑	↗
Volume (vph)	98	1591	75	38	832	96	128	320	145	111	246	77
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	98	1666	0	38	928	0	128	320	145	111	246	77
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5141	0	1805	5095	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.5	38.9	0.0	2.5	21.9	0.0	8.5	20.2	10.8	7.4	15.5	5.7
Adj Reference Time (s)	10.5	42.9	0.0	9.0	25.9	0.0	12.5	24.2	14.8	11.4	19.5	9.7
Permitted Option												
Adj Saturation A (vph)	120	1714		120	1698		120	1900		120	1900	
Reference Time A (s)	97.7	38.9		37.9	21.9		127.6	20.2		110.7	15.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		97.7			37.9			127.6			110.7	
Adj Reference Time (s)		101.7			41.9			131.6			114.7	
Split Option												
Ref Time Combined (s)	6.5	38.9		2.5	21.9		8.5	20.2		7.4	15.5	
Ref Time Seperate (s)	6.5	37.1		2.5	19.6		8.5	20.2		7.4	15.5	
Reference Time (s)	38.9	38.9		21.9	21.9		20.2	20.2		15.5	15.5	
Adj Reference Time (s)	42.9	42.9		25.9	25.9		24.2	24.2		19.5	19.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.9		35.6									
Permitted Option (s)	101.7		131.6									
Split Option (s)	68.7		43.7									
Minimum (s)	51.9		35.6		87.5							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.8		9.7									
Cross Thru Ref Time (s)	42.9		25.9									
Oncoming Left Ref Time (s)	11.4		12.5									
Combined (s)	69.0		48.1									
Intersection Summary												
Intersection Capacity Utilization			72.9%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	17	5	13	14	5	75	8	458	26	86	375	10
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	35	0	0	94	0	8	484	0	86	385	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.87	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1751	0	0	1660	0	1805	1885	0	1805	1893	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	0.5	30.8	0.0	5.7	24.4	0.0
Adj Reference Time (s)			0.0			0.0	9.0	34.8	0.0	9.7	28.4	0.0
Permitted Option												
Adj Saturation A (vph)	0	696		0	1619		120	1885		120	1893	
Reference Time A (s)	0.0	6.0		0.0	7.0		8.0	30.8		85.8	24.4	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	9.1	10.4		8.9	14.8		NA	NA		NA	NA	
Reference Time (s)		6.0			7.0			30.8			85.8	
Adj Reference Time (s)		10.0			11.0			34.8			89.8	
Split Option												
Ref Time Combined (s)	0.0	2.4		0.0	6.8		0.5	30.8		5.7	24.4	
Ref Time Seperate (s)	1.1	0.4		0.9	0.4		0.5	29.2		5.7	23.8	
Reference Time (s)	2.4	2.4		6.8	6.8		30.8	30.8		24.4	24.4	
Adj Reference Time (s)	9.0	9.0		10.8	10.8		34.8	34.8		28.4	28.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		44.5									
Permitted Option (s)	11.0		89.8									
Split Option (s)	19.8		63.2									
Minimum (s)	11.0		44.5		55.5							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			46.2%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
9: Greenleaf Avenue & Barton Road

05/07/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	18	482	29	16	404
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	22	0	511	0	16	404
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.87	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1652	0	1884	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	32.6	0.0	1.1	25.5
Adj Reference Time (s)		0.0	36.6	0.0	8.0	29.5
Permitted Option						
Adj Saturation A (vph)	110		1884		120	1900
Reference Time A (s)	24.0		32.6		16.0	25.5
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			32.6			25.5
Adj Reference Time (s)			36.6			29.5
Split Option						
Ref Time Combined (s)	1.6		32.6		1.1	25.5
Ref Time Seperate (s)	0.3		30.7		1.1	25.5
Reference Time (s)	1.6		32.6		25.5	25.5
Adj Reference Time (s)	8.0		36.6		29.5	29.5
Summary						
	WB		NB SB		Combined	
Protected Option (s)	NA		44.6			
Permitted Option (s)	Err		36.6			
Split Option (s)	8.0		66.1			
Minimum (s)	8.0		36.6		44.6	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			37.1%		ICU Level of Service	A
Reference Times and Phasing Options do not represent an optimized timing plan.						

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	→	↘	↖	→	↘	↖	→	↘	↖	→	↘
Volume (vph)	97	425	222	31	464	110	251	307	20	75	248	79
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	97	647	0	31	574	0	251	327	0	75	327	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1805	1802	0	1805	1845	0	1805	1883	0	1805	1831	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	6.4	43.1	0.0	2.1	37.3	0.0	16.7	20.8	0.0	5.0	21.4	0.0
Adj Reference Time (s)	10.4	47.1	0.0	9.0	41.3	0.0	20.7	24.8	0.0	9.0	25.4	0.0
Permitted Option												
Adj Saturation A (vph)	120	1802		120	1845		120	1883		120	1831	
Reference Time A (s)	96.7	43.1		30.9	37.3		250.3	20.8		74.8	21.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)	96.7			37.3			250.3			74.8		
Adj Reference Time (s)	100.7			41.3			254.3			78.8		
Split Option												
Ref Time Combined (s)	6.4	43.1		2.1	37.3		16.7	20.8		5.0	21.4	
Ref Time Seperate (s)	6.4	28.3		2.1	30.2		16.7	19.6		5.0	16.3	
Reference Time (s)	43.1	43.1		37.3	37.3		20.8	20.8		21.4	21.4	
Adj Reference Time (s)	47.1	47.1		41.3	41.3		24.8	24.8		25.4	25.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	56.1		46.1									
Permitted Option (s)	100.7		254.3									
Split Option (s)	88.4		50.3									
Minimum (s)	56.1		46.1		102.2							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			85.2%		ICU Level of Service				E			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

05/07/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑	
Volume (vph)	62	1198	143	35	731	43	138	429	40	64	368	59
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	62	1341	0	35	774	0	138	469	0	64	427	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	5093	0	1805	5132	0	1805	3571	0	1805	3543	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	4.1	31.6	0.0	2.3	18.1	0.0	9.2	15.8	0.0	4.3	14.5	0.0
Adj Reference Time (s)	9.0	35.6	0.0	9.0	22.1	0.0	13.2	19.8	0.0	9.0	18.5	0.0
Permitted Option												
Adj Saturation A (vph)	120	1698		120	1711		120	1786		120	1771	
Reference Time A (s)	61.8	31.6		34.9	18.1		137.6	15.8		63.8	14.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		61.8			34.9			137.6			63.8	
Adj Reference Time (s)		65.8			38.9			141.6			67.8	
Split Option												
Ref Time Combined (s)	4.1	31.6		2.3	18.1		9.2	15.8		4.3	14.5	
Ref Time Seperate (s)	4.1	28.2		2.3	17.1		9.2	14.4		4.3	12.5	
Reference Time (s)	31.6	31.6		18.1	18.1		15.8	15.8		14.5	14.5	
Adj Reference Time (s)	35.6	35.6		22.1	22.1		19.8	19.8		18.5	18.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	44.6		31.6		76.2							
Permitted Option (s)	65.8		141.6									
Split Option (s)	57.7		38.2									
Minimum (s)	44.6		31.6		76.2							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			63.5%		ICU Level of Service		B					
Reference Times and Phasing Options do not represent an optimized timing plan.												

**Appendix G**

LOS Worksheets – Opening Year 2020 Plus Project Conditions

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Volume (vph)	49	198	168	78	236	165	61	382	79	130	764	81
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	49	366	0	78	401	0	61	461	0	130	845	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.94	0.85	0.95	0.97	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1805	3369	0	1805	3394	0	1805	3525	0	1805	3566	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	3.3	13.0	0.0	5.2	14.2	0.0	4.1	15.7	0.0	8.6	28.4	0.0
Adj Reference Time (s)	9.5	17.5	0.0	9.7	18.7	0.0	9.5	20.2	0.0	13.1	32.9	0.0
Permitted Option												
Adj Saturation A (vph)	120	1684		120	1697		120	1762		120	1783	
Reference Time A (s)	48.9	13.0		77.8	14.2		60.8	15.7		129.6	28.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		48.9			77.8			60.8			129.6	
Adj Reference Time (s)		53.4			82.3			65.3			134.1	
Split Option												
Ref Time Combined (s)	3.3	13.0		5.2	14.2		4.1	15.7		8.6	28.4	
Ref Time Seperate (s)	3.3	7.1		5.2	8.3		4.1	13.0		8.6	25.7	
Reference Time (s)	13.0	13.0		14.2	14.2		15.7	15.7		28.4	28.4	
Adj Reference Time (s)	17.5	17.5		18.7	18.7		20.2	20.2		32.9	32.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.2		42.4									
Permitted Option (s)	82.3		134.1									
Split Option (s)	36.2		53.1									
Minimum (s)	28.2		42.4		70.6							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			58.8%		ICU Level of Service						B	
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷↷↷	↷	↶	↷↷↷		↶	↷↷		↶	↷↷	↷
Volume (vph)	104	1525	88	221	1122	212	108	530	177	215	585	95
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	104	1525	88	221	1334	0	108	707	0	215	585	95
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5052	0	1805	3482	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.9	35.4	6.5	14.7	31.7	0.0	7.2	24.4	0.0	14.3	19.4	7.1
Adj Reference Time (s)	11.4	39.9	11.0	19.2	36.2	0.0	11.7	28.9	0.0	18.8	23.9	11.6
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1684		120	1741		120	1809	
Reference Time A (s)	103.7	35.4		220.4	31.7		107.7	24.4		214.4	19.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		103.7			220.4			107.7			214.4	
Adj Reference Time (s)		108.2			224.9			112.2			218.9	
Split Option												
Ref Time Combined (s)	6.9	35.4		14.7	31.7		7.2	24.4		14.3	19.4	
Ref Time Seperate (s)	6.9	35.4		14.7	26.6		7.2	18.3		14.3	19.4	
Reference Time (s)	35.4	35.4		31.7	31.7		24.4	24.4		19.4	19.4	
Adj Reference Time (s)	39.9	39.9		36.2	36.2		28.9	28.9		23.9	23.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	59.1		47.7									
Permitted Option (s)	224.9		218.9									
Split Option (s)	76.0		52.8									
Minimum (s)	59.1		47.7		106.7							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.0		11.6									
Cross Thru Ref Time (s)	23.9		36.2									
Oncoming Left Ref Time (s)	19.2		11.7									
Combined (s)	54.1		59.4									
Intersection Summary												
Intersection Capacity Utilization			88.9%		ICU Level of Service				E			
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↗↗		↗	↗↗↗		↗	↗↗		↗	↗↗	↗
Volume (vph)	110	889	174	179	1507	134	104	368	48	113	781	228
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	110	1063	0	179	1641	0	104	416	0	113	781	228
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5049	0	1805	5112	0	1805	3555	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	7.3	25.3	0.0	11.9	38.5	0.0	6.9	14.0	0.0	7.5	25.9	16.9
Adj Reference Time (s)	11.3	29.3	0.0	15.9	42.5	0.0	10.9	18.0	0.0	11.5	29.9	20.9
Permitted Option												
Adj Saturation A (vph)	120	1683		120	1704		120	1777		120	1809	
Reference Time A (s)	109.7	25.3		178.5	38.5		103.7	14.0		112.7	25.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		109.7			178.5			103.7			112.7	
Adj Reference Time (s)		113.7			182.5			107.7			116.7	
Split Option												
Ref Time Combined (s)	7.3	25.3		11.9	38.5		6.9	14.0		7.5	25.9	
Ref Time Seperate (s)	7.3	21.1		11.9	35.4		6.9	12.4		7.5	25.9	
Reference Time (s)	25.3	25.3		38.5	38.5		14.0	14.0		25.9	25.9	
Adj Reference Time (s)	29.3	29.3		42.5	42.5		18.0	18.0		29.9	29.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	53.8		40.8									
Permitted Option (s)	182.5		116.7									
Split Option (s)	71.8		47.9									
Minimum (s)	53.8		40.8		94.7							
Right Turns												
	SBR											
Adj Reference Time (s)	20.9											
Cross Thru Ref Time (s)	42.5											
Oncoming Left Ref Time (s)	10.9											
Combined (s)	74.4											
Intersection Summary												
Intersection Capacity Utilization			78.9%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

09/17/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	4	393	288	596	1023	28
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	4	393	288	596	1051	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3603	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)		29.2	19.1	19.8	35.0	0.0
Adj Reference Time (s)		33.2	23.1	23.8	39.0	0.0
Permitted Option						
Adj Saturation A (vph)	120		120	1809	1802	
Reference Time A (s)	4.0		287.2	19.8	35.0	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)				287.2	35.0	
Adj Reference Time (s)				291.2	39.0	
Split Option						
Ref Time Combined (s)	0.3		19.1	19.8	35.0	
Ref Time Seperate (s)	0.3		19.1	19.8	34.1	
Reference Time (s)	0.3		19.8	19.8	35.0	
Adj Reference Time (s)	8.0		23.8	23.8	39.0	
Summary						
	EB		NB SB		Combined	
Protected Option (s)	NA		62.1			
Permitted Option (s)	Err		291.2			
Split Option (s)	8.0		62.8			
Minimum (s)	8.0		62.1		70.1	
Right Turns						
	EBR					
Adj Reference Time (s)	33.2					
Cross Thru Ref Time (s)	39.0					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	72.2					

### Intersection Summary

Intersection Capacity Utilization 60.2% ICU Level of Service B  
 Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 5: Santa Fe Springs Road & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↗	↖	↖↗		↖	↖↗	
Volume (vph)	48	309	168	176	520	215	119	644	123	232	1002	104
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	48	477	0	176	520	215	119	767	0	232	1106	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1805	1800	0	1805	1900	1615	1805	3531	0	1805	3567	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	3.2	31.8	0.0	11.7	32.8	16.0	7.9	26.1	0.0	15.4	37.2	0.0
Adj Reference Time (s)	9.0	35.8	0.0	15.7	36.8	20.0	11.9	30.1	0.0	19.4	41.2	0.0
Permitted Option												
Adj Saturation A (vph)	120	1800		120	1900		120	1765		120	1783	
Reference Time A (s)	47.9	31.8		175.5	32.8		118.7	26.1		231.4	37.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		47.9			175.5			118.7			231.4	
Adj Reference Time (s)		51.9			179.5			122.7			235.4	
Split Option												
Ref Time Combined (s)	3.2	31.8		11.7	32.8		7.9	26.1		15.4	37.2	
Ref Time Seperate (s)	3.2	20.6		11.7	32.8		7.9	21.9		15.4	33.7	
Reference Time (s)	31.8	31.8		32.8	32.8		26.1	26.1		37.2	37.2	
Adj Reference Time (s)	35.8	35.8		36.8	36.8		30.1	30.1		41.2	41.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.5		53.1		104.6							
Permitted Option (s)	179.5		235.4									
Split Option (s)	72.6		71.3									
Minimum (s)	51.5		53.1		104.6							
Right Turns												
	WBR											
Adj Reference Time (s)	20.0											
Cross Thru Ref Time (s)	30.1											
Oncoming Left Ref Time (s)	9.0											
Combined (s)	59.0											
Intersection Summary												
Intersection Capacity Utilization			87.2%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	254	794	164	55	1182	197	118	629	75	56	909	240
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	254	794	164	55	1182	197	118	704	0	56	1149	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3560	0	1805	3504	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	16.9	18.4	12.2	3.7	27.4	14.6	7.8	23.7	0.0	3.7	39.3	0.0
Adj Reference Time (s)	20.9	22.4	16.2	9.0	31.4	18.6	11.8	27.7	0.0	9.0	43.3	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1780		120	1752	
Reference Time A (s)	253.3	18.4		54.8	27.4		117.7	23.7		55.8	39.3	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		253.3			54.8			117.7			55.8	
Adj Reference Time (s)		257.3			58.8			121.7			59.8	
Split Option												
Ref Time Combined (s)	16.9	18.4		3.7	27.4		7.8	23.7		3.7	39.3	
Ref Time Seperate (s)	16.9	18.4		3.7	27.4		7.8	21.2		3.7	31.1	
Reference Time (s)	18.4	18.4		27.4	27.4		23.7	23.7		39.3	39.3	
Adj Reference Time (s)	22.4	22.4		31.4	31.4		27.7	27.7		43.3	43.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	52.3		55.2		107.5							
Permitted Option (s)	257.3		121.7									
Split Option (s)	53.8		71.1									
Minimum (s)	52.3		55.2		107.5							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	16.2		18.6									
Cross Thru Ref Time (s)	43.3		27.7									
Oncoming Left Ref Time (s)	9.0		20.9									
Combined (s)	68.5		67.3									
Intersection Summary												
Intersection Capacity Utilization			89.6%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
7: Greenleaf Avenue & Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑	↗	↗	↑	↗
Volume (vph)	37	867	132	128	1537	104	112	175	71	126	346	151
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	37	999	0	128	1641	0	112	175	71	126	346	151
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5073	0	1805	5126	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	2.5	23.6	0.0	8.5	38.4	0.0	7.4	11.1	5.3	8.4	21.9	11.2
Adj Reference Time (s)	9.0	27.6	0.0	12.5	42.4	0.0	11.4	15.1	9.3	12.4	25.9	15.2
Permitted Option												
Adj Saturation A (vph)	120	1691		120	1709		120	1900		120	1900	
Reference Time A (s)	36.9	23.6		127.6	38.4		111.7	11.1		125.7	21.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		36.9			127.6			111.7			125.7	
Adj Reference Time (s)		40.9			131.6			115.7			129.7	
Split Option												
Ref Time Combined (s)	2.5	23.6		8.5	38.4		7.4	11.1		8.4	21.9	
Ref Time Seperate (s)	2.5	20.5		8.5	36.0		7.4	11.1		8.4	21.9	
Reference Time (s)	23.6	23.6		38.4	38.4		11.1	11.1		21.9	21.9	
Adj Reference Time (s)	27.6	27.6		42.4	42.4		15.1	15.1		25.9	25.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.4		37.3									
Permitted Option (s)	131.6		129.7									
Split Option (s)	70.0		40.9									
Minimum (s)	51.4		37.3		88.7							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	9.3		15.2									
Cross Thru Ref Time (s)	27.6		42.4									
Oncoming Left Ref Time (s)	12.4		11.4									
Combined (s)	49.3		69.1									
Intersection Summary												
Intersection Capacity Utilization			73.9%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
8: Greenleaf Avenue & Reis Street

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	7	2	5	69	6	82	26	363	27	54	611	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	14	0	0	157	0	26	390	0	54	624	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.90	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1753	0	0	1713	0	1805	1880	0	1805	1894	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	1.7	24.9	0.0	3.6	39.5	0.0
Adj Reference Time (s)			0.0			0.0	9.0	28.9	0.0	9.0	43.5	0.0
Permitted Option												
Adj Saturation A (vph)	0	1306		0	1431		120	1880		120	1894	
Reference Time A (s)	0.0	1.3		0.0	13.2		25.9	24.9		53.9	39.5	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	8.5	9.0		12.6	19.0		NA	NA		NA	NA	
Reference Time (s)		1.3			13.2			25.9			53.9	
Adj Reference Time (s)		9.0			17.2			29.9			57.9	
Split Option												
Ref Time Combined (s)	0.0	1.0		0.0	11.0		1.7	24.9		3.6	39.5	
Ref Time Seperate (s)	0.5	0.1		4.6	0.4		1.7	23.2		3.6	38.7	
Reference Time (s)	1.0	1.0		11.0	11.0		24.9	24.9		39.5	39.5	
Adj Reference Time (s)	9.0	9.0		15.0	15.0		28.9	28.9		43.5	43.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		52.5									
Permitted Option (s)	17.2		57.9									
Split Option (s)	24.0		72.4									
Minimum (s)	17.2		52.5		69.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			58.1%		ICU Level of Service						B	
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

09/17/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	24	377	13	37	554
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	41	0	390	0	37	554
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.89	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1697	0	1891	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	24.8	0.0	2.5	35.0
Adj Reference Time (s)		0.0	28.8	0.0	8.0	39.0
Permitted Option						
Adj Saturation A (vph)	113		1891		120	1900
Reference Time A (s)	43.5		24.8		36.9	35.0
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			24.8			36.9
Adj Reference Time (s)			28.8			40.9
Split Option						
Ref Time Combined (s)	2.9		24.8		2.5	35.0
Ref Time Seperate (s)	1.2		23.9		2.5	35.0
Reference Time (s)	2.9		24.8		35.0	35.0
Adj Reference Time (s)	8.0		28.8		39.0	39.0
Summary						
Protected Option (s)	NA		39.0			
Permitted Option (s)	Err		40.9			
Split Option (s)	8.0		67.7			
Minimum (s)	8.0		39.0		47.0	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						
Intersection Summary						
Intersection Capacity Utilization			39.2%		ICU Level of Service	A
Reference Times and Phasing Options do not represent an optimized timing plan.						

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗		
Volume (vph)	58	300	199	44	525	68	234	265	30	74	310	193	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	58	499	0	44	593	0	234	295	0	74	503	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	0.94	0.85	
Saturated Flow (vph)	1805	1786	0	1805	1867	0	1805	1871	0	1805	1791	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	3.9	33.5	0.0	2.9	38.1	0.0	15.6	18.9	0.0	4.9	33.7	0.0	
Adj Reference Time (s)	9.0	37.5	0.0	9.0	42.1	0.0	19.6	22.9	0.0	9.0	37.7	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1786		120	1867		120	1871		120	1791		
Reference Time A (s)	57.8	33.5		43.9	38.1		233.4	18.9		73.8	33.7		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		57.8			43.9			233.4			73.8		
Adj Reference Time (s)		61.8			47.9			237.4			77.8		
Split Option													
Ref Time Combined (s)	3.9	33.5		2.9	38.1		15.6	18.9		4.9	33.7		
Ref Time Seperate (s)	3.9	20.2		2.9	33.7		15.6	17.0		4.9	20.8		
Reference Time (s)	33.5	33.5		38.1	38.1		18.9	18.9		33.7	33.7		
Adj Reference Time (s)	37.5	37.5		42.1	42.1		22.9	22.9		37.7	37.7		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	51.1		57.3										
Permitted Option (s)	61.8		237.4										
Split Option (s)	79.6		60.6										
Minimum (s)	51.1		57.3		108.4								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			90.3%		ICU Level of Service						E		
Reference Times and Phasing Options do not represent an optimized timing plan.													



# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑		
Volume (vph)	107	587	171	69	1246	71	158	387	35	45	443	59	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	107	758	0	69	1317	0	158	422	0	45	502	0	
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85	
Saturated Flow (vph)	1805	5000	0	1805	5134	0	1805	3573	0	1805	3554	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	7.1	18.2	0.0	4.6	30.8	0.0	10.5	14.2	0.0	3.0	17.0	0.0	
Adj Reference Time (s)	11.1	22.2	0.0	9.0	34.8	0.0	14.5	18.2	0.0	9.0	21.0	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1667		120	1711		120	1786		120	1777		
Reference Time A (s)	106.7	18.2		68.8	30.8		157.6	14.2		44.9	17.0		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		106.7			68.8			157.6			44.9		
Adj Reference Time (s)		110.7			72.8			161.6			48.9		
Split Option													
Ref Time Combined (s)	7.1	18.2		4.6	30.8		10.5	14.2		3.0	17.0		
Ref Time Seperate (s)	7.1	14.1		4.6	29.1		10.5	13.0		3.0	15.0		
Reference Time (s)	18.2	18.2		30.8	30.8		14.2	14.2		17.0	17.0		
Adj Reference Time (s)	22.2	22.2		34.8	34.8		18.2	18.2		21.0	21.0		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	45.9		35.5										
Permitted Option (s)	110.7		161.6										
Split Option (s)	57.0		39.1										
Minimum (s)	45.9		35.5		81.4								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization			67.8%		ICU Level of Service						C		
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 1: Norwalk Boulevard & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Volume (vph)	29	208	103	132	431	222	123	773	110	112	580	75
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	29	311	0	132	653	0	123	883	0	112	655	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.98	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	3438	0	1805	3433	0	1805	3550	0	1805	3555	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	1.9	10.9	0.0	8.8	22.8	0.0	8.2	29.8	0.0	7.4	22.1	0.0
Adj Reference Time (s)	9.5	15.4	0.0	13.3	27.3	0.0	12.7	34.3	0.0	11.9	26.6	0.0
Permitted Option												
Adj Saturation A (vph)	120	1719		120	1717		120	1775		120	1778	
Reference Time A (s)	28.9	10.9		131.6	22.8		122.7	29.8		111.7	22.1	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		28.9			131.6			122.7			111.7	
Adj Reference Time (s)		33.4			136.1			127.2			116.2	
Split Option												
Ref Time Combined (s)	1.9	10.9		8.8	22.8		8.2	29.8		7.4	22.1	
Ref Time Seperate (s)	1.9	7.3		8.8	15.1		8.2	26.1		7.4	19.6	
Reference Time (s)	10.9	10.9		22.8	22.8		29.8	29.8		22.1	22.1	
Adj Reference Time (s)	15.4	15.4		27.3	27.3		34.3	34.3		26.6	26.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.8		46.3									
Permitted Option (s)	136.1		127.2									
Split Option (s)	42.7		61.0									
Minimum (s)	36.8		46.3		83.1							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			69.3%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 2: Norwalk Boulevard & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑		↘	↑↑		↘	↑↑	↗
Volume (vph)	106	1286	90	122	1333	166	163	721	286	185	497	124
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	106	1286	90	122	1499	0	163	1007	0	185	497	124
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5090	0	1805	3463	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	7.0	29.8	6.7	8.1	35.3	0.0	10.8	34.9	0.0	12.3	16.5	9.2
Adj Reference Time (s)	11.5	34.3	11.2	12.6	39.8	0.0	15.3	39.4	0.0	16.8	21.0	13.7
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1697		120	1732		120	1809	
Reference Time A (s)	105.7	29.8		121.7	35.3		162.5	34.9		184.5	16.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		105.7			121.7			162.5			184.5	
Adj Reference Time (s)		110.2			126.2			167.0			189.0	
Split Option												
Ref Time Combined (s)	7.0	29.8		8.1	35.3		10.8	34.9		12.3	16.5	
Ref Time Seperate (s)	7.0	29.8		8.1	31.4		10.8	25.0		12.3	16.5	
Reference Time (s)	29.8	29.8		35.3	35.3		34.9	34.9		16.5	16.5	
Adj Reference Time (s)	34.3	34.3		39.8	39.8		39.4	39.4		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.4		56.2									
Permitted Option (s)	126.2		189.0									
Split Option (s)	74.2		60.4									
Minimum (s)	51.4		56.2		107.6							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.2		13.7									
Cross Thru Ref Time (s)	21.0		39.8									
Oncoming Left Ref Time (s)	12.6		15.3									
Combined (s)	44.8		68.9									
Intersection Summary												
Intersection Capacity Utilization			89.6%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 3: Santa Fe Springs Road & Slauson Avenue/Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑	↗
Volume (vph)	171	1449	125	105	801	126	141	727	180	114	512	135
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	171	1574	0	105	927	0	141	907	0	114	512	135
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	0.97	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5114	0	1805	5070	0	1805	3510	0	1805	3618	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	11.4	36.9	0.0	7.0	21.9	0.0	9.4	31.0	0.0	7.6	17.0	10.0
Adj Reference Time (s)	15.4	40.9	0.0	11.0	25.9	0.0	13.4	35.0	0.0	11.6	21.0	14.0
Permitted Option												
Adj Saturation A (vph)	120	1705		120	1690		120	1755		120	1809	
Reference Time A (s)	170.5	36.9		104.7	21.9		140.6	31.0		113.7	17.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		170.5			104.7			140.6			113.7	
Adj Reference Time (s)		174.5			108.7			144.6			117.7	
Split Option												
Ref Time Combined (s)	11.4	36.9		7.0	21.9		9.4	31.0		7.6	17.0	
Ref Time Seperate (s)	11.4	34.0		7.0	19.0		9.4	24.9		7.6	17.0	
Reference Time (s)	36.9	36.9		21.9	21.9		31.0	31.0		17.0	17.0	
Adj Reference Time (s)	40.9	40.9		25.9	25.9		35.0	35.0		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.9		46.6									
Permitted Option (s)	174.5		144.6									
Split Option (s)	66.9		56.0									
Minimum (s)	51.9		46.6		98.5							
Right Turns												
	SBR											
Adj Reference Time (s)	14.0											
Cross Thru Ref Time (s)	25.9											
Oncoming Left Ref Time (s)	13.4											
Combined (s)	53.3											
Intersection Summary												
Intersection Capacity Utilization			82.1%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 4: Santa Fe Springs Road & Sorensen Avenue

09/17/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	315	388	979	696	17
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	19	315	388	979	713	0
Lane Utilization Factor	1.00	1.00	1.00	0.95	0.95	1.00
Turning Factor (vph)	0.95	0.85	0.95	1.00	1.00	0.85
Saturated Flow (vph)	1805	1615	1805	3618	3605	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	No			Yes	Yes	
Reference Time (s)	23.4		25.8	32.5	23.7	0.0
Adj Reference Time (s)	27.4		29.8	36.5	27.7	0.0
Permitted Option						
Adj Saturation A (vph)	120	120		1809	1802	
Reference Time A (s)	18.9	386.9		32.5	23.7	
Adj Saturation B (vph)	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA	
Reference Time (s)				386.9	23.7	
Adj Reference Time (s)				390.9	27.7	
Split Option						
Ref Time Combined (s)	1.3	25.8		32.5	23.7	
Ref Time Seperate (s)	1.3	25.8		32.5	23.2	
Reference Time (s)	1.3	32.5		32.5	23.7	
Adj Reference Time (s)	8.0	36.5		36.5	27.7	
Summary						
	EB	NB SB		Combined		
Protected Option (s)	NA	57.5				
Permitted Option (s)	Err	390.9				
Split Option (s)	8.0	64.2				
Minimum (s)	8.0	57.5		65.5		
Right Turns						
	EBR					
Adj Reference Time (s)	27.4					
Cross Thru Ref Time (s)	27.7					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	55.1					

### Intersection Summary

Intersection Capacity Utilization 54.6% ICU Level of Service A  
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization  
5: Santa Fe Springs Road & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↗	↖	↖↗		↖	↖↗	
Volume (vph)	76	448	95	121	487	280	130	981	91	183	746	96
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	76	543	0	121	487	280	130	1072	0	183	842	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	1850	0	1805	1900	1615	1805	3572	0	1805	3556	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	5.1	35.2	0.0	8.0	30.8	20.8	8.6	36.0	0.0	12.2	28.4	0.0
Adj Reference Time (s)	9.1	39.2	0.0	12.0	34.8	24.8	12.6	40.0	0.0	16.2	32.4	0.0
Permitted Option												
Adj Saturation A (vph)	120	1850		120	1900		120	1786		120	1778	
Reference Time A (s)	75.8	35.2		120.7	30.8		129.6	36.0		182.5	28.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		75.8			120.7			129.6			182.5	
Adj Reference Time (s)		79.8			124.7			133.6			186.5	
Split Option												
Ref Time Combined (s)	5.1	35.2		8.0	30.8		8.6	36.0		12.2	28.4	
Ref Time Seperate (s)	5.1	29.1		8.0	30.8		8.6	33.0		12.2	25.2	
Reference Time (s)	35.2	35.2		30.8	30.8		36.0	36.0		28.4	28.4	
Adj Reference Time (s)	39.2	39.2		34.8	34.8		40.0	40.0		32.4	32.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.3		56.2									
Permitted Option (s)	124.7		186.5									
Split Option (s)	74.0		72.4									
Minimum (s)	51.3		56.2		107.4							
Right Turns												
	WBR											
Adj Reference Time (s)	24.8											
Cross Thru Ref Time (s)	40.0											
Oncoming Left Ref Time (s)	9.1											
Combined (s)	73.9											
Intersection Summary												
Intersection Capacity Utilization	89.5%		ICU Level of Service		E							
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 6: Santa Fe Springs Road & Telegraph Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑		↘	↑↑	
Volume (vph)	178	1219	127	52	791	80	98	812	82	127	749	271
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	178	1219	127	52	791	80	98	894	0	127	1020	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1805	5176	1615	1805	5176	1615	1805	3568	0	1805	3473	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	11.8	28.3	9.4	3.5	18.3	5.9	6.5	30.1	0.0	8.4	35.2	0.0
Adj Reference Time (s)	15.8	32.3	13.4	9.0	22.3	9.9	10.5	34.1	0.0	12.4	39.2	0.0
Permitted Option												
Adj Saturation A (vph)	120	1725		120	1725		120	1784		120	1737	
Reference Time A (s)	177.5	28.3		51.9	18.3		97.7	30.1		126.6	35.2	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		177.5			51.9			97.7			126.6	
Adj Reference Time (s)		181.5			55.9			101.7			130.6	
Split Option												
Ref Time Combined (s)	11.8	28.3		3.5	18.3		6.5	30.1		8.4	35.2	
Ref Time Seperate (s)	11.8	28.3		3.5	18.3		6.5	27.3		8.4	25.9	
Reference Time (s)	28.3	28.3		18.3	18.3		30.1	30.1		35.2	35.2	
Adj Reference Time (s)	32.3	32.3		22.3	22.3		34.1	34.1		39.2	39.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	41.3		49.8									
Permitted Option (s)	181.5		130.6									
Split Option (s)	54.6		73.3									
Minimum (s)	41.3		49.8		91.0							
Right Turns												
	EBR		WBR									
Adj Reference Time (s)	13.4		9.9									
Cross Thru Ref Time (s)	39.2		34.1									
Oncoming Left Ref Time (s)	9.0		15.8									
Combined (s)	61.7		59.8									
Intersection Summary												
Intersection Capacity Utilization			75.8%		ICU Level of Service		D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
7: Greenleaf Avenue & Mulberry Drive

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↕↕↕		↰	↕↕↕		↰	↕	↰	↰	↕	↰
Volume (vph)	98	1593	75	40	833	96	128	320	151	111	246	77
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	98	1668	0	40	929	0	128	320	151	111	246	77
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	5141	0	1805	5095	0	1805	1900	1615	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.5	38.9	0.0	2.7	21.9	0.0	8.5	20.2	11.2	7.4	15.5	5.7
Adj Reference Time (s)	10.5	42.9	0.0	9.0	25.9	0.0	12.5	24.2	15.2	11.4	19.5	9.7
Permitted Option												
Adj Saturation A (vph)	120	1714		120	1698		120	1900		120	1900	
Reference Time A (s)	97.7	38.9		39.9	21.9		127.6	20.2		110.7	15.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		97.7			39.9			127.6			110.7	
Adj Reference Time (s)		101.7			43.9			131.6			114.7	
Split Option												
Ref Time Combined (s)	6.5	38.9		2.7	21.9		8.5	20.2		7.4	15.5	
Ref Time Seperate (s)	6.5	37.2		2.7	19.6		8.5	20.2		7.4	15.5	
Reference Time (s)	38.9	38.9		21.9	21.9		20.2	20.2		15.5	15.5	
Adj Reference Time (s)	42.9	42.9		25.9	25.9		24.2	24.2		19.5	19.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.9		35.6									
Permitted Option (s)	101.7		131.6									
Split Option (s)	68.8		43.7									
Minimum (s)	51.9		35.6		87.5							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	15.2		9.7									
Cross Thru Ref Time (s)	42.9		25.9									
Oncoming Left Ref Time (s)	11.4		12.5									
Combined (s)	69.5		48.1									
Intersection Summary												
Intersection Capacity Utilization			72.9%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												



# Intersection Capacity Utilization

## 8: Greenleaf Avenue & Reis Street

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Volume (vph)	17	5	13	14	5	75	8	464	26	86	377	10
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	35	0	0	94	0	8	490	0	86	387	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.87	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	1751	0	0	1660	0	1805	1885	0	1805	1893	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	0.5	31.2	0.0	5.7	24.5	0.0
Adj Reference Time (s)			0.0			0.0	9.0	35.2	0.0	9.7	28.5	0.0
Permitted Option												
Adj Saturation A (vph)	0	696		0	1619		120	1885		120	1893	
Reference Time A (s)	0.0	6.0		0.0	7.0		8.0	31.2		85.8	24.5	
Adj Saturation B (vph)	0	0		0	0		NA	NA		NA	NA	
Reference Time B (s)	9.1	10.4		8.9	14.8		NA	NA		NA	NA	
Reference Time (s)		6.0			7.0			31.2			85.8	
Adj Reference Time (s)		10.0			11.0			35.2			89.8	
Split Option												
Ref Time Combined (s)	0.0	2.4		0.0	6.8		0.5	31.2		5.7	24.5	
Ref Time Seperate (s)	1.1	0.4		0.9	0.4		0.5	29.5		5.7	23.9	
Reference Time (s)	2.4	2.4		6.8	6.8		31.2	31.2		24.5	24.5	
Adj Reference Time (s)	9.0	9.0		10.8	10.8		35.2	35.2		28.5	28.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		44.9									
Permitted Option (s)	11.0		89.8									
Split Option (s)	19.8		63.7									
Minimum (s)	11.0		44.9		55.9							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			46.6%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												

# Intersection Capacity Utilization

## 9: Greenleaf Avenue & Barton Road

09/17/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	18	488	29	16	406
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	22	0	517	0	16	406
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.87	0.85	0.99	0.85	0.95	1.00
Saturated Flow (vph)	1652	0	1884	0	1805	1900
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		0.0	32.9	0.0	1.1	25.6
Adj Reference Time (s)		0.0	36.9	0.0	8.0	29.6
Permitted Option						
Adj Saturation A (vph)	110		1884		120	1900
Reference Time A (s)	24.0		32.9		16.0	25.6
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			32.9			25.6
Adj Reference Time (s)			36.9			29.6
Split Option						
Ref Time Combined (s)	1.6		32.9		1.1	25.6
Ref Time Seperate (s)	0.3		31.1		1.1	25.6
Reference Time (s)	1.6		32.9		25.6	25.6
Adj Reference Time (s)	8.0		36.9		29.6	29.6
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		44.9			
Permitted Option (s)	Err		36.9			
Split Option (s)	8.0		66.6			
Minimum (s)	8.0		36.9		44.9	
Right Turns						
Adj Reference Time (s)						
Cross Thru Ref Time (s)						
Oncoming Left Ref Time (s)						
Combined (s)						

### Intersection Summary

Intersection Capacity Utilization 37.4% ICU Level of Service A  
 Reference Times and Phasing Options do not represent an optimized timing plan.

# Intersection Capacity Utilization

## 10: Greenleaf Avenue & Los Nietos Road

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	97	429	240	31	466	110	258	316	20	75	270	79	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	97	669	0	31	576	0	258	336	0	75	349	0	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.97	0.85	
Saturated Flow (vph)	1805	1798	0	1805	1846	0	1805	1883	0	1805	1835	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes			
Reference Time (s)	6.4	44.7	0.0	2.1	37.5	0.0	17.2	21.4	0.0	5.0	22.8	0.0	
Adj Reference Time (s)	10.4	48.7	0.0	9.0	41.5	0.0	21.2	25.4	0.0	9.0	26.8	0.0	
Permitted Option													
Adj Saturation A (vph)	120	1798		120	1846		120	1883		120	1835		
Reference Time A (s)	96.7	44.7		30.9	37.5		257.3	21.4		74.8	22.8		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)	96.7			37.5			257.3			74.8			
Adj Reference Time (s)	100.7			41.5			261.3			78.8			
Split Option													
Ref Time Combined (s)	6.4	44.7		2.1	37.5		17.2	21.4		5.0	22.8		
Ref Time Seperate (s)	6.4	28.6		2.1	30.3		17.2	20.1		5.0	17.7		
Reference Time (s)	44.7	44.7		37.5	37.5		21.4	21.4		22.8	22.8		
Adj Reference Time (s)	48.7	48.7		41.5	41.5		25.4	25.4		26.8	26.8		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	57.7		48.0										
Permitted Option (s)	100.7		261.3										
Split Option (s)	90.1		52.2										
Minimum (s)	57.7		48.0		105.6								
Right Turns													
Adj Reference Time (s)													
Cross Thru Ref Time (s)													
Oncoming Left Ref Time (s)													
Combined (s)													
Intersection Summary													
Intersection Capacity Utilization	88.0%		ICU Level of Service						E				
Reference Times and Phasing Options do not represent an optimized timing plan.													

# Intersection Capacity Utilization

## 11: Shoemaker Avenue/Greenleaf Avenue & Telegraph Road






















09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑		↗	↑↑↑		↗	↑↑		↗	↑↑	
Volume (vph)	68	1198	143	35	731	48	138	435	40	76	383	73
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	68	1341	0	35	779	0	138	475	0	76	456	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.99	0.85	0.95	0.99	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1805	5093	0	1805	5128	0	1805	3572	0	1805	3531	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	4.5	31.6	0.0	2.3	18.2	0.0	9.2	16.0	0.0	5.1	15.5	0.0
Adj Reference Time (s)	9.0	35.6	0.0	9.0	22.2	0.0	13.2	20.0	0.0	9.1	19.5	0.0
Permitted Option												
Adj Saturation A (vph)	120	1698		120	1709		120	1786		120	1765	
Reference Time A (s)	67.8	31.6		34.9	18.2		137.6	16.0		75.8	15.5	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		67.8			34.9			137.6			75.8	
Adj Reference Time (s)		71.8			38.9			141.6			79.8	
Split Option												
Ref Time Combined (s)	4.5	31.6		2.3	18.2		9.2	16.0		5.1	15.5	
Ref Time Seperate (s)	4.5	28.2		2.3	17.1		9.2	14.6		5.1	13.0	
Reference Time (s)	31.6	31.6		18.2	18.2		16.0	16.0		15.5	15.5	
Adj Reference Time (s)	35.6	35.6		22.2	22.2		20.0	20.0		19.5	19.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	44.6		32.7									
Permitted Option (s)	71.8		141.6									
Split Option (s)	57.8		39.5									
Minimum (s)	44.6		32.7		77.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			64.4%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
10: Greenleaf Avenue & Los Nietos Road

Opening Year 2020 Plus Project AM with Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	300	199	44	525	68	234	265	30	74	310	193
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	58	499	0	44	593	0	234	295	0	74	310	193
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	1786	0	1805	1867	0	1805	1871	0	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.9	33.5	0.0	2.9	38.1	0.0	15.6	18.9	0.0	4.9	19.6	14.3
Adj Reference Time (s)	9.0	37.5	0.0	9.0	42.1	0.0	19.6	22.9	0.0	9.0	23.6	18.8
Permitted Option												
Adj Saturation A (vph)	120	1786		120	1867		120	1871		120	1900	
Reference Time A (s)	57.8	33.5		43.9	38.1		233.4	18.9		73.8	19.6	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)	57.8			43.9			233.4			73.8		
Adj Reference Time (s)	61.8			47.9			237.4			77.8		
Split Option												
Ref Time Combined (s)	3.9	33.5		2.9	38.1		15.6	18.9		4.9	19.6	
Ref Time Seperate (s)	3.9	20.2		2.9	33.7		15.6	17.0		4.9	19.6	
Reference Time (s)	33.5	33.5		38.1	38.1		18.9	18.9		19.6	19.6	
Adj Reference Time (s)	37.5	37.5		42.1	42.1		22.9	22.9		23.6	23.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	51.1		43.1									
Permitted Option (s)	61.8		237.4									
Split Option (s)	79.6		46.5									
Minimum (s)	51.1		43.1		94.2							
Right Turns												
	SBR											
Adj Reference Time (s)	18.8											
Cross Thru Ref Time (s)	42.1											
Oncoming Left Ref Time (s)	19.6											
Combined (s)	80.5											
Intersection Summary												
Intersection Capacity Utilization	78.5%		ICU Level of Service				D					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization  
10: Greenleaf Avenue & Los Nietos Road

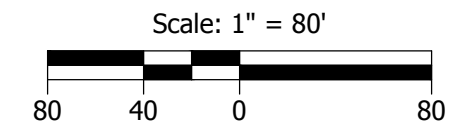
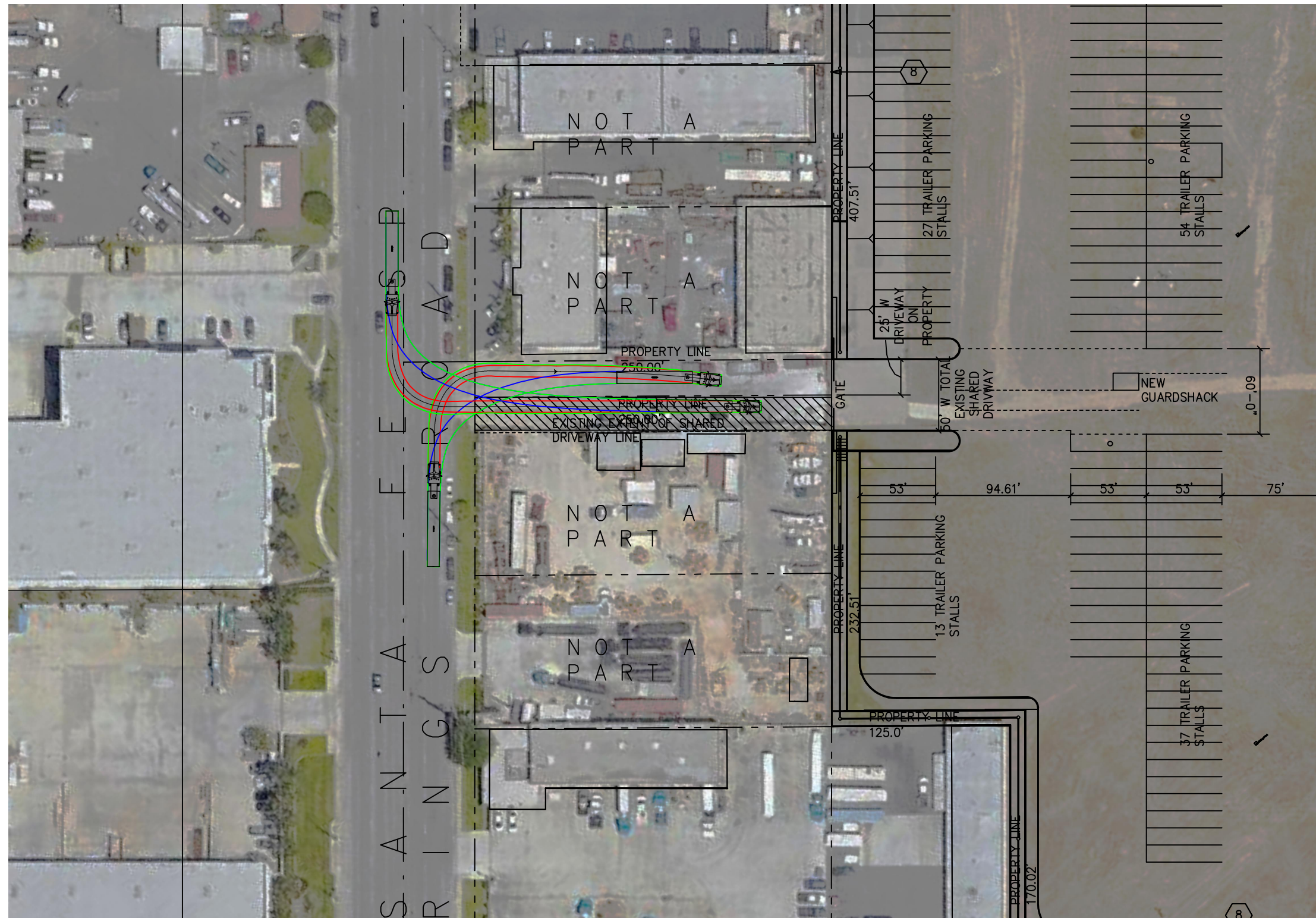
Opening Year 2020 Plus Project PM with Mitigation



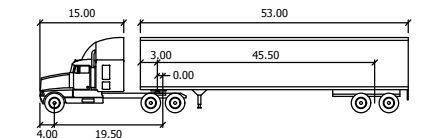
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	429	240	31	466	110	258	316	20	75	270	79
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5
Minimum Green (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	97	669	0	31	576	0	258	336	0	75	270	79
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1805	1798	0	1805	1846	0	1805	1883	0	1805	1900	1615
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	6.4	44.7	0.0	2.1	37.5	0.0	17.2	21.4	0.0	5.0	17.1	5.9
Adj Reference Time (s)	10.4	48.7	0.0	9.0	41.5	0.0	21.2	25.4	0.0	9.0	21.1	10.4
Permitted Option												
Adj Saturation A (vph)	120	1798		120	1846		120	1883		120	1900	
Reference Time A (s)	96.7	44.7		30.9	37.5		257.3	21.4		74.8	17.1	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		96.7			37.5			257.3			74.8	
Adj Reference Time (s)		100.7			41.5			261.3			78.8	
Split Option												
Ref Time Combined (s)	6.4	44.7		2.1	37.5		17.2	21.4		5.0	17.1	
Ref Time Seperate (s)	6.4	28.6		2.1	30.3		17.2	20.1		5.0	17.1	
Reference Time (s)	44.7	44.7		37.5	37.5		21.4	21.4		17.1	17.1	
Adj Reference Time (s)	48.7	48.7		41.5	41.5		25.4	25.4		21.1	21.1	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	57.7		42.2									
Permitted Option (s)	100.7		261.3									
Split Option (s)	90.1		46.5									
Minimum (s)	57.7		42.2		99.9							
Right Turns												
	SBR											
Adj Reference Time (s)	10.4											
Cross Thru Ref Time (s)	41.5											
Oncoming Left Ref Time (s)	21.2											
Combined (s)	73.0											
Intersection Summary												
Intersection Capacity Utilization			83.2%		ICU Level of Service		E					
Reference Times and Phasing Options do not represent an optimized timing plan.												

**Appendix H**  
Truck Turning Templates





Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	
Front Tire Track	
Rear Tire Track	



WB-67

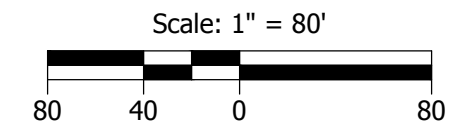
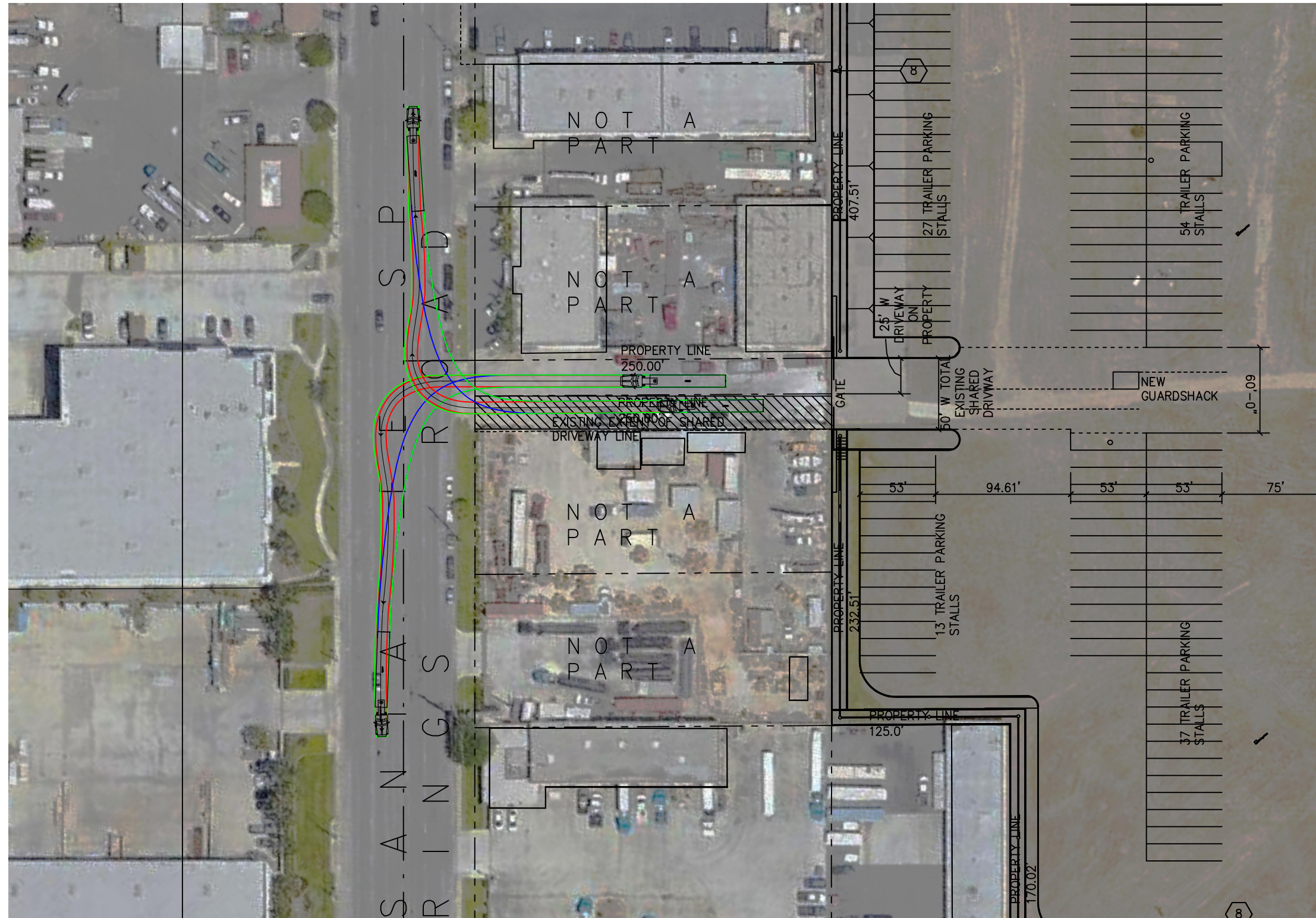
feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Entering Trucks  
 Santa Fe Springs Road Driveway  
 Santa Fe Springs, California

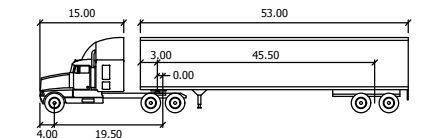
Figure  
 H-1

H:\22\2812 - Santa Fe Springs Industrial\TIA\design\Autumn Analysis\22812\_Truck Access and Circulation.dwg Jun 19, 2019 - 2:34pm - cdougherty Layout Tab: Circulation





Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	
Front Tire Track	
Rear Tire Track	



WB-67

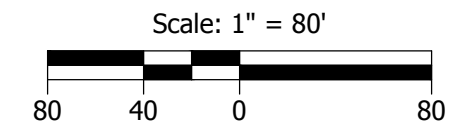
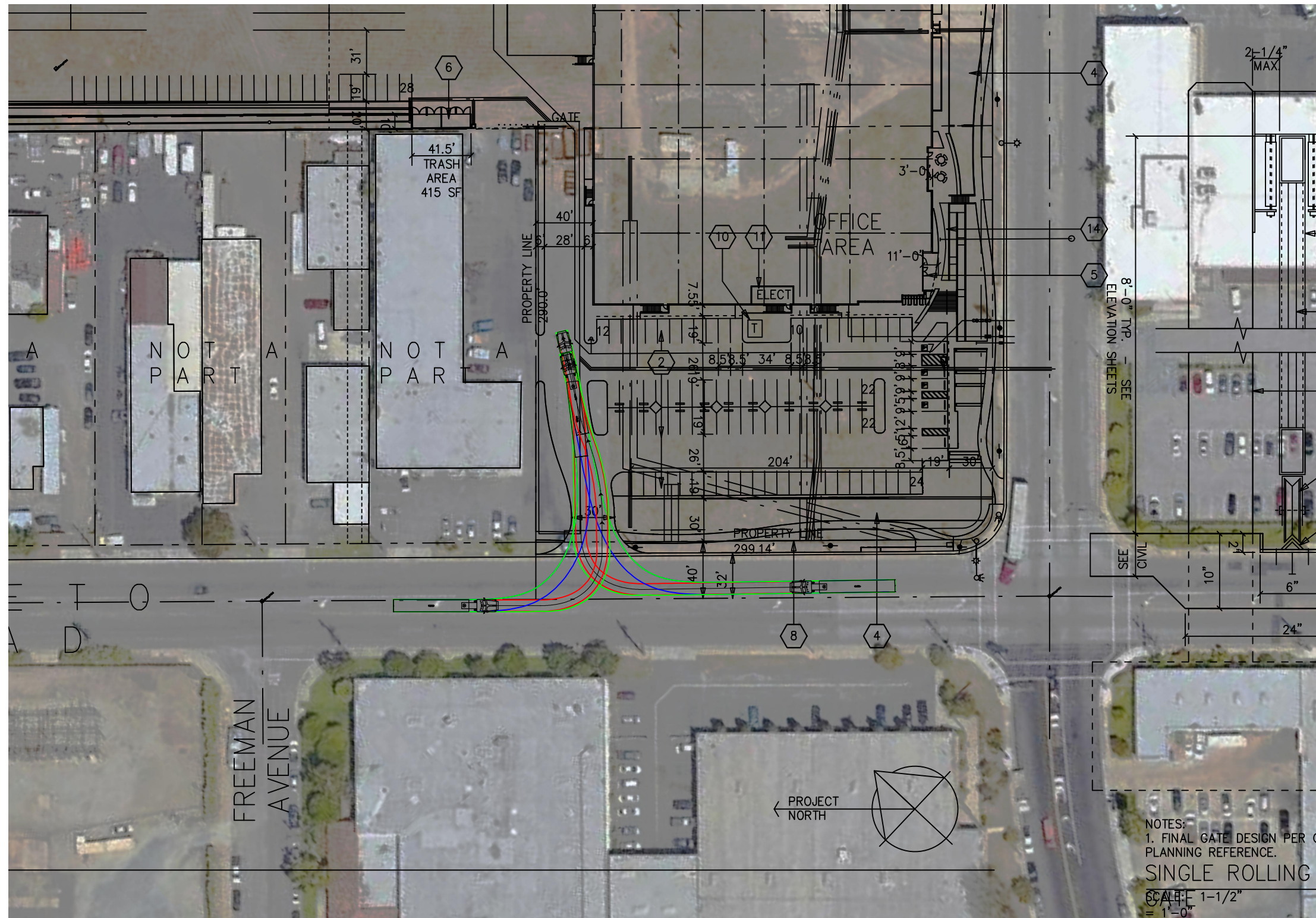
feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Departing Trucks  
 Santa Fe Springs Road Driveway  
 Santa Fe Springs, California

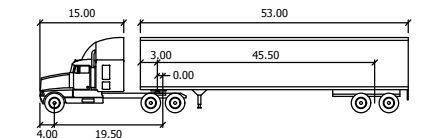
Figure  
 H-2

H:\22\2812 - Santa Fe Springs Industrial\TIA\design\Autoturn Analysis\22812\_Truck Access and Circulation.dwg Jun 19, 2019 - 2:43pm - cdougherty Layout Tab: Santa Fe Springs Departing





Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	
Front Tire Track	
Rear Tire Track	



WB-67

feet	
Tractor Width	: 8.00
Trailer Width	: 8.50
Tractor Track	: 8.00
Trailer Track	: 8.50

Lock to Lock Time	: 6.0
Steering Angle	: 28.4
Articulating Angle	: 75.0

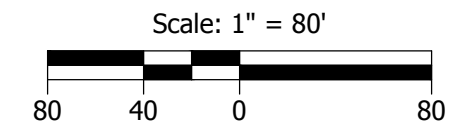
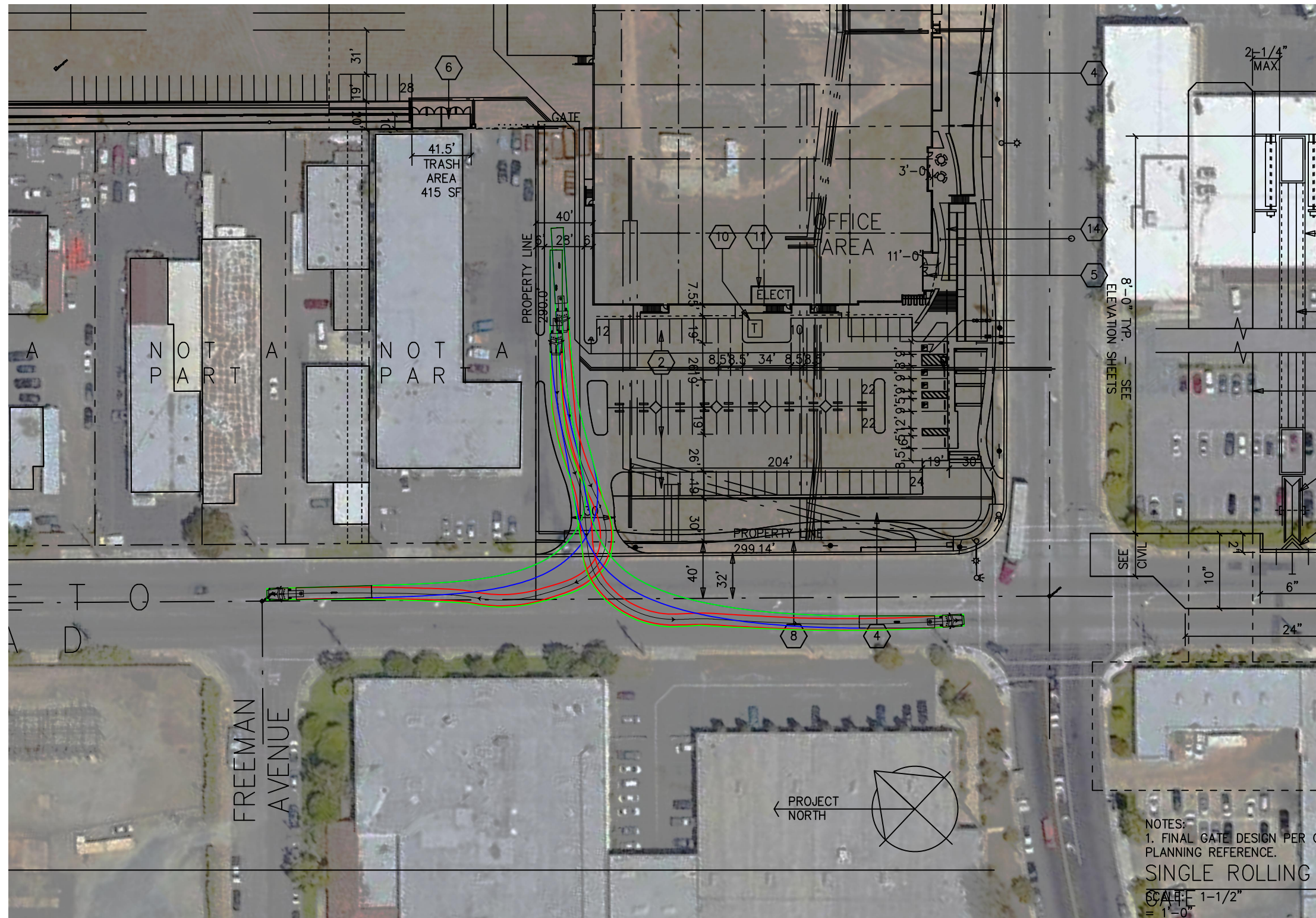
NOTES:  
 1. FINAL GATE DESIGN PER CC PLANNING REFERENCE.  
 SINGLE ROLLING  
 SCALE: 1-1/2" = 1'-0"

Entering Trucks  
 Los Nietos Road Driveway  
 Santa Fe Springs, California

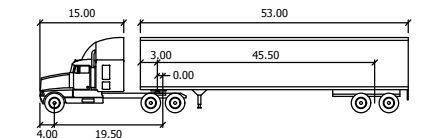
Figure  
 H-3

H:\22\2812 - Santa Fe Springs Industrial\TIA\design\Autoturn Analysis\22812\_Truck Access and Circulation.dwg Jun 24, 2019 - 7:50am - cdougherty Layout Tab: Los Nietos Entering





Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	
Front Tire Track	
Rear Tire Track	



WB-67

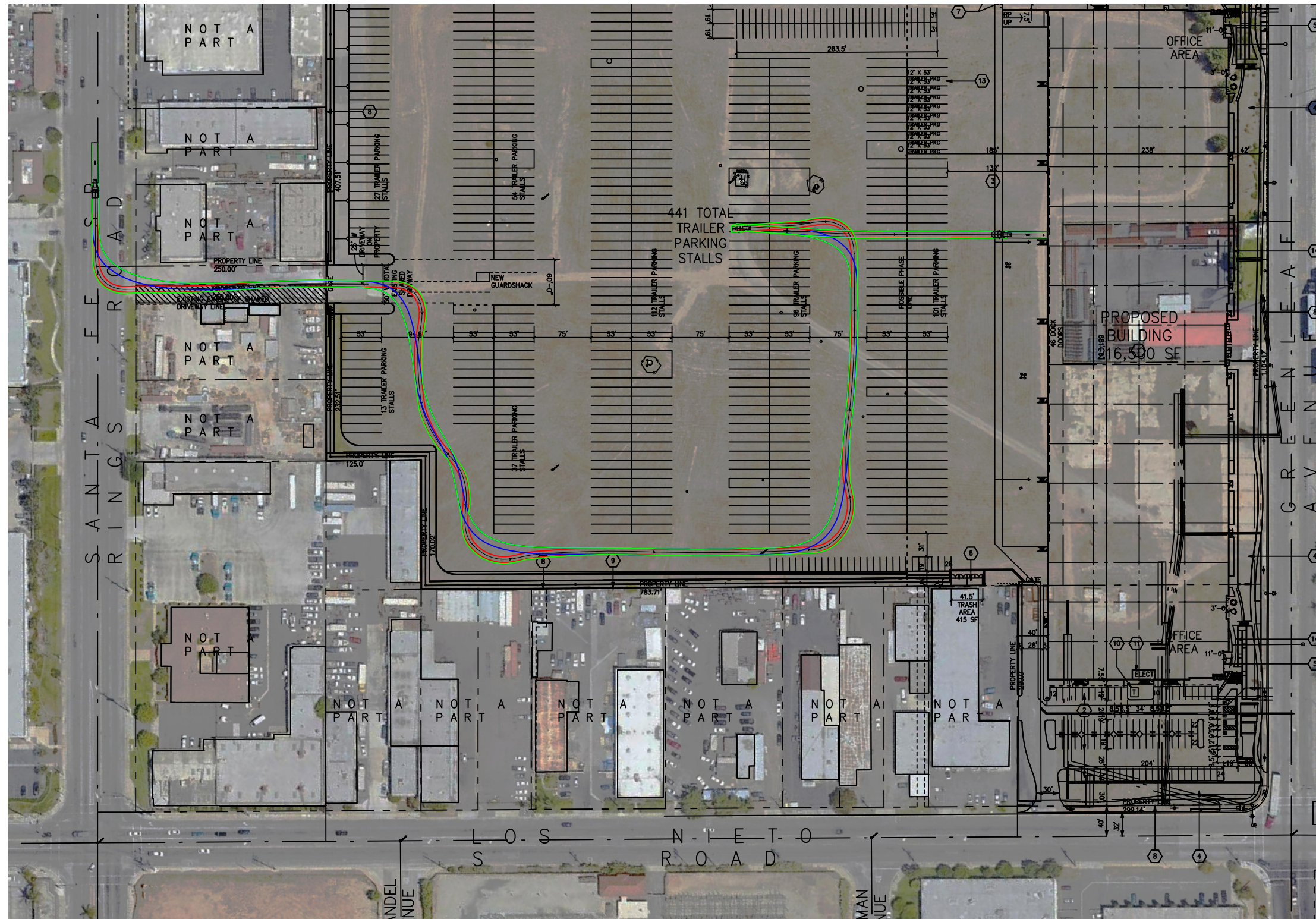
feet	
Tractor Width	: 8.00
Trailer Width	: 8.50
Tractor Track	: 8.00
Trailer Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 28.4
Articulating Angle	: 75.0

NOTES:  
 1. FINAL GATE DESIGN PER CC PLANNING REFERENCE.  
 SINGLE ROLLING  
 SCALE: 1-1/2" = 1'-0"

Departing Trucks  
 Los Nietos Road Driveway  
 Santa Fe Springs, California  
 Figure H-4

H:\22\2812 - Santa Fe Springs Industrial\TIA\design\Autoturn Analysis\22812\_Truck Access and Circulation.dwg Jun 19, 2019 - 3:22pm - cdougherty Layout Tab: Los Nietos Departing

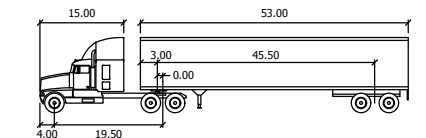




Scale: 1" = 150'



Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	<span style="color: green;">—</span>
Front Tire Track	<span style="color: red;">—</span>
Rear Tire Track	<span style="color: blue;">—</span>



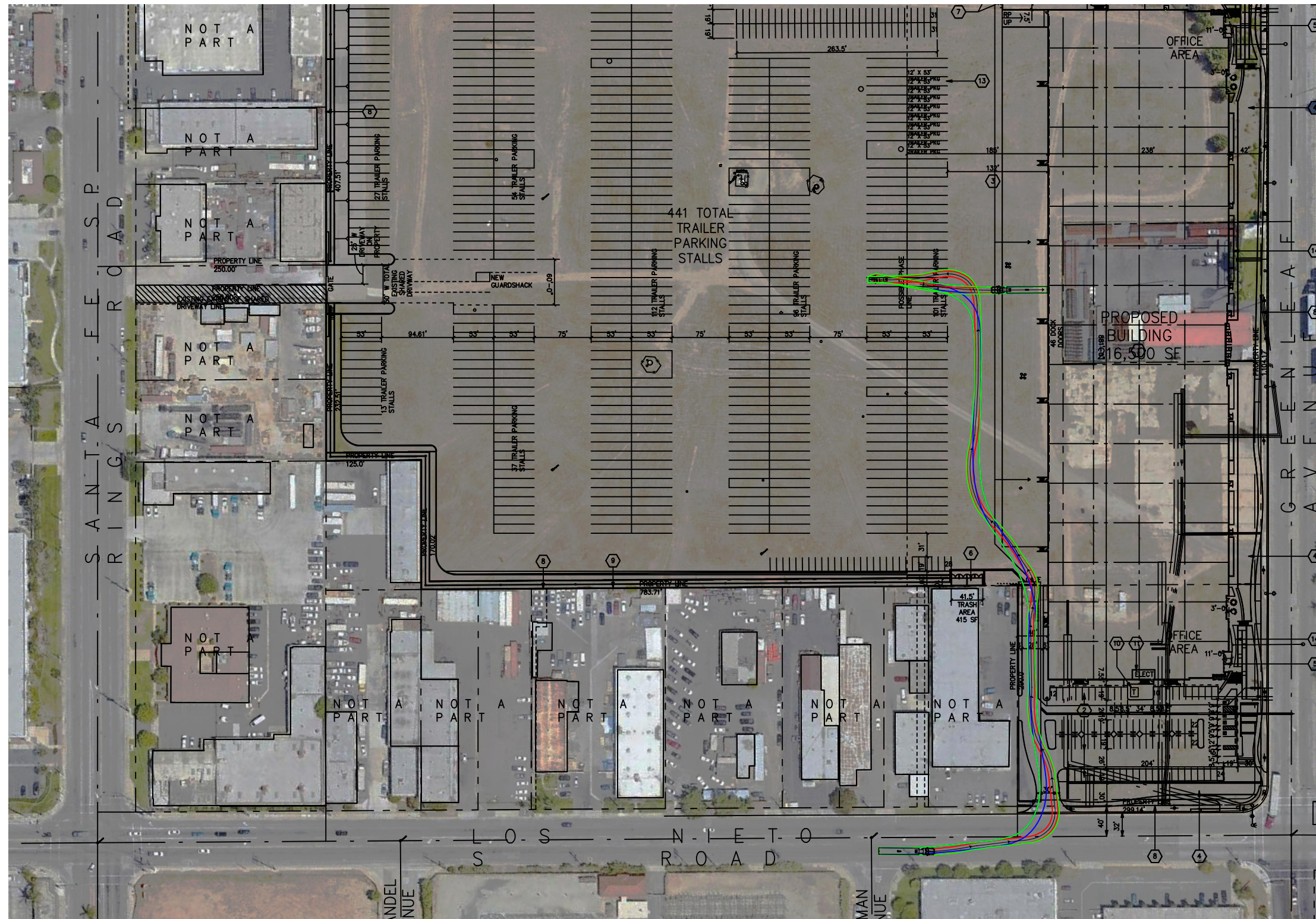
WB-67		
	feet	
Tractor Width	: 8.00	Lock to Lock Time : 6.0
Trailer Width	: 8.50	Steering Angle : 28.4
Tractor Track	: 8.00	Articulating Angle : 75.0
Trailer Track	: 8.50	

Circulation Trucks  
 Santa Fe Springs Road Driveway  
 Santa Fe Springs, California

Figure  
 H-5

H:\22\22812 - Santa Fe Springs Industrial\TIA\design\Autoturn Analysis\22812\_Truck Access and Circulation.dwg Jun 19, 2019 - 3:51pm - cdougherty Layout Tab- Santa Fe Springs Circ

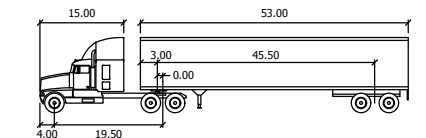




Scale: 1" = 150'



Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 MPH
Min. Turning Radius:	
Turn from stop:	Off
Vehicle Envelope	<span style="color: green;">—</span>
Front Tire Track	<span style="color: red;">—</span>
Rear Tire Track	<span style="color: blue;">—</span>



WB-67

feet	
Tractor Width	: 8.00
Trailer Width	: 8.50
Tractor Track	: 8.00
Trailer Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 28.4
Articulating Angle	: 75.0

Circulation Trucks  
Los Nietos Road Driveway  
Santa Fe Springs, California

Figure  
H-6

H:\22\22812 - Santa Fe Springs Industrial\TIA\design\Autoturn Analysis\22812\_Truck Access and Circulation.dwg Jun 19, 2019 - 3:41pm - cdougherty Layout Tab: Los Nietos Ctrc