APPENDIX D

Traffic Impact Analysis

Otay Ranch Village 4 South

Final TIA

Prepared for:
Dansk Investment Group

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SD16-0214

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1.0 INTRODUCTION

This traffic impact analysis (TIA) report has been prepared for the proposed Village 4 South Residential Project within the Otay Ranch community in the City of Chula Vista. The project is planned to be located west of the future La Media Road / Main Street couplet, as illustrated in **Figure 1-1**. The original draft final TIA was submitted in July of 2015 and this document has been updated to reflect a change in the project description. The currently project proposes fewer units than analyzed in the July 2015 TIA. For efficiency purposes, and to provide for a worst-case scenario analysis, all intersection, segment, and Caltrans analyses retain the previous project description. The only analyses that were updated were segments and intersections that were identified in the original TIA to have significant impacts to determine whether those impacts would remain with a smaller project.

PROJECT DESCRIPTION

Otay Ranch is a master planned community of approximately 23,000 acres in size and includes a mix of land uses within 20 villages and planning areas. The General Plan was updated in in 2012 and includes the land uses planned for the Village 4 South Residential Project site. Sectional Planning Area (SPA) plans are required for each village prior to consideration of final development permits and entitlements. The Village 4 SPA Plan will be updated for this project.

The Village 4 South Residential Project previously included 215 multifamily and 181 single family homes, for a total of 396 dwelling units (DU) in the original TIA. The currently proposed project has been reduced to 275 multifamily and 75 single family homes, for a total of 350 DU. Multifamily units will be located north and south of the future Main Street extension. All single family units will be located south of the future Main Street extension. The project will have access from Main Street at two signalized intersections. The updated project site plan is provided on **Figure 1-2**.

The project will be constructed in a single phase. At build-out in the original TIA, the project was forecast to generate approximately 3,530 trips per day, based on the SANDAG "Not So Brief Guide to Vehicular Traffic Generation Rates (April 2002)". With the reduction in the number of units, the proposed project is now forecast to generate 2,950 trips per day. Because this project is entirely residential, trip reduction factors were not applied. However, it is possible that, due to the proximity of the site to the Village 8 West town center and other recreational facilities such as the community park within Village 4 South, a portion of the trips generated by the site could be non-auto oriented. To provide a conservative assessment of the conditions, no trip reduction factors were applied.

STUDY SCENARIOS

The traffic analysis provided in this report was prepared for existing, 2020 and 2030 conditions. As required by the City of Chula Vista, the report was prepared in accordance with the City's Adopted General Plan. The City's goal for acceptable levels of service is generally LOS D or better at signalized and unsignalized intersections and LOS C along roadway segments.

REPORT ORGANIZATION

The methodology and technical analysis is described in detail in the following chapters:

2.0 **Study Methodology** – This chapter describes the methodologies and standards utilized to analyze intersection operations.

3.0 **Project Description** – This chapter describes the proposed project including the estimated traffic generation, assumed trip distribution pattern, and resulting trip assignment.

4.0 **Existing Conditions** – This chapter describes the traffic operations under existing conditions without the project.

5.0 **Existing Plus Project Conditions** – This chapter describes the traffic operating conditions when the project is overlaid on the existing traffic volumes and with the existing roadway network.

6.0 **Near Term (2018) Conditions** – This chapter assesses the near term impacts (0-4 years) that is required as part of the Growth Management Plan. The project opening year is assumed to occur in year 2018.

7.0 **Long Term (2020) Conditions** - This chapter describes anticipated future year 2020 traffic conditions with anticipated roadway improvements planned within the City by year 2020.

8.0 **Long Term (2030) Conditions** – This chapter describes anticipated future year 2030 traffic conditions with anticipated roadway improvements planned in the General Plan Circulation Element.

9.0 **Site Access and Circulation**– This chapter describes anticipated future year 2030 traffic conditions with anticipated roadway improvements planned in the General Plan Circulation Element.

10.0 **Caltrans Analysis** – This chapter evaluates project related impacts along state owned facilities.

11.0 **Mitigation and Conclusions** – This chapter outlines the overall study findings and recommended mitigation measures.

2.0 STUDY METHODOLOGY

The traffic analyses prepared for this study were performed in accordance with City of Chula Vista traffic impact analysis guidelines for City of Chula Vista intersections and roadway segments, and SANTEC/ITE Traffic Impact Analysis Guidelines for all Caltrans facilities. As to the analysis study area, the City of Chula Vista's guidelines require that a project study area be established as follows:

- All freeway mainline segments to which the proposed project will add 2,400 total average daily trips (ADT) or 150 or more peak hour trips in either direction must be analyzed.
- All arterial segments and intersections (including freeway on/off ramp intersections), to which the proposed project will add 800 or more total trips (ADT) or 50 or more peak-hour trips in either direction must be analyzed.

PEAK HOUR INTERSECTION LEVEL OF SERVICE ANALYSIS

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. The methodology for signalized and unsignalized intersections is described below.

SIGNALIZED INTERSECTION ANALYSIS

The signalized intersection analysis conforms to the operational analysis methodology outlined in Chapter 16 of the *2000 Highway Capacity Manual (HCM 2000), Transportation Research Board Special Report 209*. The analysis of roadway operations performed for this study is based upon procedures presented in the *Highway Capacity Manual* (HCM), published by the Transportation Research Board in 2000. The *HCM 2010* was available as of the time this report was published; however, not many jurisdictions have yet adopted the HCM 2010, as many LOS software programs are still fine tuning released updated versions incorporating the 2010 methods. For example, the HCM 2010 software automatically analyzes an intersection assuming there are no right-turns on red, and this can lead to LOS results appearing worse than they truly are. For peak hour intersection evaluation the use of HCM 2000 is not expected to change the conclusions of this report. LOS using both methodologies is provided in the technical appendix to this report. The HCM 2000 methodology relates the intersection Level of Service (LOS) to intersection control delay, in terms of seconds per vehicle (sec/veh). This methodology sets 1,900 passenger-cars per hour

per lane (pcphpl) as the base (or ideal) saturation flow rate at signalized intersections, which is based on the minimum headway that can be sustained between departing vehicles at a signalized intersection.

The LOS criteria used for the analysis of signalized intersections are described in **Table 2.1**, identifying the thresholds of control delays and the associated LOS. The computerized analysis of the downtown intersection operations was performed utilizing the *Synchro 8.0* traffic analysis software by Trafficware.

TABLE 2.1 SIGNALIZED & UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Signalized Intersections		Unsignalized Intersections	
	Description	Delay (sec)	Description	Delay (sec)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0	Little or no delay.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0	Short traffic delay.	<10.1- 15.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0	Average traffic delays.	<15.1- 25.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0	Long traffic delays.	<25.1- 35.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	Very long traffic delays.	<35.1- 50.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: 2000 Highway Capacity Manual.

UNSIGNALIZED INTERSECTION ANALYSIS

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *HCM 2000* (Section 10) analysis methodology. The *Synchro 8.0 s*oftware supports this methodology and was utilized to produce Level of Service results. The Level of Service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. **Table 2.1** summarizes the Level of Service criteria for unsignalized intersections.

ROADWAY SEGMENT LEVEL OF SERVICE ANALYSIS

Roadway Segment level of service standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Table 2.2** presents the roadway segment capacity and level of service standards utilized to analyze roadway segments within the City of Chula Vista.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and level of service of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

For the purposes of this traffic analysis, LOS C is considered acceptable for Circulation Element roadway segments within the City of Chula Vista. Per the *Otay Ranch General Development Plan*, LOS D is permitted on Circulation Element roads within the Otay Ranch Villages.

GROWTH MANAGEMENT PROGRAM (GMP) ANALYSIS

The City of Chula Vista's Growth Management Program (GMP) requires an additional analysis of roadway segment performance under Near Term Conditions (0-4 years) utilizing the methodology described in Chapter 17 (Urban Street Segment) of the HCM 2010. This methodology determines roadway segment level of service based upon functional classification, roadway segment length and travel speeds. Current information relating to roadway functional classifications, segment lengths, and travel speeds are maintained by the City's Growth Management Traffic Monitoring Program.

TABLE 2.2
ROADWAY SEGMENT LEVEL OF SERVICE THRESHOLDS

Classification (Number of Lanes)	Level of Service as Percent of Capacity				
	A (60%)	B (70%)	C (80%)	D (90%)	E (100%)
Expressway (8)	52,500	61,300	70,000	78,800	87,500
Prime Arterial (6) [1]	37,500	43,800	50,000	56,300	62,500
Major Street (6)	30,000	35,000	40,000	45,000	50,000
Major Street (4)	22,500	26,300	30,000	33,800	37,500
Class I Collector (4)	16,500	19,300	22,000	24,800	27,500
Class II Collector (2)	9,000	10,500	12,000	13,500	15,000
Class III Collector (2)	5,600	6,600	7,500	8,400	9,400
Town Center Arterial (6) [2]	37,500	43,800	50,000	56,300	62,500
Gateway Arterial (6) [2]	40,500	47,500	54,500	61,200	68,700

Source: *City of Chula Vista General Plan, Land Use and Transportation Element*
Notes:

(1) The technical analysis includes the evaluation of augmented arterials near the freeway on and off ramps. The augmented arterials include auxiliary lanes in advance of the freeway ramps to serve the higher traffic volumes that typically occur. When auxiliary lanes are provided, the capacity of the segments is increased by the equivalent single lane capacity to account for the benefit in overall operations that is achieved with the construction of auxiliary lanes near the ramps.

(2) Town Center and Gateway Arterials are "urban core" classifications. Urban Core facilities are evaluated against a LOS D or better standard.

The GMP level of service standard requires the maintenance of LOS C or better, or LOS D for no more than any two (2) hours of the day. If LOS D occurs for any period greater than two (2) hours, additional analyses may be required along the respective high volume segments based upon direction provided by the City Engineer. For planned arterial facilities that are not included in the current Traffic Monitoring Program, the definition of segment length and facility classification will be based on direction provided by the City Engineer.

ANALYSIS OF CALTRANS FACILITIES

In accordance with the City of Chula Vista and Caltrans requirements, the following analysis was conducted for all study scenarios using the City of Chula Vista Impact Study Guidelines, the 2010 *Highway Capacity Manual* and the Caltrans Highway Design Manual:

- Freeway Mainline Analysis – City of Chula Vista TIS Guidelines
- Intersections – Caltrans Intersection Lane Volume (ILV) Methodology

Basic Freeway Mainline Analysis

Segments of northbound and southbound I-805 were analyzed without and with the proposed project for Existing, 2020 and 2030 conditions. The analysis was conducting using the 2010 HCM Basic Freeway Segment Analysis Methodology. A 5% heavy truck factor was applied in addition to a measured free-flow speed of 65 mph when calculating the operating conditions using the multi-lane freeway analysis. Details of this analysis are provided in Chapter 10 of this report.

Intersection Lane Volume (ILV) Analysis

The ILV methodology evaluates the traffic demand at an intersection to the available capacity at the intersection. Combining traffic signal phasing and intersection geometry with peak hour traffic volumes, the ILV methodology determines if a ramp is either "stable", "unstable", or at "capacity". The thresholds for operating conditions using the ILV methodology are summarized in **Table 2.3**

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TABLE 2.3
INTERSECTION LANE VOLUME (ILV) OPERATIONAL THRESHOLDS

ILV/hour	Description
<1,200 "Stable"	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free mid-block operations.
1,200 – 1,500 "Unstable"	Unstable flow with considerable delays possible. Some vehicles occasionally wait to or more cycle to pass through the intersection. Continuous backup occurs on some approaches.
>1,500 "Capacity"	Stop-and-go with severe delay and heavy congestion. Traffic volume is limited by maximum discharge rates of each phase. Continuous back up in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: *Caltrans Highway Design Manual, Table 406*

DESCRIPTION OF SIGNIFICANT IMPACTS

This section outlines the thresholds for determination of significant project-related impacts to roadways and intersections in the City of Chula Vista. Caltrans significant impact criteria are described in Chapter 10 of this report.

Project impacts will be defined as either direct impacts or cumulative impacts. Direct impacts are those impacts for which the addition of project trips results in an identifiable degradation in level of service on freeway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor level of service, at a nominal level.

Study horizon year as used herein is intended to describe a future period of time in the traffic studies, which corresponds to SANDAG's traffic model years, and are meant to synchronize study impacts to be in line with typical study years of 2020 and 2030.

Criteria for determining whether the project results in either direct or cumulative impacts on freeway segments, roadway segments, or intersections are as follows:

Near Term (0-4 years)

For purposes of near-term analysis, roadway sections are defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections, and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under near term conditions may require a more detailed analysis using Growth Management Oversight Committee (GMOC) methodology if the analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program.

Intersections

1.) Direct impact if BOTH the following criteria are met:
    a.) Level of service is LOS E or LOS F
    b.) Project trips comprise 5% or more of entering volume
2.) Cumulative impact if only "a" is met.

Street Links/Segments

If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E, or F, the GMOC method should be utilized. The following criteria would then be utilized.

1.) Direct impact if ALL the following criteria are met:
    a.) Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour
    b.) Project trips comprise 5% or more of segment volume
    c.) Project adds greater than 800 ADT to the segment
2.) Cumulative impact if only "a" is met.

Horizon Year (5 or more years)

Intersections

1.) Direct impact if BOTH the following criteria are met:
    a.) Level of Service is LOS E or LOS F
    b.) Project trips comprise 5% or more of entering volume

2.) Cumulative impact if only "a" is met.

Street Segments

Use the planning analysis using the volume to capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

1.) Direct impact if ALL three of the following criteria are met:

   a.) Level of service is LOS D, LOS E, or LOS F
   b.) Project trips comprise 5% or more of total segment volume
   c.) Project adds greater than 800 ADT to the segment.

2.) Cumulative impact if only "a" is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.

The City of Chula Vista has a Transportation Development Impact Fees (TDIF) program that is funded by contributions from developers and is used to mitigate traffic impacts discussed above. Building permits are issued after fees have been paid.

3.0 PROJECT DESCRIPTION

The proposed development will be located in the southwest portion of Otay Ranch and part of the larger Village 4 SPA. This section describes the proposed Village 4 South project including the proposed land uses, estimated trip generation, trip distribution, and trip assignment.

PROJECT DESCRIPTION

The project will include 275 multifamily homes and 75 single family homes. As previously mentioned, the original TIA assumed 215 multifamily homes and 181 single family homes. The multifamily portion of the project is located on both the north and south side of the future Main Street extension. All single family units are located on the south side of Main Street

PROJECT ACCESS

The project will have access from Main Street at two locations. Both access points will be controlled by traffic signals. The project will be responsible for constructing Main Street along the project frontage from La Media Road to the property line. The construction of the Main Street bridge is not assumed to occur with this project. Access to the project will be limited to Main Street via La Media Road until the bridge is constructed by others or by the City through the Transportation Development Impact Fees (TDIF) program.

Pedestrian access will be provided via sidewalks along Main Street and on all internal roadways. Traffic signals at the two key project entry points will aid in pedestrian access across Main Street. Sidewalks along Main Street will connect the residential community to the Village 2 South community park and the Village 8 West town center, when constructed.

Bicycle access will be provided via Class II bicycle lanes along both sides of Main Street.

Transit service will be provided by MTS along Main Street. Both Rapid Bus service and local circulator service will be accessible once service is extended by MTS.

PROJECT TRIP GENERATION

Vehicle trip generation rates for the proposed project were obtained from the *SANDAG Traffic Generators, "Not So Brief Guide…(April 2002)"*. Based on the proposed multi-family and single family land uses, the project is estimated to generate 2,930 daily trips, including 236 AM peak hour trips (53 inbound, 183 outbound) and 295 PM peak hour trips (207 inbound, 89 outbound). The original TIA estimated 3,530

daily trips. **Table 3.1** displays the daily project trip, as well as the trip estimates for the AM and PM peak hours based on the original TIA. **Table 3.1b** displays the updated project trip generation based on the current project description.

TABLE 3.1
ORIGINAL VILLAGE 4 PROJECT TRIP GENERATION

Project Description		Daily		AM Peak				PM Peak Hour			
Land Use	**Units**	**Rate**	**Trips**	**Rate[1]**	**Trips**	**In**	**Out**	**Rate[1]**	**Trips**	**In**	**Out**
Apartment	215 DU	8 trips/DU	1720	8%	138	28	110	10%	172	120	52
Single Family	181 DU	10 trips/DU	1810	8%	145	43	101	10%	181	127	54
Total			**3530**		**282**	**71**	**211**		**353**	**247**	**106**

TABLE 3.1b
UPDATED VILLAGE 4 PROJECT TRIP GENERATION

Project Description		Daily		AM Peak				PM Peak Hour			
Land Use	**Units**	**Rate**	**Trips**	**Rate[1]**	**Trips**	**In**	**Out**	**Rate[1]**	**Trips**	**In**	**Out**
Apartment	275 DU	8 trips/DU	2,200	8%	176	35	141	10%	220	154	66
Single Family	75 DU	10 trips/DU	750	8%	60	18	42	10%	75	53	23
Total			**2,950**		**236**	**53**	**183**		**295**	**207**	**89**

Note: [1] Percent of daily trips.
Source: *SANDAG Traffic Generators Manual "Not So Brief Guide…"*

Project construction is anticipated to occur in one phase with construction beginning in 2018, pending project approval in 2016. Construction of the homes is anticipated to take nine months.

PROJECT TRIP DISTRIBUTION

This traffic study uses the SANDAG Series 11 "Southbay 2" traffic forecast model with the most current relevant information available from the City of Chula Vista. Fehr & Peers requested a select zone run from SANDAG from the 2030 "Southbay 2" model to determine the distribution of project trips through the study area at General Plan buildout, which includes several roadways not currently constructed in the study area such as Heritage Road, Main Street, and Otay Valley Road.

The year 2030 model results were used to develop general distribution patterns from the project site into the Chula Vista. The general distribution patterns were used to develop trip distribution patterns for existing plus project and future year 2020 conditions, when many of the planned future roadways do not exist. **Figures 3-1 through 3-3** illustrate the trip distribution patterns for the existing plus project, near term 2020 and long-term 2030 conditions.

PROJECT TRIP ASSIGNMENT

Based upon the project trip distribution and the peak hour project trip generation, project trips were assigned to the roadway network as displayed in **Figures 3-4 through 3-6.**

PROJECT STUDY AREA

The project study area was defined based on the distribution of project-generated trips on the roadway network. The list of study intersections was determined based on the trip threshold, which includes all intersections where 50 or more peak hour project-genreated trips forecast to be added, including several future intersections and roadway segments. Study intersections and roadway segments are illustrated in **Figure 3-7**. The study area consists of the following intersections and roadway segments:

Study Intersections

1. I-805 SB Ramps & Olympic Parkway
2. 805 NB Ramps & Olympic Parkway
3. Olympic Parkway & Brandywine Avenue
4. Olympic Parkway & Heritage Parkway
5. La Media Road & Olympic Parkway
6. La Media Road & Santa Venetia Street
7. La Media Road & Birch Road
8. SR-125 SB Ramps & Birch Road
9. SR-125 NB Ramps & Birch Road
10. La Media Road & Santa Luna Street
11. I-805 SB Ramps & Main Street
12. I-805 SB Ramps & Main Street A

Study Roadway Segments

Olympic Parkway:

- I-805 NB Ramps to Oleander Avenuenue
- Oleander Avenue to Brandywine Avenue
- Brandywine Avenue to Heritage Road
- Heritage Road to Santa Venetia Street
- Santa Venetia Street to La Media Road
- La Media Road to East Palomar Street
- East Palomar Street to SR-125 SB Ramps

Birch Road:

- La Media Road to Magdalena Avenue
- Magdalena Avenue to SR-125

Main Street

- I-805 NB Ramps to Oleander Avenuenue
- Oleander Avenue to Brandywine Avenue
- Brandywine Avenue to Heritage Road
- Heritage Road to La Media Road
- La Media Road SR-125

Heritage Road:

- Olympic Parkway to Santa Victoria Road
- Santa Victoria Road to Main Street
- Main Street to Avenida De Las Vistas

La Media Road:

1. Olympic Parkway to Santa Venetia Street
2. Santa Venetia Street to Birch Road
3. Birch Road to Santa Luna Street
4. Santa Luna Street to Main Street

4.0 EXISTING CONDITIONS

This section describes key study area intersections, existing peak hour traffic volume information, and Level of Service (LOS) analysis results. Existing pedestrian, bicycle and transit facilities and services are also described in this chapter.

EXISTING ROADWAY NETWORK

A field investigation of the existing roadway and intersection conditions was conducted specifically for this project. Traffic signal operations, lanes, parking and other factors that may affect the capacity of the roadway were identified and included in this analysis. A description of existing and future roadways in the project study area is provided below.

NORTH/SOUTH ROADWAY FACILITIES

Heritage Road: Heritage Road runs north-south through the City of Chula Vista from north of Palomar Street to south of Main Street. Portions of Heritage Road through the City have not yet been constructed but are included in the TDIF program. At the time this report was prepared, the section of Heritage Road from south of Santa Victoria to north of Main Street had not been constructed. When complete, Heritage Road will be a six lane Prime arterial from south of Palomar Street to the southern city boundary.

La Media Road: La Media Road runs north-south through the City of Chula Vista from north of Palomar Street to Main Street. At the time this report was prepared, La Media Road had not been fully constructed with the southern terminus at Santa Luna Street. When complete, La Media Road will be a six lane Prime arterial from Olympic Parkway to Santa Luna and a four lane Town Center Collector from Santa Luna Street to Main Street. South of Main Street, La Media Road changes names to Otay Valley Road.

EAST/WEST ROADWAY FACILITIES

Olympic Parkway: Olympic Parkway is a six lane Prime arterial that runs east-west through the City of Chula Vista, connecting I-805 and SR-125 through the project study area.

Main Street: Main Street is a six lane Prime arterial from I-805 to its existing terminus at Heritage Road. Main Street is planned to extend from Heritage Road to SR-125 as a six lane Prime arterial. East of SR-125, Main Street is classified as a Gateway Arterial through Village 9. The project will take access on Main Street at two signalized intersections located on the west side of Main Street.

Birch Road: Birch Road is classified as a six-lane Major road from La Media Road to SR-125 and as a six-lane Prime arterial on the east side of SR-125.

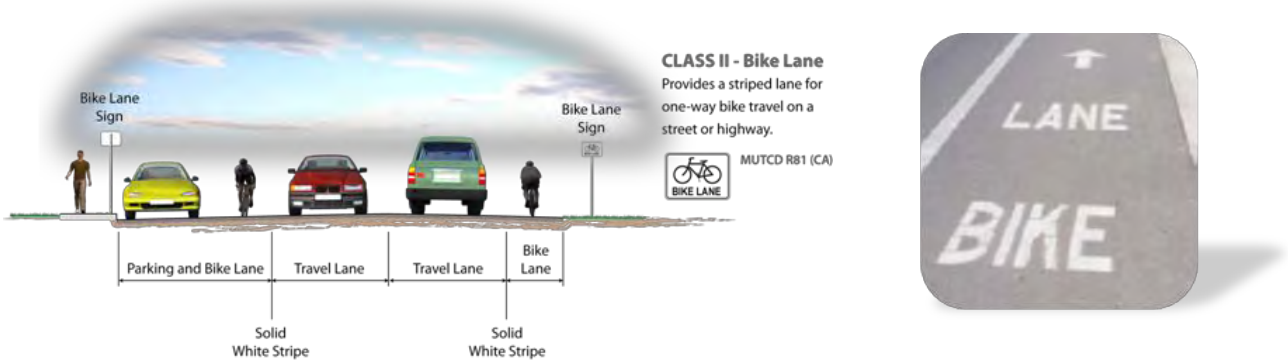
EXISTING AND PLANNED BICYCLE FACILITIES

"Chapter 1000 Bikeway Planning and Design" of the California Highway Design Manual (September 2014) identifies three classes of bikeways which are outlined below:

- *Class I—Bike or Shared Use Paths* provide a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. Generally, the recommended pavement width for a two-directional shared use path is ten (10) feet.



- *Class II—Bike Lanes* provide a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- *Class III—Bike Route or Signed Shared Roadways* provide for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.



EXISTING TRAFFIC VOLUMES

Existing traffic volumes for this project were collected in November 2014 specifically for this project. Raw traffic count volumes are provided in **Appendix A**. **Figure 4-1** illustrates the Existing Conditions peak hour traffic volumes and intersection geometry. Daily traffic volumes and roadway network evaluated in this scenario are illustrated in **Figure 4-2**.

EXISTING TRAFFIC OPERATIONS

The existing traffic volumes, lane configurations and signal timings (for signalized intersections) were used to calculate the existing conditions level of service (LOS) for all of the study locations. The proposed project trips were overlaid on the existing condition traffic to determine the Existing plus Project Conditions impacts. **Table 4.1** displays intersection LOS and average vehicle delay for the key study area intersections under Existing Conditions. The corresponding calculation worksheets for existing conditions are provided in **Appendix B**.

As shown in Table 4.1, the following study intersections operate at LOS E or F in the a.m. or p.m. peak period:

- Olympic Parkway / I-805 SB Ramps (PM Peak)
- Olympic Parkway / I-805 NB Ramps (AM Peak)
- La Media Road / Santa Luna Road (AM Peak)

Table 4.2 summarizes the results of the roadway segment level of service analysis. As shown, two segments of Olympic Parkway currently operate at deficient LOS:

- Olympic Parkway: Oleander Avenue to Brandywine Avenue

- Olympic Parkway: Brandywine Avenue to Heritage Road

TABLE 4.1
EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F
		Delay	LOS	Delay	LOS	
1.	I-805 SB Ramps & Olympic Pkwy	42.3	D	**62.7**	**E**	✓
2.	I-805 NB Ramps & Olympic Pkwy	**65.0**	**E**	37.1	D	✓
3.	Olympic Pkwy & Brandywine Ave	43.4	D	52.7	D	
4.	Olympic Pkwy & Heritage Road	47.8	D	24.4	C	
5.	La Media Rd & Olympic Pkwy	46.6	D	32.2	C	
6.	La Media Rd & Santa Venetia St	45.2	D	18.2	B	
7.	La Media Rd & Birch Rd	27.7	C	24.3	C	
8.	SR-125 SB Ramps & Birch Rd	31.5	C	32.8	C	
9.	SR-125 NB Ramps & Birch Rd	3.4	A	4.8	A	
10.	La Media Rd & Santa Luna St (AWS)	**178.1**	**F**	8.7	A	✓
11.	I-805 SB Ramps & Main Street	23.5	C	22.3	C	
12.	I-805 NB Ramps & Main Street	18.9	B	26.5	C	

Source: Fehr & Peers, November, 2015
Note: Intersection 10 is currently controlled by all-way stop signs (AWS) resulting in high delay during the morning peak.

TABLE 4.2
EXISTING CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	Existing ADT[(1)]	LOS Threshold (LOS C)	LOS	LOS D, E or F?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln w/RM	39,453	50,000	B	
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	48,508	50,000	C	
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	52,262	50,000	**D**	✓
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln w/RM	52,690	50,000	**D**	✓
Olympic Pkwy	Heritage Road	Santa Venetia Street	6-Ln w/RM	48,232	50,000	C	
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln w/RM	45,805	50,000	C	
Olympic Pkwy	La Media Road	East Palomar Street	6-Ln w/RM	31,038	50,000	A	
Olympic Pkwy	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	35,555	50,000	A	
Birch Rd	La Media Road	Magdalena Avenue	6-Ln w/RM	9,160	40,000	A	
Birch Rd	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	10,740	40,000	A	
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	31,341	50,000	A	
Main St	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	23,065	50,000	A	
Main St	Brandywine Avenue	Heritage Rd	6-Ln w/RM	10,865	50,000	A	
Main St	Heritage Road	Project Access			Does Not Exist		
Main St	Project Access	La Media Road			Does Not Exist		

TABLE 4.2
EXISTING CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	Existing ADT[(1)]	LOS Threshold (LOS C)	LOS	LOS D, E or F?
Main St	La Media Road	SR-125 SB Ramps			Does Not Exist		
Main St	SR-125 SB Ramps	SR-125 NB Ramps			Does Not Exist		
Main St	SR-125 NB Ramps	Eastlake Parkway			Does Not Exist		
Otay Valley Rd	Main Street	SR-125			Does Not Exist		
Heritage Rd	Olympic Parkway	Santa Victoria Road			Does Not Exist		
Heritage Rd	Santa Victoria Street	Main Street			Does Not Exist		
Heritage Rd	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	8,787	12,000	A	
La Media Rd	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	16,408	50,000	A	
La Media Rd	Santa Venetia Street	Birch Road	6-Ln w/RM	11,515	50,000	A	
La Media Rd	Birch Road	Santa Luna Street	6-Ln w/RM	2,072	50,000	A	
La Media Rd	Santa Luna Street	Main Street			Does Not Exist		

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane
(1) Source: University Villages TIA, Chen Ryan, 2014.

5.0 EXISTING PLUS PROJECT CONDITIONS

The California Environmental Quality Act (CEQA) mandates the assessment of existing conditions with the project buildout conditions. The Existing Plus Project conditions assume the existing street network with existing traffic volumes as the baseline in order to isolate the project impacts. The only new roadways considered in this analysis were Main Street and La Media Road, which will be constructed by the Village 4 South project and will provide access to the site. Both were considered in this analysis as two-lane roadways from the existing terminus on La Media Road to the project access intersections on Main Street.

Existing plus Project peak hour intersection volumes and intersection geometry are illustrated in **Figure 5-1**. Daily traffic volumes and roadway network evaluated in this study scenario are illustrated in **Figure 5-2**. Peak hour trips and daily trips, calculated for project buildout (summarized previously in Table 3.1) for the project were distributed on the existing roadway network based on trip distribution percentages presented in Figure 3-1).

The results of the peak hour intersection analysis based on the original project description are summarized in **Table 5.1**. The level of service worksheets are provided **Appendix B.** As shown in Table 5.1, four intersections are forecast to operate at LOS E or F during the a.m. or p.m. peak period:

- Olympic Parkway / I-805 SB Ramps (p.m. peak)
- Olympic Parkway / I-805 NB Ramps (a.m. peak)
- Olympic Parkway / Brandywine Avenue (p.m. peak)
- La Media Road / Santa Luna Street (a.m. peak)

Both of the intersections at the I-805 ramps currently operate at deficient LOS and the project does not worsen the existing condition. The project contribution to overall traffic at the intersection is less than the allowable 5% threshold; thus, the project impacts at these two locations are cumulative. The project does worsen the existing condition at the intersection of Olympic Parkway and Brandywine Avenue, but the project contribution to overall traffic at the intersection is less than the allowable 5% threshold, therefore the project impact at this location is also cumulative.

The intersection of La Media Road and Santa Luna Street is forecasted to operate at LOS E during the AM peak hour and the project contribution to overall traffic at the intersection is greater than the allowable 5% threshold, thus generates a **direct impact**.

Table 5.1b presents the results of the peak hour intersection analysis for the updated project trip generation for intersections with impacts identified under the original project trip generation. The updated level of service worksheets are also provided in **Appendix B**. The following describes the updated operations analysis for these locations:

TABLE 5.1
EXISTING PLUS PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE

- Olympic Parkway / I-805 SB Ramps (p.m. peak) – Operates at deficient LOS with the current project description, remains cumulative impact.
- Olympic Parkway / I-805 NB Ramps (a.m. peak) – Operates at deficient LOS with the current project description, remains cumulative impact.
- Olympic Parkway / Brandywine Avenue (p.m. peak) – Operates at deficient LOS with the current project description, remains cumulative impact.
- La Media Road / Santa Luna Street (a.m. peak) – The updated project trip generation reduces the delay for the intersection of La Media Road and Santa Luna Street, resulting in LOS C. Therefore, there is no longer an impact at this intersection and no mitigation is required. This intersection was particularly sensitive because 100% of project traffic must pass through this intersection to access the site.

Note that the impacts identified on the I-805 ramps cannot be mitigated through payment of Transportation Development Impact Fees (TDIF) because they are Caltrans owned facilities. At the time this report was prepared, no feasible mitigation measures or fee programs were in place to mitigate the identified cumulative impacts at the I-805/Olympic Parkway ramps or through the interchange. Therefore, these impacts are forecast to be significant and unavoidable. The intersection of Olympic Parkway and Brandywine Avenue can be mitigated through payment of TDIF.

The results of the roadway segment analysis are summarized in **Table 5.2**. As shown in Table 5.2, two segments of Olympic Parkway are forecast to operate at LOS D, E or F, resulting in a cumulative project impact:

- Olympic Parkway: Brandywine Avenue to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Heritage Road

The portion of trips added to the segments with LOS D, E, or F is less than 5%. Therefore, the impacts are determined to be cumulative based on the City's Thresholds of Significance criteria.

Table 5.2b presents the results of the roadway segment analysis for the updated project trip generation for roadway segments with impacts identified under the original project trip generation. Although the average daily traffic (ADT) with the updated project slightly decreases, the two segments of Olympic Parkway continue to operate at a deficient LOS. The portion of trips added to these segments is less than 5% and/or falls under the significant criteria for daily traffic volume (800 vehicles per day). Therefore, the impacts remain cumulative. Cumulative impacts are mitigated through payment of TDIF.

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	40.9	D	**64.7**	**E**	✓	1.11%	/	1.10%	**Cumulative Impact**
2.	805 NB Ramps & Olympic Pkwy	**71.2**	**E**	39.8	D	✓	1.41%	/	1.73%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave	44.0	D	**65.8**	**E**	✓	1.89%	/	2.33%	**Cumulative Impact**
4.	Olympic Pkwy & Heritage Road	50.2	D	26.0	C		2.44%	/	3.81%	
5.	La Media Rd & Olympic Pkwy	43.4	D	34.0	C		5.16%	/	6.85%	
6.	La Media Rd & Santa Venetia St	45.9	D	17.6	B		8.70%	/	17.29%	
7.	La Media Rd & Birch Rd	54.2	D	24.2	C		11.96%	/	35.52%	
8.	SR-125 SB Ramps & Birch Rd	31.5	C	31.9	C		2.75%	/	2.53%	
9.	SR-125 NB Ramps & Birch Rd	3.5	A	6.0	A		0.98%	/	1.21%	
10.	La Media Rd & Santa Luna St**	**56.7**	**E**	9.0	A	✓	28.26%	/	112.42%	**Direct Impact**
11.	I-805 SB Ramps & Main Street	17.0	B	22.3	C		0.00%	/	0.00%	
12.	I-805 NB Ramps & Main Street	18.9	B	26.5	C		0.00%	/	0.00%	
14.	La Media Road & Main Street (1)	--	A	--	A		100%	/	100%	
20.	Main Street & Project Access B (1)	--	A	--	A		100%	/	100%	
21.	Main Street & Project Access A (1)	--	A	--	A		100%	/	100%	

Source: Fehr & Peers, 2015 **Notes:** (1) To be constructed by the Village 4 south project. Refer to Figure 5-1.

TABLE 5.1b
UPDATED EXISTING PLUS PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	40.7	D	**64.3**	**E**	✓	0.91%	/	0.92%	**Cumulative Impact**
2.	805 NB Ramps & Olympic Pkwy	**70.4**	**E**	39.2	D	✓	1.16%	/	1.44%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave	43.7	D	**61.8**	**E**	✓	1.02%	/	1.29%	**Cumulative Impact**
10.	La Media Rd & Santa Luna St**	25.3	C	9.1	A		10.62%	/	94.27%	**NO**

Source: Fehr & Peers, 2016

TABLE 5.2
EXISTING PLUS PROJECT CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln	39,983	50,000	B	530	1.32%	-	No
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	49,391	50,000	C	883	1.79%	-	No
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	53,145	50,000	**D**	883	1.66%	**-**	**Cumulative Impact**
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln w/RM	53,925	50,000	**D**	1,236	2.29%	**-**	**Cumulative Impact**
Olympic Pkwy	Heritage Road	Santa Venetia Street	6-Ln w/RM	49,997	50,000	C	1,765	3.53%	-	
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln w/RM	47,570	50,000	C	1,765	3.71%	-	No
Olympic Pkwy	La Media Road	East Palomar Street	6-Ln w/RM	32,097	50,000	A	1,059	3.30%	-	No
Olympic Pkwy	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	36,614	50,000	A	1,059	2.89%	-	No
Birch Rd	La Media Road	Magdalena Avenue	6-Ln w/RM	9,584	40,000	A	424	4.42%	-	No
Birch Rd	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	11,164	40,000	A	424	3.79%	-	No

TABLE 5.2
EXISTING PLUS PROJECT CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	31,341	50,000	A	0	0.00%	-	No
Main St	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	23,065	50,000	A	0	0.00%	-	No
Main St	Brandywine Avenue	Heritage Rd	6-Ln w/RM	10,865	50,000	A	0	0.00%	-	No
Main St[(1)]	Heritage Road	Project Access	Does Not Exist							
Main St[(1)]	Project Access	La Media Road	2-Ln w/TWLTL	3,530	12,000	A	3,530	100%	-	No
Main St	La Media Road	SR-125 SB Ramps	6-Ln w/RM	Does Not Exist						
Main St	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main St	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist							
Otay Valley Rd	Main Street	SR-125	Does Not Exist							

TABLE 5.2
EXISTING PLUS PROJECT CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Heritage Rd	Santa Victoria Road	Main Street	6-Ln w/RM				Does Not Exist			
Heritage Rd	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	8,787	12,000	A	0	0.00%	-	No
La Media Rd	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	19,514	50,000	A	3,106	15.92%	-	No
La Media Rd	Santa Venetia Street	Birch Road	6-Ln w/RM	14,621	50,000	A	3,106	21.25%	-	No
La Media Rd	Birch Road	Santa Luna Street	6-Ln w/RM	5,602	50,000	A	3,530	63.01%	-	No
La Media Rd[(1)]	Santa Luna Street	Main Street	4-Ln w/RM*	3,530	30,000	A	3,530	100%	-	No

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(1) Existing plus project conditions assumes Main Street is not constructed east of Heritage Road. The project will construct portions of Main Street west of La Media road to the project site as a two lane roadway. The project will also construct La Media Road from Santa Luna to Main Street as a four lane road.

Source: Fehr & Peers, 2016

TABLE 5.2b
UPDATED EXISTING PLUS PROJECT CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic	Oleander	Brandywine	6-Ln w/RM	53,000	50,000	**D**	738	1.39%	-	**Cumulative**
Olympic	Brandywine	Heritage Road	6-Ln w/RM	53,723	50,000	**D**	1,033	1.92%	-	**Cumulative**

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(1) Existing plus project conditions assumes Main Street is not constructed east of Heritage Road. The project will construct portions of Main Street west of La Media road to the project site as a two lane roadway. The project will also construct La Media Road from Santa Luna to Main Street as a four lane road.

Source: Fehr & Peers, 2016

6.0 NEAR TERM (2018) CONDITIONS

The City of Chula Vista's Growth Management Program (GMP) requires the analysis of roadway segments under near term conditions on an annual basis when existing operating conditions along a roadway reach or exceed the LOS D threshold. As shown in the existing conditions analysis, the following roadway segments currently operate at LOS D, E or F within the study area:

- Olympic Parkway: Brandywine Avenue to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Heritage Road

The City conducts annual monitoring of these roadways to assess the existing peak two hour performance along these roadways based on travel time, speed and arterial performance. The GMP requires that these roadways maintain LOS D or better conditions during the two hour period in order to comply with the Growth Management Ordinance.

In April 2011, City of Chula Vista conducted a study to assess the available capacity along these critical roadways and determined that once the 2,463rd building permit is issued, the capacity along Olympic Parkway may be exceeded. Therefore, the following condition has been set forth to ensure compliance with the GMOC thresholds:

> Prior to issuance of the 2,463rd building permit for development east of I-805, the applicant may:
>
> - Prepare a traffic study that demonstrates to the satisfaction of the City Engineer that the circulation system has available capacity without exceeding the GMO traffic standards, OR
> - Demonstrate that other improvements will be constructed by the project that will provide the additional necessary capacity to comply with the GMO traffic thresholds to the satisfaction of the City Engineer.

The proposed project was previously 396 residential units. At the time of the original TIA, construction was anticipated to begin in 2018. All 181 multi-family units would be constructed within a 12 month period with single family units constructed over a period of three years. The proposed project is now 350 residential units, including 275 multi-family units. Therefore, it is assumed a similar schedule would be implemented once construction begins, although the start year may be delayed. Therefore, the project will likely add a nominal amount of traffic to the roadway system in 2018 resulting in no near term impacts to Olympic Parkway.

7.0 MID-TERM (2020) PLUS PROJECT

The project is anticipated to be fully constructed (previously 396 units, now 350 units) by 2020. For this study scenario, the mid-term 2020 traffic volumes were forecast based on volumes reported in the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014).* The volumes reported in that study included residential land uses in Village 4 South, which is denser than proposed in this traffic impact analysis report. As a result, the volumes forecast using the SANDAG Series 11 "Southbay 2" model are a conservative estimate of the long term volumes in the study area. Traffic volumes reported for year 2020 in the University Villages study are provided in **Appendix C**. **Figure 7-1** illustrates the mid-term 2020 peak hour volumes and geometries for the study intersections evaluated in this report. Daily traffic volumes and the study area roadway network are summarized in **Figure 7-2**.

Analysis of 2020 considers the following roadway network improvements are **constructed by others:**

- Extension of Heritage Road from Santa Victoria Road to Main Street
- Improvements to the Heritage Road / Main Street intersection (not analyzed in this study scenario due to nominal assignment of project related traffic volumes through this intersection)
- Extension of Main Street east of La Media Road into Village 8
- Extension of Otay Valley Road south of Main Street into Village 8
- Main Street/La Media Road couplet

The project is assumed to construct Main Street west of the La Media Road/Main Street couplet to provide access to the project access intersections as a 2 lane roadway with a center turn lane. Using the long term forecast volumes and geometries presented in this section of the report, peak hour intersection and daily roadway segment operating conditions were analyzed for the long term 2020 study scenario.

If the first final map is submitted for approval prior to the construction of identified improvements by others and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

A. Development of Village 4 South shall stop until those assumed future roadways are constructed by others as presently planned; or
B. City and the applicant shall meet to determine the need for the incomplete roadway segments. Because of a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and level

of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

C. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or
D. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

The results of the peak hour analysis are summarized in **Table 7.1** with level of service worksheets provided in **Appendix D**. As shown, several intersections are forecast to operate at LOS E or F in either the a.m. or p.m. peak period by year 2020:

- I-805 SB Ramps & Olympic Pkwy
- I-805 NB Ramps & Olympic Pkwy
- Olympic Pkwy & Brandywine Ave
- Olympic Pkwy & Heritage Road

Project trips added to the deficient intersections fall below the 5% significant impact threshold. Therefore, the impacts are identified as cumulative and will be mitigated through the payments to the TDIF program. Extension of Main Street, which is included in the TDIF program and is included in the City's General Plan Circulation Element, will reduce reliance on Olympic Parkway and La Media Road and will result in improved operating conditions at these intersections.

Although the project trip generation has decreased, the intersection level of service remains unchanged because the total intersection volumes are directly from the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014)*. However, the project contribution percentages change as depicted in **Table 7.1b** for the four intersections identified as having impacts above. Therefore, the intersection of Olympic Parkway and Brandywine Avenue as well as Olympic Parkway and Heritage Road can be mitigated through payment of TDIF. However, as previously mentioned, the I-805 ramps cannot be mitigated through the TDIF program.

The results of the mid-term 2020 roadway segment analysis, summarized in **Table 7.2**, shows that four segments of Olympic Parkway are forecast to operate at LOS D, E or F under Mid-Term (2020) Conditions:

- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Brandywine Avenue
- Olympic Parkway: Brandywine Avenue to Heritage Road

Although segments of Main Street are forecast to operate at LOS D, the intersections along these segments are forecast to operate at acceptable LOS D or better during the peak period. As a result, there are no project related impacts along these segments.

Table 7.2b presents the results of the roadway segment analysis for the updated project trip generation for roadway segments with impacts identified under the original project trip generation. The average daily traffic (ADT) remains the same because the segment volume is directly from the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014)*. However, the project contribution percentages change. The project contribution to these segments fall below the level of significance criteria for daily traffic volume (800 vehicles per day) and/or account for less than 5% of the total traffic on these segments. As a result, the impacts along these segments are determined to be cumulative impacts and are mitigated through the payment of TDIF fees.

TABLE 7.1
MID-TERM (2020) CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips (AM/PM)			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	**93.4**	**F**	**136.6**	**F**	✓	1.4	/	1.33%	**Cumulative Impact**
2.	I-805 NB Ramps & Olympic Pkwy	**128.3**	**F**	**141.4**	**F**	✓	1.60	/	1.70%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave	**97.2**	**F**	**83.6**	**F**	✓	1.76	/	1.99%	**Cumulative Impact**
4.	Olympic Pkwy & Heritage Road	**79.3**	**E**	49.5	D	✓	2.32	/	2.62%	**Cumulative Impact**
5.	La Media Rd & Olympic Pkwy	56.4	D	46.1	D		2.86	/	3.34%	
6.	La Media Rd & Santa Venetia St	54.1	D	37.7	D		4.12	/	5.17%	
7.	La Media Rd & Birch Rd	41.0	D	54.7	D		6.70	/	6.00%	
8.	SR-125 SB Ramps & Birch Rd	43.4	D	49.7	D		4.25	/	4.27%	

TABLE 7.1
MID-TERM (2020) CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips (AM/PM)			Impact?
		Delay	LOS	Delay	LOS					
9.	SR-125 NB Ramps & Birch Rd	9.2	A	9.3	A		2.45	/	2.49%	
10.	La Media Rd & Santa Luna St	8.0	A	8.2	A		15.8	/	14.62%	
11.	I-805 SB Ramps & Main Street	33.5	C	52.6	D		0.00	/	0.00%	
12.	I-805 NB Ramps & Main Street	30.2	C	38.7	D		0.00	/	0.00%	
14.	La Media Road SB & Main Street WB	6.4	A	2.6	A		47.88%	/	28.77%	
15.	La Media Road NB & Main Street WB	11.6	B	10.2	A		19.43%	/	32.99%	
16.	La Media Road SB & Main Street EB	4.7	A	2.7	A		53.0	/	32.15%	
17.	La Media Road NB & Main Street WB	9.0	A	7.2	A		28.4	/	24.05%	
18.	SR-125 SB Ramps & Main Street	Does Not Exist								
19.	SR-125 NB Ramps & Main Street	Does Not Exist								
20.	Main Street & Project Access B	--	A	--	A		100%	/	100%	
21.	Main Street & Project Access A	--	A	--	A		100%	/	100%	

Source: Fehr & Peers, 2015

TABLE 7.1b
UPDATED MID-TERM (2020) CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips (AM/PM)			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	**93.4**	**F**	**136.6**	**F**	✓	1.18%	/	1.11%	**Cumulative Impact**
2.	I-805 NB Ramps & Olympic Pkwy	**128.3**	**F**	**141.4**	**F**	✓	1.34%	/	1.42%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave	**97.2**	**F**	**83.6**	**F**	✓	1.47%	/	1.66%	**Cumulative Impact**
4.	Olympic Pkwy & Heritage Road	**79.3**	**E**	49.5	D	✓	1.94%	/	2.19%	**Cumulative Impact**

Source: Fehr & Peers, 2016

TABLE 7.2
MID-TERM (2020) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project (1)	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln	64,000	50,000	**F**	530	0.83%	No	**Cumulative Impact**
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	71,000	50,000	**F**	883	1.24%	No	**Cumulative Impact**
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	65,400	50,000	**F**	883	1.35%	No	**Cumulative Impact**
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln w/RM	59,500	50,000	**E**	1,236	2.08%	No	**Cumulative Impact**
Olympic Pkwy	Heritage Road	Santa Venetia	6-Ln w/RM	46,200	50,000	C	1,765	3.82%	-	No
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln w/RM	38,300	50,000	B	1,765	4.61%	-	No
Olympic Pkwy	La Media Road	East Palomar	6-Ln w/RM	27,700	50,000	A	177	0.64%	-	No
Olympic Pkwy	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	47,200	50,000	C	177	0.37%	-	No
Birch Rd	La Media Road	Magdalena Avenue	6-Ln w/RM	27,500	40,000	A	1,059	3.85%	-	No
Birch Rd	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	31,700	40,000	B	1,059	3.34%	-	No
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	50,100	50,000	D	0	0.00%	Yes	No

TABLE 7.2
MID-TERM (2020) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project (1)	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Main St	Oleander Avenue	Brandywine Avenue	6-Ln w/TWL	51,300	50,000	D	0	0.00%	Yes	No
Main St	Brandywine Avenue	Heritage Rd	6-Ln w/RM	39,200	50,000	B	0	0.00%	-	No
Main St	Heritage Road	Project Access					Does Not Exist			
Main St	Project Access	La Media Road	2-Ln w/RM	3,530	12,000	A	3,530	100%	_	No
Main St	La Media Road	SR-125	6-Ln w/RM*	18,500	50,000	A	0	0.00%	-	No
Main St	SR-125 SB Ramps	SR-125 NB Ramps					Does Not Exist			
Main St	SR-125	Eastlake Parkway					Does Not Exist			
Otay Valley Rd	Main Street	SR-125					Does Not Exist			
Heritage Rd	Olympic Parkway	Santa Victoria Road	6-Ln w/RM*	17,500	50,000	A	0	0%	-	No
Heritage Rd	Santa Victoria Road	Main Street	6-Ln w/RM*	17,500	50,000	A	0	0%	-	No

TABLE 7.2
MID-TERM (2020) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project (1)	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Heritage Rd	Main Street	Avenida De Las Vistas	2-Ln w/TWL	17,400	50,000	A	0	0%	-	No
La Media Rd	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	34,600	50,000	A	2,118	6.12%	-	No
La Media Rd	Santa Venetia Street	Birch Road	6-Ln w/RM	31,700	50,000	A	2,118	6.68%	-	No
La Media Rd	Birch Road	Santa Luna Street	6-Ln w/RM	20,700	50,000	A	3,530	17.05%	-	No
La Media Rd	Santa Luna Street	Main Street	4-Ln w/RM*	19,500	30,000	A	3,530	18.10%	-	No

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(1) **Source:** University Villages TIA, Chen Ryan, 2014.

Source: Fehr & Peers, 2015

TABLE 7.2b
UPDATED MID-TERM (2020) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project (1)	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln	64,000	50,000	**F**	443	0.69%	No	**Cumulative Impact**
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	71,000	50,000	**F**	738	1.04%	No	**Cumulative Impact**
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	65,400	50,000	**F**	738	1.13%	No	**Cumulative Impact**
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln w/RM	59,500	50,000	**E**	1,033	1.74%	No	**Cumulative Impact**

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(2) **Source:** University Villages TIA, Chen Ryan, 2014.

Source: Fehr & Peers, 2016

8.0 LONG TERM (2030) PLUS PROJECT

The project is anticipated to construct all residential units (396 du's) by year 2020. The long term 2030 study scenario assumes buildout of the project's General Plan land use and General Plan roadway network. Traffic volumes evaluated in this study scenario were forecast based on volumes reported in the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014)* and were forecast using the SANDAG Series 11 "Southbay 2" model. As stated previously, the land uses assumed in the model for the project site are denser than those proposed in this study. Therefore, the traffic volumes presented are a conservative estimate of the long term volumes in the study area. Traffic volumes reported for year 2030 in the University Villages study are provided in **Appendix E**. **Figure 8-1** illustrates the long term 2030 peak hour volumes and geometry for the study intersections evaluated in this report. Daily traffic volumes and the roadway network evaluated in this report are summarized in **Figure 8-2**.

Analysis of 2030 considers buildout of the City of Chula Vista General Plan Circulation Element. Therefore, future roadways considered **to be built by others** in the year 2030 analysis include:

- Extension of Heritage Road from Olympic Parkway to Main Street as a six lane Prime Arterial
- Extension of Main Street from Heritage Road to La Media Road
- Otay Valley Road from Main Street to Village 9 including crossing at SR-125
- Main Street from La Media Road to East Lake Parkway including bridge at SR-125
- Construction of SR-125 Ramps at Main Street

If the first final map is submitted for approval prior to the construction of identified improvements by others and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

A. Development of Village 4 South shall stop until those assumed future roadways are constructed by others as presently planned; or
B. City and the applicant shall meet to determine the need for the incomplete roadway segments. Because of a number of factors, including changes to the tolling structure at SR-125., may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and level of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or
C. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or
D. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

At the time Main Street is constructed from Heritage Road to La Media Road, the project should conduct warrants and install traffic signals at the two project access intersections if warrants are met. Using the long term forecast volumes and geometries presented in this section of the report, peak hour intersection and daily roadway segment operating conditions were analyzed for the long term 2030 study scenario. The results of the peak hour analysis are summarized in **Table 8.1** with level of service worksheets provided in **Appendix F**. As shown, the ramps at I-805 are forecast to operate at deficient LOS by year 2030. The project results in a cumulative impact at both intersections as the project contribution to these intersections is less than 5% of the total inbound volume.

Although the project trip generation has decreased, the intersection level of service remains unchanged because the total intersection volume is directly from the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014)*. However, the project contribution percentages change as depicted in **Table 8.1b** for the I-805 ramps identified as having impacts above. As previously mentioned, Caltrans facilities cannot be mitigated through the TDIF program and the time this report was prepared, no feasible mitigation measures or fee programs were in place to mitigate the cumulative identified impacts at the I-805/Olympic Parkway ramps or through the interchange. Thus, these impacts are forecasted to be significant and unavoidable.

The results of the long term 2030 roadway segment analysis, summarized in **Table 8.2**, shows that several roadway segments are forecast to operate at LOS D or LOS E by year 2030. None of the roadway segments are forecast to operate at LOS F. Of those segments forecast to operate at LOS D or LOS E, the adjacent intersections are forecast to operate at acceptable levels of service. As stated in the City's Thresholds of Significance, no impacts occur along deficient segments where adjacent intersections operating at acceptable levels of service. The segment of Olympic Parkway from I-805 to Oleander Avenue is forecast to operate at a deficient LOS and the adjacent I-805 NB Ramp is forecast to operate at LOS E. Therefore, the project is determined to result in a cumulative impact on this segment. The cumulative impact is mitigated through the payment toward the TDIF program.

Segments of Main Street and La Media Road are classified as either Town Center or Gateway arterials. In accordance with the General Plan, the allowable level of service for these classifications is LOS D or better. Although segments of both La Media Road and Main Street are forecast to operate at LOS D, they are not forecast to be impacted by the project.

Table 8.2b presents the results of the roadway segment analysis for the updated project trip generation for the one roadway segment with an impact identified under the original project trip generation. The average daily traffic (ADT) remains the same because the segment volume is directly from the *University Villages Traffic Impact Analysis Report (Chen Ryan 2014)*. However, the project contribution percentages

change. The project contribution to the one segment falls below the level of significance criteria for daily traffic volume (800 vehicles per day) and account for less than 5% of the total traffic on this segment. As a result, the impact is determined to be cumulative and are mitigated through the payment of TDIF fees.

TABLE 8.1
LONG TERM (2030) CONDITIONS INTERSECTION LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	49.3	D	**109.0**	**F**	✓	0.84%	/	0.84%	**Cumulative Impact**
2.	805 NB Ramps & Olympic Pkwy	**75.3**	**E**	52.8	D	✓	0.86%	/	1.07%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave	37.7	D	52.7	D		1.14%	/	1.43%	
4.	Olympic Pkwy & Heritage Road	53.6	D	54.8	D		1.00%	/	1.24%	
5.	La Media Rd & Olympic Pkwy	54.2	D	49.4	D		1.50%	/	1.76%	
6.	La Media Rd & Santa Venetia St	52.9	D	37.4	D		2.20%	/	3.33%	
7.	La Media Rd & Birch Rd	48.9	D	54.5	D		2.33%	/	2.68%	
8.	SR-125 SB Ramps & Birch Rd	34.0	C	14.9	B		0.40%	/	0.46%	
9.	SR-125 NB Ramps & Birch Rd	19.7	B	14.6	B		0.41%	/	0.44%	
10.	La Media Rd & Santa Luna St	14.5	B	28.9	C		4.75%	/	5.91%	
11.	I-805 SB Ramps & Main Street	31.1	C	41.0	D		0.43%	/	0.45%	
12.	I-805NB Ramps & Main Street	35.8	D	51.1	D		0.96%	/	1.00%	
13.	Heritage Road & Main Street	46.7	D	54.7	D		1.02%	/	1.09%	

TABLE 8.1
LONG TERM (2030) CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection	AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips			Impact?
	Delay	LOS	Delay	LOS					
14. La Media Road SB & Main Street WB	20.6	C	39.9	D		7.54%	/	8.39%	
15. La Media Road NB & Main Street WB	14.9	B	19.6	B		3.41%	/	3.85%	
16. La Media Road SB & Main Street EB	16.2	B	37.7	D		8.82%	/	7.10%	
17. La Media Road NB & Main Street WB	20.5	C	11.8	B		7.45%	/	7.83%	
18. SR-125 SB Ramps & Main Street	13.5	B	17.0	B		1.89%	/	2.26%	
19. SR-125 NB Ramps & Main Street	17.2	B	27.8	C		0.92%	/	0.98%	
20. Main Street & Project Access B		A		A		100%	/	100%	
21. Main Street & Project Access A		A		A		100%	/	100%	

Source: Fehr & Peers, 2015

TABLE 8.1b
UPDATED LONG TERM (2030) CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection		AM Peak Hour		PM Peak Hour		LOS E/F	% Project Trips			Impact?
		Delay	LOS	Delay	LOS					
1.	I-805 SB Ramps & Olympic Pkwy	49.3	D	**109.0**	**F**	✓	0.70%	/	0.70%	**Cumulative Impact**
2.	805 NB Ramps & Olympic Pkwy	**75.3**	**E**	52.8	D	✓	0.72%	/	0.89%	**Cumulative Impact**

Source: Fehr & Peers, 2016

TABLE 8.2 LONG TERM (2030) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project [(1)]	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	45,500	50,000	C	282	0.62%	-	No
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	459	0.81%	**No**	**Cumulative Impact**
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln Prime	48,700	50,000	C	459	0.94%	-	No
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln Prime	42,200	50,000	B	812	1.92%	-	No
Olympic Pkwy	Heritage Road	Santa Venetia Street	6-Ln Prime	36,100	50,000	A	883	2.44%	-	No
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln Prime	29,800	50,000	A	883	2.96%	-	No
Olympic Pkwy	La Media Road	East Palomar Street	6-Ln Prime	27,100	50,000	A	177	0.65%	-	No
Olympic Pkwy	East Palomar Street	SR-125 SB Ramps	6-Ln Prime	47,600	50,000	C	177	0.37%	-	No
Birch Rd	La Media Road	Magdalena Avenue	4-Ln Major	31,300	40,000	B	141	0.45%	-	No
Birch Rd	Magdalena Avenue	SR-125 SB Ramps	4-Ln Major	31,000	40,000	B	141	0.46%	-	No
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	51,100	50,000	**D**	424	0.83%	**Yes**	No

TABLE 8.2 LONG TERM (2030) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project [(1)]	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Main St	Oleander Avenue	Brandywine Avenue	6-Ln Prime	54,900	50,000	**D**	424	0.77%	**Yes**	No
Main St	Brandywine Avenue	Heritage Rd	6-Ln Prime	49,300	50,000	C	424	0.86%	-	No
Main St	Heritage Road	Project Access	6-Ln Prime	46,609	50,000	C	988	2.01%	-	No
Main St	Project Access	La Media Road	6-Ln Prime	48,193	50,000	C	2,542	5.17%	-	No
Main St	La Media Road	SR-125 SB Ramps	6-Ln Prime	54,800	50,000	**D**	883	1.61%	**Yes**	No
Main St	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Gateway**	54,900	54,500	**D**	530	0.96%	**Yes**	No
Main St	SR-125 NB Ramps	Eastlake Parkway	6-Ln Gateway**	60,500	54,500	**D**	353	0.58%	**Yes**	No
Otay Valley Rd	Main Street	SR-125	4-Ln Major	22,900	30,000	B	282	1.23%	-	No
Heritage Rd	Olympic Parkway	Santa Victoria Road	6-Ln Prime	36,500	50,000	A	106	0.29%	-	No
Heritage Rd	Santa Victoria Road	Main Street	6-Ln Prime	45,600	50,000	C	106	0.23%	-	No
Heritage Rd	Main Street	Avenida de las Vistas	6-Ln Prime	60,700	50,000	**E**	353	0.58%	**Yes**	No

TABLE 8.2 LONG TERM (2030) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project [(1)]	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
La Media Rd	Olympic Parkway	Santa Venetia Street	6-Ln Prime	33,700	50,000	A	1,236	3.64%	-	No
La Media Rd	Santa Venetia Street	Birch Road	6-Ln Prime	33,900	50,000	A	1,236	3.64%	-	No
La Media Rd	Birch Road	Santa Luna Street	6-Ln Prime	21,700	50,000	A	1,377	6.52%	-	No
La Media Rd	Santa Luna Street	Main Street	4-Ln Town Center**	21,100	30,000	A	1,377	7.06%	-	No

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(1) Source: University Villages TIA, Chen Ryan, 2014.

Source: Fehr & Peers, 2015

TABLE 8.2b UPDATED LONG TERM (2030) CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Facility	From	To	Cross-Section	ADT w/ Project [(1)]	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (>800)	Project Contribution (>5%)	Intersections @ LOS D or Better?	Impact?
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	384	0.68%	**No**	**Cumulative Impact**

Notes:
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

(2) Source: University Villages TIA, Chen Ryan, 2014.

Source: Fehr & Peers, 2016

9.0 SITE ACCESS AND CIRCULATION

Future Road Connections

The project is located southwest of the future intersection of Main Street and La Media Road in the Otay Ranch Village 4. As neither Main Street nor La Media Road currently connect to the project site, it will be the project's responsibility to construct the necessary access roads to connect the project to the existing circulation system. The project will be responsible for constructing Main Street as a six lane Prime along the project frontage. However, this full cross-section will not be needed until Main Street is extended from Heritage Road to the project access. Should the Village 4 South project move forward in advance of planned roadway improvements to be constructed by others, the project would also be required to construct La Media Road Street from Santa Luna to Main Street to provide access to the site.

Site Access

The project site plan was provided previously in Figure 1-2. As illustrated, the project will take access at two signalized intersections that have been evaluated in each of the study scenarios. At full buildout, each of the two access intersections will be signalized. Traffic signal warrants are provided in **Appendix G** and summarized in **Table 9.1** below. As shown, the traffic signal at Access A meets the warrants as established in the California MUTCD (2014). The traffic signal at Access B does not meet the warrants based on the planning level warrant analysis due to low volume on the side street. However, alternative traffic control devices at this intersection are not reasonable due to the anticipated high travel speeds and high volumes on Main Street. Additional warrants should be conducted once Main Street is constructed to validate the assumptions in this report and to fully assess the feasibility of a traffic signal at this location.

TABLE 9.1

TRAFFIC SIGNAL WARRANT ASSESSMENT (HORIZON YEAR 2030 WITH MAIN STREET EXTENSION)

Intersection	Condition A: Minimum Vehicular Volume	Condition B: Interruption of Continuous Traffic	Conditions A & B: Combined @ 80% of Warrant Thresholds	Traffic Signal Warranted?
Main Street @ Access A (Int. 21)	No	Yes	No	Yes
Main Street @ Access B (Int. 20)	No	No	No	No

Source: Fehr & Peers, 2015

In the near term and long term (2020), prior to the construction of Main Street west of the project site, the two project access points may be controlled by STOP signs on the minor street approach as traffic signal warrants may not be met under existing plus project and mid-term (2020 conditions).

Internal Roadways

All internal roadways within the project site are proposed as two-lane local streets with a typical cross-section of 52 to 59 feet. All internal roadways will have sidewalks and on-street parking. The sidewalks will connect the community to the proposed sidewalks along the future Main Street extension. No bicycle lanes will be provided within the community as the roads are designed to be low volume, low speed streets. Class II bicycle lanes are proposed along the future alignment of Main Street and along internal street C.

Pedestrian and Bicycle Connectivity

The traffic signals proposed by long term year 2020 will provide pedestrian and bicycle connectivity across and along Main Street within the boundary of the project site. These signals, bicycle lanes, and planned sidewalks and crosswalks will connect the residential community to activity centers such as the Town Center planned in Village 8 West and the community park planned west of La Media Road at Santa Luna as well as transit service planned along La Media Road and Main Street.

10.0 CALTRANS FACILITY ANALYSIS

The project will add new trips to SR-125 and I-805 within the study area. Consistent with the Traffic Impact Study Guidelines prepared by SANTEC/ITE for the San Diego region, two levels of analysis were conducted for state owned facilities in the project study area: Freeway Segment Analysis and Ramp Intersection Analysis. The following section outlines the results of the freeway facility analysis for all study years.

Freeway Segment Analysis

The freeway segment analysis conducted in this report was consistent with analysis procedures accepted by Caltrans and are based on the Highway Capacity Manual "Basic Freeway Segment" methodology for calculating peak hour volumes. Daily traffic volumes used in this analysis were reported by Caltrans and in the SANDAG modeling efforts conducted for the University Villages Traffic Impact Analysis Report (Chen Ryan, 2014).

Peak hour volumes were derived from the daily traffic volumes based on standard factors as described in the Highway Capacity Manual:

- Directional Distribution (D Factor) determines the higher direction of travel (northbound/southbound or eastbound/westbound) based on data collected by Caltrans. Where data was not available and for future scenarios, the D Factor is assumed to be 0.58.
- Peak Hour Factor (K Factor) determines the percentages of trips that occur during the highest one hour period on a typical weekday.
- Truck Factors (T Factor) describes the percentages of trucks that were observed or are assumed to travel along the freeway segments on a daily basis. Where data was not available, the minimum truck percentage assumed was 5%.

Capacity of the freeway segment is based on 2,400 passenger car vehicles per hour per lane. To calculate the volume to capacity ratios, the peak hour volumes were converted from total vehicles to passenger car equivalent vehicles using the heavy vehicle adjustment factor, peak hour factor and number of mainline lanes along the facility. Freeway segment levels of Service are based on the calculated volume to capacity (V/C ratio) for each segment. Level of service thresholds are provided in **Table 10.1**.

The results of the freeway segment operating conditions for Existing Plus Project, 2020 and 2030 are summarized in **Tables 10.2 through 10.4.** As shown in the tables, I-805 and SR-125 operate at acceptable levels of service through year 2020. By year 2030, segments of I-805 through the study area are forecast to operate at LOS E or F. Caltrans goal for acceptable operating conditions is LOS D or better.

In accordance with the SANTEC / ITE traffic study guidelines, a significant impact along a freeway segment is forecast to occur if one of the following two conditions exist:

- If the level of service with Project is LOS E, a change in V/C ratio of greater than 0.01 (1%) results in a significant impact
- If the level of service with Project is LOS F, a change in V/C ratio of greater than 0.005 (0.5%) results in a significant impact

TABLE 10.1 FREEWAY SEGMENT LEVEL OF SERVICE THRESHOLDS

Level of Service	V/C	Description of Delay	Description
A	< 0.41	None	Free flow
B	0.42 – 0.62	None.	Free flow
C	0.63 – 0.79	None to Minimal	Stable flow
D	0.80 – 0.93	Minimal to Substantial	Approaching Unstable Flow
E	0.93 – 1.0	Substantial to Significant	Extremely Unstable Flow
F	>1.0	Congested	Forced Flow

Source: 2000 Highway Capacity Manual

Intersection Lane Volume (ILV) Analysis

As described in Chapter 2.0 of this report, the ILV methodology evaluates the ratio of volume through the ramp intersections with the available capacity based on the signal phasing at signalized intersections. The analysis evaluates the conditions as an isolated intersection, which does not consider the overall relationship of one ramp intersection to another. With this in mind, the ILV analysis presented in this report is for information only. **Table 10.5** summarizes the results of the analysis for all study scenarios. Detailed worksheets are provided in **Appendix H**.

As shown in Table 10.5, both ramps at I-805 and Olympic Parkway either currently operate over capacity or are forecast to operate deficiently in the Long-Term study scenarios. In addition, the I-805 SB Ramps at Main Street also operate over capacity in all study scenarios.

TABLE 10.2 EXISTING CONDITIONS FREEWAY SEGMENT ANALYSIS

Freeway Segment		Existing ADT	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	153,200	153,486	7.10%	10,897	0.51	4 SOV + 1 Aux	0.92	1.70%	1,218	0.51	B	0.19%	No
	Olympic Pkwy to Main St	121,500	121,786	6.90%	8,403	0.51	4 SOV + 1 Aux	0.93	5.40%	947	0.39	A	0.23%	No
	South of Main St	116,300	116,586	7.10%	8,278	0.58	4 SOV + 1 Aux	0.95	10.30%	1,063	0.44	B	0.25%	No
SR-125	North of Birch Rd	4,800	4,971	7.00%	348	0.58	2 Toll	0.95	5.00%	109	0.05	A	3.45%	No
	Birch Rd to Main St	4,800	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	115	0.05	A	8.20%	No
	South of Main St	4,800	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	115	0.05	A	8.20%	No

Source: Fehr & Peers, 2015

TABLE 10.3 Mid-Term (2020) FREEWAY SEGMENT ANALYSIS

Freeway Segment		2020 ADT	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	209,214	209,500	7.00%	14,665	0.58	4 SOV + 1 Aux	0.92	1.70%	1,865	0.78	C	0.14%	No
	Olympic Pkwy to Main St	229,314	229,600	7.00%	16,072	0.58	4 SOV + 1 Aux	0.92	5.40%	2,081	0.87	D	0.12%	No
	South of Main St	219,814	220,100	7.00%	15,407	0.58	4 SOV + 1 Aux	0.92	10.30%	2,043	0.85	D	0.13%	No
SR-125	North of Birch Rd	15,143	15,400	7.00%	1,078	0.58	2 Toll	0.92	5.00%	348	0.15	A	1.67%	No
	Birch Rd to Main St	25,514	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	584	0.24	A	1.11%	No
	South of Main St	25,514	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	584	0.24	A	1.11%	No

Source: Fehr & Peers, 2015

TABLE 10.4 Long-Term (2030) FREEWAY SEGMENT ANALYSIS

Freeway Segment		2020 ADT	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	271,714	272,000	7.00%	19,040	0.58	4 SOV + 1 Aux + 1 HOV	0.92	1.70%	2,421	1.12	F	0.11%	No
	Olympic Pkwy to Main St	265,657	266,000	7.00%	18,620	0.58	4 SOV + 1 Aux + 1 HOV	0.92	5.40%	2,411	1.12	F	0.13%	No
	South of Main St	257,857	258,000	7.00%	18,060	0.58	4 SOV + 1 Aux + 1 HOV	0.92	10.30%	2,394	1.11	F	0.06%	No
SR-125	North of Birch Rd	30,443	30,700	7.00%	2,149	0.58	2 Toll	0.92	5.00%	694	0.29	A	0.84%	No
	Birch Rd to Main St	34,457	34,600	7.00%	2,422	0.58	2 Toll	0.92	5.00%	783	0.33	A	0.41%	No
	South of Main St	93,714	94,000	7.00%	6,580	0.58	2 Toll	0.92	5.00%	2,126	0.89	D	0.30%	No

Source: Fehr & Peers, 2015

TABLE 10.5 ILV ANALYSIS FOR CALTRANS RAMP INTERSECTIONS

	Peak Hour	Existing Plus Project		2020 Plus Project		2030 Plus Project	
		ILV/Hour	Capacity	ILV/Hour	Capacity	ILV/Hour	Capacity
I-805 SB / Olympic Pkwy	AM	1,253	Capacity	**1,667**	**Over Capacity**	1,447	Capacity
	PM	1,875	**Over Capacity**	**2,334**	**Over Capacity**	**2,051**	**Over Capacity**
I-805 NB / Olympic Pkwy	AM	1,023	Under Capacity	1,430	Capacity	1,206	Capacity
	PM	1,659	**Over Capacity**	**1,979**	**Over Capacity**	**1,840**	**Over Capacity**
SR-125 SB / Birch Road	AM	449	Under Capacity	651	Under Capacity	566	Under Capacity
	PM	421	Under Capacity	622	Under Capacity	552	Under Capacity
SR-125 NB / Birch Road	AM	253	Capacity	492	Under Capacity	515	Under Capacity
	PM	377	Under Capacity	593	Under Capacity	608	Under Capacity
I-805 SB / Main St	AM	831	Under Capacity	**2,000**	**Over Capacity**	**1,714**	**Over Capacity**
	PM	1,002	Under Capacity	**1,977**	**Over Capacity**	**2,094**	**Over Capacity**
I-805 NB / Main St	AM	636	Under Capacity	1,161	Under Capacity	950	Under Capacity
	PM	681	Under Capacity	1,486	Capacity	1,315	Capacity
SR-125 SB / Main Street	AM	*Does Not Exist*				695	Under Capacity
	PM	*Does Not Exist*				947	Under Capacity

SR-125 NB / Main Street	AM	*Does Not Exist*	651	Under Capacity
	PM	*Does Not Exist*	808	Under Capacity

Source: Fehr & Peers, 2015

11.0 VEHICLE MILES TRAVELED ASSESSMENT

Policy Introduction

Vehicle miles traveled (VMT) is a measure of the distance that people travel in a light duty truck or passenger automobile. In can be measured in terms of daily VMT per capita, per household, etc. On September 27, 2013, California Governor Jerry Brown signed SB 743 into law which requires an analysis of vehicle miles traveled (VMT) to identify transportation impacts in a project's environmental impact study. The Office of Planning and Research (OPR) is working on providing guidance on a threshold for determining a VMT impact. Draft guidelines have been released for comments, however no final guidance has been adopted. Since the requirements and guidance is not final, VMT is provided as informational and is used to inform that Air Quality analysis.

VMT Calculation

Planning level estimates of VMT for the Village 4 South project are derived using a select zone analysis from the SANDAG Series 11 "Southbay 2" traffic forecast model for year 2030 'with Main Street' fully connected and year 2030 'without Main Street' connected (in its existing roadway configuration). The proposed project is located in traffic analysis zone 4405, which includes 130 single-family, 620 multi-family units, and 6.2 acres of park in 2030. The Village 4 South project represents a portion of the total residential that is included in the TAZ. The raw model outputs and model network plots are presented in **Appendix I**.

The following output was obtained from the model and is displayed in **Table 11.1**:

- Total daily trips (vehicle trips and person trips) for TAZ 4405
- Total VMT for the TAZ

TABLE 11.1 RAW VMT MODEL OUTPUT

Model	TAZ 4405 Output				
	Person Trips	**Total Vehicle Trips**	**Total External Vehicle Trips**	**Total VMT for TAZ**	**Calculated[1] Average Trip Length**
2030 without Main Street	9,706	6,345	6,224	32,150	5.07
2030 with Main Street	9,706	6,345	6,224	30,602	4.82

[1]Average trip length was calculated using total vehicle trips

Source: SANDAG, 2016 and Fehr & Peers, 2016

To determine the VMT associated with the Village 4 South project we derived the average trip length by dividing the total VMT by the total daily trips, then we multiplied that trip length by the total daily trip generation for the Village 4 South project.

We determined Project VMT for the near term and future conditions using the following assumptions:

- Project VMT for near term conditions: In the near term, Main Street will not be fully constructed. Therefore, we applied the average trip length derived from the 2030 "without Main Street" model output.
- Project VMT for future conditions: Once Main Street is constructed to SR 125, it will provide a direct access point from the project to the freeway. The average trip length is less when Main Street is extended east from Heritage Road to State Route 125 because vehicles' routes are less circuitous. We applied the "with Main Street" model result to estimate the future project VMT.

The VMT estimates are presented in **Table 11.2**.

TABLE 11.2 PROJECT VMT RESULTS

Time Frame	Village 4 South Trip Generation	Average Trip Length	VMT Estimate
Near Term[(1)]	2,950	5.07	14,957
Future [(2)]	2,950	4.82	14,219

Source: SANDAG, 2016 and Fehr & Peers, 2016
[(1)] Main Street in its current configuration
[(2)] Main Street fully connected

The VMT slightly decreases when Main Street is extended east from Heritage Road to State Route 125 because vehicles' routes are less circuitous. Vehicles can now access and depart the project site from Main Street in addition to Olympic Parkway.

12.0 PROJECT IMPACTS AND RECOMMENDED MITIGATION

Project impacts were evaluated based on criteria established in Chapter 2.0 of this traffic impact analysis report and were determined based on thresholds of significance accepted by City of Chula Vista as outlined in the City's Traffic Impact Analysis Guidelines. **Table 12.1** summarizes the operating conditions for the study intersections under all study scenarios evaluated in this report. As shown in Table 12.1, four study intersections are forecast to operate at deficient levels of service. The impacts identified are cumulative as the thresholds of significance were not exceeded on any of the identified study intersections. Payment toward the TDIF program will mitigate project impacts at the City owned intersection.

Table 12.2 summarizes the operating conditions for the study roadway segments under all study scenarios. As shown in Table 11.2, all impacts are identified as cumulative impacts. **Cumulative impacts on City owned roadway segments are mitigated through the payment of TDIF fees.** By Long-Term (2030), most roadway segments are forecast to operate at acceptable levels of service.

Impacts identified on Caltrans owned facilities cannot be mitigated through payment of TDIF fees. At the time this report was prepared, no feasible mitigation measures or fee programs were in place to mitigate the identified impacts at the I-805/Olympic Parkway ramps or through the interchange. Therefore, these impacts are forecast to be significant and unavoidable.

A summary of recommended mitigation measures is provided in **Table 12.3.**

Ultimately, the reduced project size has minimal effect and did not change the conclusions based on the original analysis. The same intersections and roadway segments are significantly impacted.

TABLE 12.1 SUMMARY OF INTERSECTION LEVELS OF SERVICE

	Intersection	Existing Plus Project				2020 Plus Project				2030 Plus Project			
		AM LOS	PM LOS	% Project Trips	Impact	AM LOS	PM LOS	% Project Trips	Impact	AM LOS	PM LOS	% Project Trips	Impact
1.	I-805 SB Ramps & Olympic Pkwy[1]	D	**E**	0.91% / 0.92%	**Cumulative Impact**	**F**	**F**	1.18% / 1.11%	**Cumulative Impact**	D	**F**	0.70% / 0.70%	**Cumulative Impact**
2.	805 NB Ramps & Olympic Pkwy[1]	**E**	D	1.16% / 1.44%	**Cumulative Impact**	**F**	**F**	1.34% / 1.42%	**Cumulative Impact**	**E**	D	0.72% / 0.89%	**Cumulative Impact**
3.	Olympic Pkwy & Brandywine Ave[1]	D	**E**	1.02% / 1.29%	**Cumulative Impact**	**F**	**F**	1.47% / 1.66%	**Cumulative Impact**	D	D	1.14% / 1.43%	
4.	Olympic Pkwy & Heritage Road[1]	D	C	2.44% / 3.81%		**E**	D	1.94% / 2.19%	**Cumulative Impact**	D	D	1.00% / 1.24%	
5.	La Media Rd & Olympic Pkwy	D	C	5.16% / 6.85%		D	D	2.86% 3.34%		D	D	1.50% / 1.76%	
6.	La Media Rd & Santa Venetia St	D	B	8.70% / 17.29%		D	D	4.12% 5.17%		D	D	2.20% / 3.33%	
7.	La Media Rd & Birch Rd	D	C	11.96% / 35.52%		D	D	6.70% 6.00%		D	D	2.33% / 2.68%	
8.	SR-125 SB Ramps & Birch Rd	C	C	2.75% / 2.53%		D	D	4.25% 4.27%		C	B	0.40% / 0.46%	
9.	SR-125 NB Ramps & Birch Rd	A	A	0.98% / 1.21%		A	A	2.45% 2.49%		B	B	0.41% / 0.44%	
10.	La Media Rd & Santa Luna St[1]	D	A	10.62% / 94.27%		A	A	15.88% 14.62%		B	C	4.75% / 5.91%	
11.	I-805 SB Ramps & Main Street	B	C	0.00% / 0.00%		C	D	0.00% / 0.00%		C	D	0.43% / 0.45%	
12.	I-805NB Ramps & Main Street	B	C	0.00% / 0.00%		C	D	0.00% / 0.00%		D	D	0.96% / 1.00%	
13.	Heritage Road & Main Street	(2)				(2)				D	D	1.02% / 1.09%	
14.	La Media Road SB & Main Street WB	A	A	100% / 100%		A	A	47.88% / 28.77%		C	D	7.54% / 8.39%	
15.	La Media Road NB & Main Street WB	Does Not Exist				B	A	19.43% / 32.99%		B	B	3.41% / 3.85%	
16.	La Media Road SB & Main Street EB	Does Not Exist				A	B	53.01% / 32.15%		B	D	8.82% / 7.10%	

TABLE 12.1 SUMMARY OF INTERSECTION LEVELS OF SERVICE

	Intersection	Existing Plus Project				2020 Plus Project				2030 Plus Project			
		AM LOS	PM LOS	% Project Trips	Impact	AM LOS	PM LOS	% Project Trips	Impact	AM LOS	PM LOS	% Project Trips	Impact
17.	La Media Road NB & Main Street WB	Does Not Exist				A	A	28.43% / 24.05%		C	B	7.45% / 7.83%	
18.	SR-125 SB Ramps & Main Street	Does Not Exist				Does Not Exist				B	B	1.89% / 2.26%	
19.	SR-125 NB Ramps & Main Street	Does Not Exist				Does Not Exist				B	C	0.92% / 0.98%	
20.	Main Street & Project Access B	A	A	100% / 100%		A	A	100% / 100%		A	A	100% / 100%	
21.	Main Street & Project Access A	A	A	100% / 100%		A	A	100% / 100%		A	A	100% / 100%	

(1) Intersections' LOS and % Project Trips were updated to reflect updated trip generation for all scenarios that were identified as significant impacts in the original TIA

(2) No project traffic added in mid-term (2020); therefore Main St/Heritage Rd was not analyzed under mid-term conditions

Source: Fehr & Peers, 2016

TABLE 12.2 SUMMARY OF ROADWAY SEGMENT LEVELS OF SERVICE

Facility	From	To	Cross-Section	Existing Plus Project			2020 Plus Project			2030 Plus Project		
				ADT	LOS	Impact	ADT [(1)]	LOS	Impact	ADT [(1)]	LOS	Impact?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	39,983	B	No	64,000	**F**	**Cumulative Impact**	45,500	C	No
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	49,391	C	No	71,000	**F**	**Cumulative Impact**	56,500	**E**	**Cumulative Impact**
Olympic Pkwy	Oleander Avenue	Brandywine Avenue[1]	6-Ln Prime	53,000	**D**	**Cumulative Impact**	65,400	**F**	**Cumulative Impact**	48,700	C	No
Olympic Pkwy	Brandywine Avenue	Heritage Road[1]	6-Ln Prime	53,723	**D**	**Cumulative Impact**	59,500	**E**	**Cumulative Impact**	42,200	B	No
Olympic Pkwy	Heritage Road	Santa Venetia Street	6-Ln Prime	49,997	C	No	46,200	C	No	36,100	A	No
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln Prime	47,570	C	No	38,300	B	No	29,800	A	No
Olympic Pkwy	La Media Road	East Palomar	6-Ln Prime	32,097	A	No	27,700	A	No	27,100	A	No
Olympic Pkwy	East Palomar	SR-125 SB Ramps	6-Ln Prime	36,614	A	No	47,200	C	No	47,600	C	No
Birch Rd	La Media Road	Magdalena Avenue	6-Ln Prime	9,584	A	No	27,500	A	No	31,300	B	No
Birch Rd	Magdalena Avenue	SR-125 SB Ramps	6-Ln Prime	11,164	A	No	31,700	B	No	31,000	B	No
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	31,341	A	No	50,100	D	No	51,100	D	No
Main St	Oleander Avenue	Brandywine Avenue	6-Ln Prime	23,065	A	No	51,300	D	No	54,900	D	No
Main St	Brandywine Avenue	Heritage Rd	6-Ln Prime	10,865	A	No	39,200	B	No	49,300	C	No
Main St	Heritage Road	Project Access	6-Ln Prime	Does Not Exist			Does Not Exist			49,609	C	No

TABLE 12.2 SUMMARY OF ROADWAY SEGMENT LEVELS OF SERVICE

Facility	From	To	Cross-Section	Existing Plus Project			2020 Plus Project			2030 Plus Project		
				ADT	LOS	Impact	ADT (1)	LOS	Impact	ADT (1)	LOS	Impact?
Main St	Project Access	La Media Road	6-Ln Prime	3,530	A	No	3,598	A	No	48,193	C	No
Main St	La Media Road	SR-125 SB Ramps	6-Ln Prime	Does Not Exist			18,500	A	No	54,800	D	No
Main St	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Gateway (3)	Does Not Exist			Does Not Exist			54,900	D	No
Main St	SR-125 NB Ramps	Eastlake Parkway	6-Ln Gateway (3)	Does Not Exist			Does Not Exist			60,500	D	No
Otay Valley Rd	Main Street	SR-125	4-Ln Major	Does Not Exist			Does Not Exist			22,900	B	No
Heritage Rd	Olympic Parkway	Santa Victoria Road	6-Ln Prime	Does Not Exist			17,500	A	No	36,500	A	No
Heritage Rd	Santa Victoria Road	Main Street	6-Ln Prime	Does Not Exist			17,500	A	No	45,600	C	No
Heritage Rd	Main Street	Avenida de las Vistas	6-Ln Prime	8,787	A	No	17,400	A	No	60,700	E	No
La Media Rd	Olympic Parkway	Santa Venetia Street	6-Ln Prime	19,514	A	No	34,600	A	No	33,700	A	No
La Media Rd	Santa Venetia Street	Birch Road	6-Ln Prime	14,621	A	No	31,700	A	No	33,900	A	No
La Media Rd	Birch Road	Santa Luna Street	6-Ln Prime	5,602	A	No	20,700	A	No	21,700	A	No
La Media Rd	Santa Luna Street	Main Street	4-Ln Town Center (3)	3,530	C	No	19,500	A	No	21,100	A	No

Notes:
(1) Source: University Villages TIA, Chen-Ryan, 2014.
(2) Segments' ADT and LOS were updated to reflect updated trip generation identified as significant impacts for E+P in original TIA
(3) Town Center and Gateway Classifications are subject to LOS E thresholds.
Source: Fehr & Peers, 2016



TABLE 12.3
SUMMARY OF RECOMMENDED MITIGATION MEASURES

Intersections

Intersection	Impact Scenario	Direct or Cumulative	Recommended Mitigation
1. I-805 SB Ramps & Olympic Pkwy	Existing Plus Project 2020 2030	Cumulative	Significant and Unavoidable
2. I-805 NB Ramps & Olympic Pkwy	Existing Plus Project 2020 2030	Cumulative	Significant and Unavoidable
3. Olympic Pkwy & Brandywine Ave	Existing Plus Project 2020	Cumulative	Payment of TDIF
4. Olympic Pkwy & Heritage Road	2020	Cumulative	Payment of TDIF

Roadway Segments

Facility	From	To	Impact Scenario	Direct or Cumulative	Recommended Mitigation
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	2020	Cumulative	Significant and Unavoidable
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	2020 2030	Cumulative	Significant and Unavoidable
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	Existing Plus Project 2020	Cumulative	Payment of TDIF
Olympic Pkwy	Brandywine Avenue	Heritage Road	Existing Plus Project 2020	Cumulative	Payment of TDIF

Source: Fehr & Peers, 2016

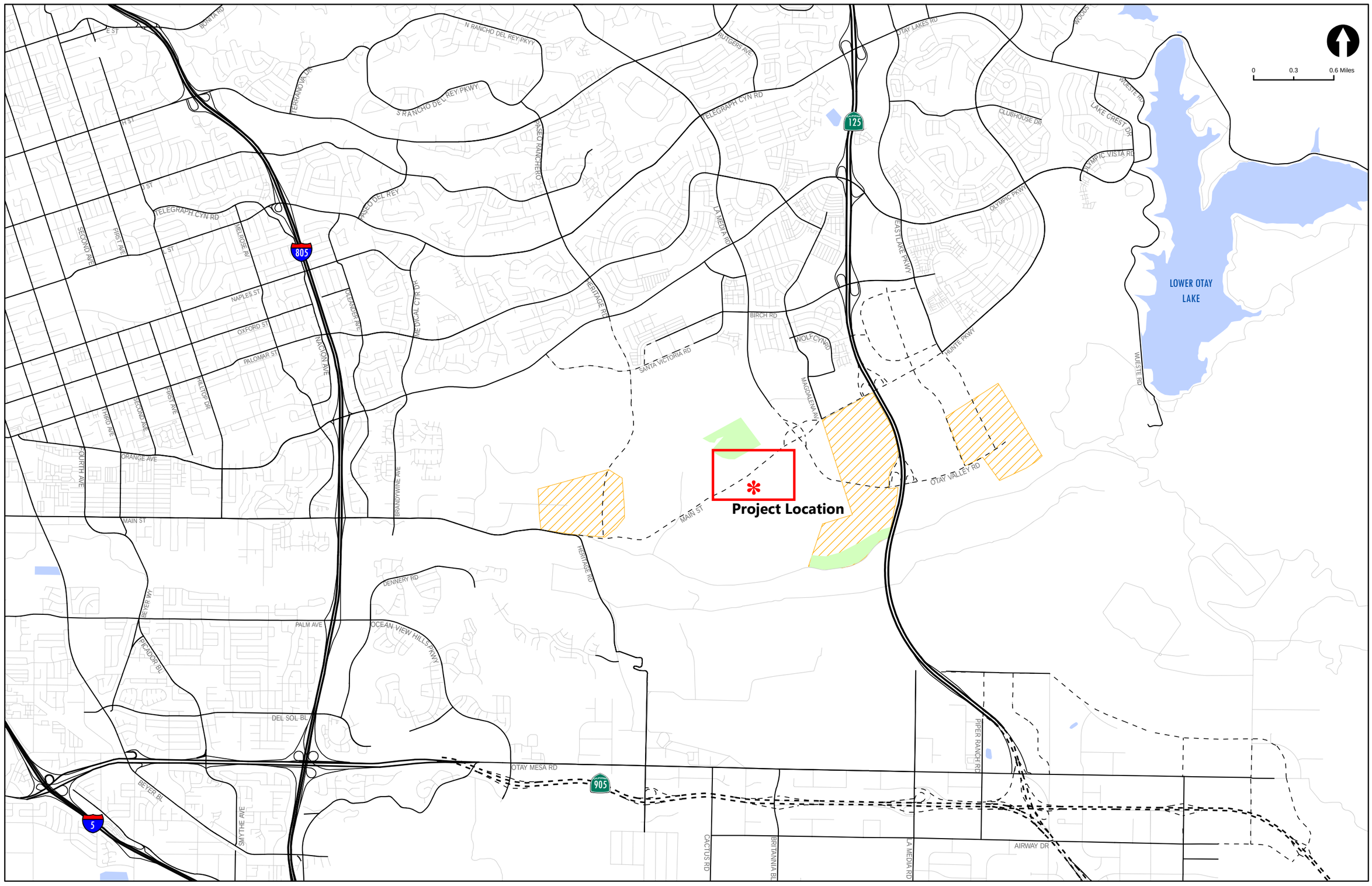


Figure 1-1: Project Location

Neighborhood	Land Use	Dwelling Units	Target Lot Size	Gross Neigh. Acreage
R-2	SF	75	50'x75'	15.48
SF-Subtotal	SF	75	-	15.48
R-1A	MF	116	-	8.59
R-1B	MF	44	-	3.94
R-3*	MF	115	-	6.3
MF SUBTOTAL	MF	275	-	18.83
OS-1	OS (CFD)	-	-	0.57
OS-2	OS (HOA)	-	-	2.92
OS-3	OS (HOA)	-	-	3.32
OS-4	OS (HOA)	-	-	1.62
OS-5**	OS (HOA)	-	-	1.41
OS-6**	OS (HOA)	-	-	3.11
OS-7	OS (Preserve)	-	-	1.37
OS-8	OS (CFD)	-	-	1.35
OS-9	OS (HOA/CFD)	-	-	7.46
OS-10	OS (Preserve)	-	-	6.95
OS-11	OS (Preserve)	-	-	44.27
OS-12	OS (Preserve)	-	-	44.89
OS SUBTOTAL	OS/Preserve	-	-	119.24
External Streets (Main St.)	Circulation	-	-	10.91
Internal Backbone Circulation (Por. Of St. "B" & All of St. "C")	Circulation	-	-	1.57
CIRCULATION SUBTOTAL				12.48
OVERALL TOTAL*		350		166.02

*THE TOTAL AREA SHOWN FOR NEIGHBORHOOD R-E INCLUDES 0.5 ACRES OF FUTURE COMMUNITY PURPOSE FACILITY USE (CPF)

**TOTAL AREA SHOWN FOR OS-5 AND OS-6 INCLUDES 1.10 ACRES OF COMMUNITY PURPOSE FACILITY USE (CPF)

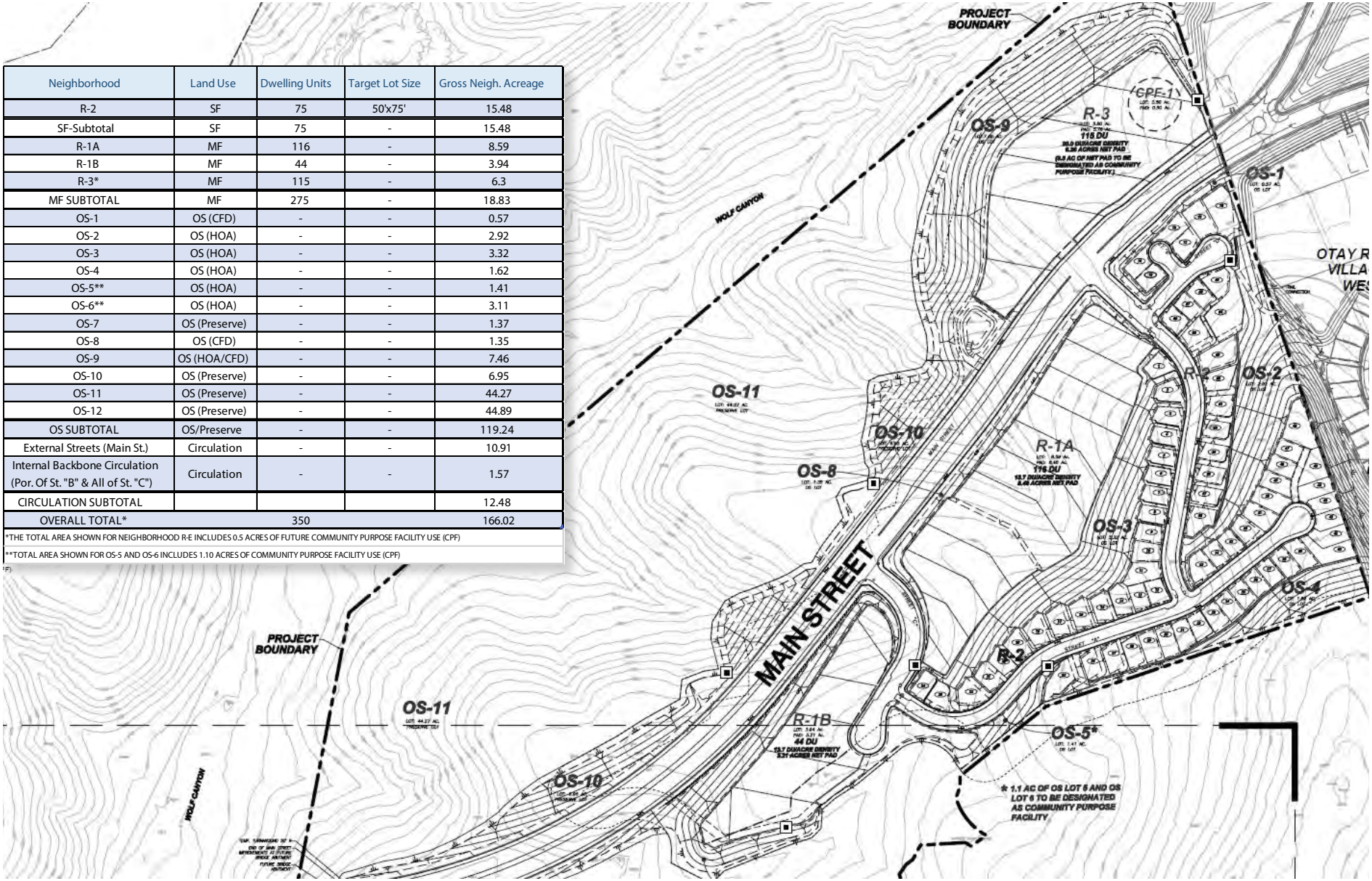
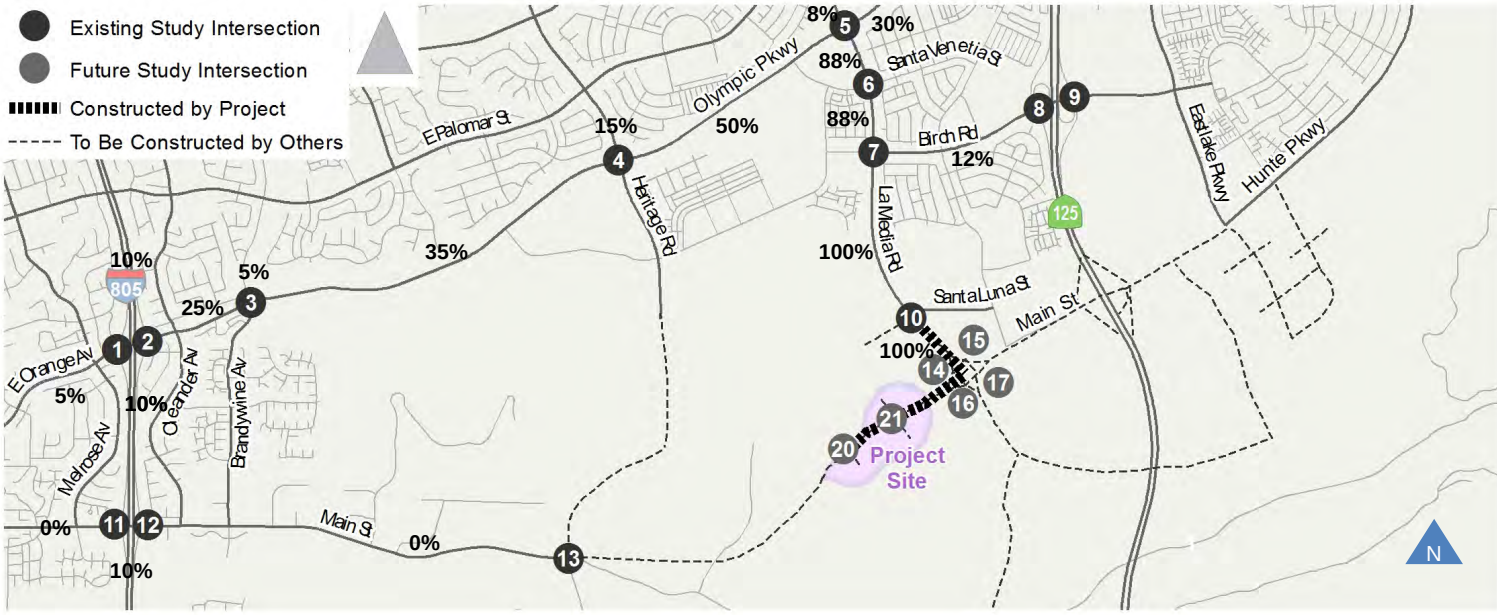


Figure 1-2

Site Plan



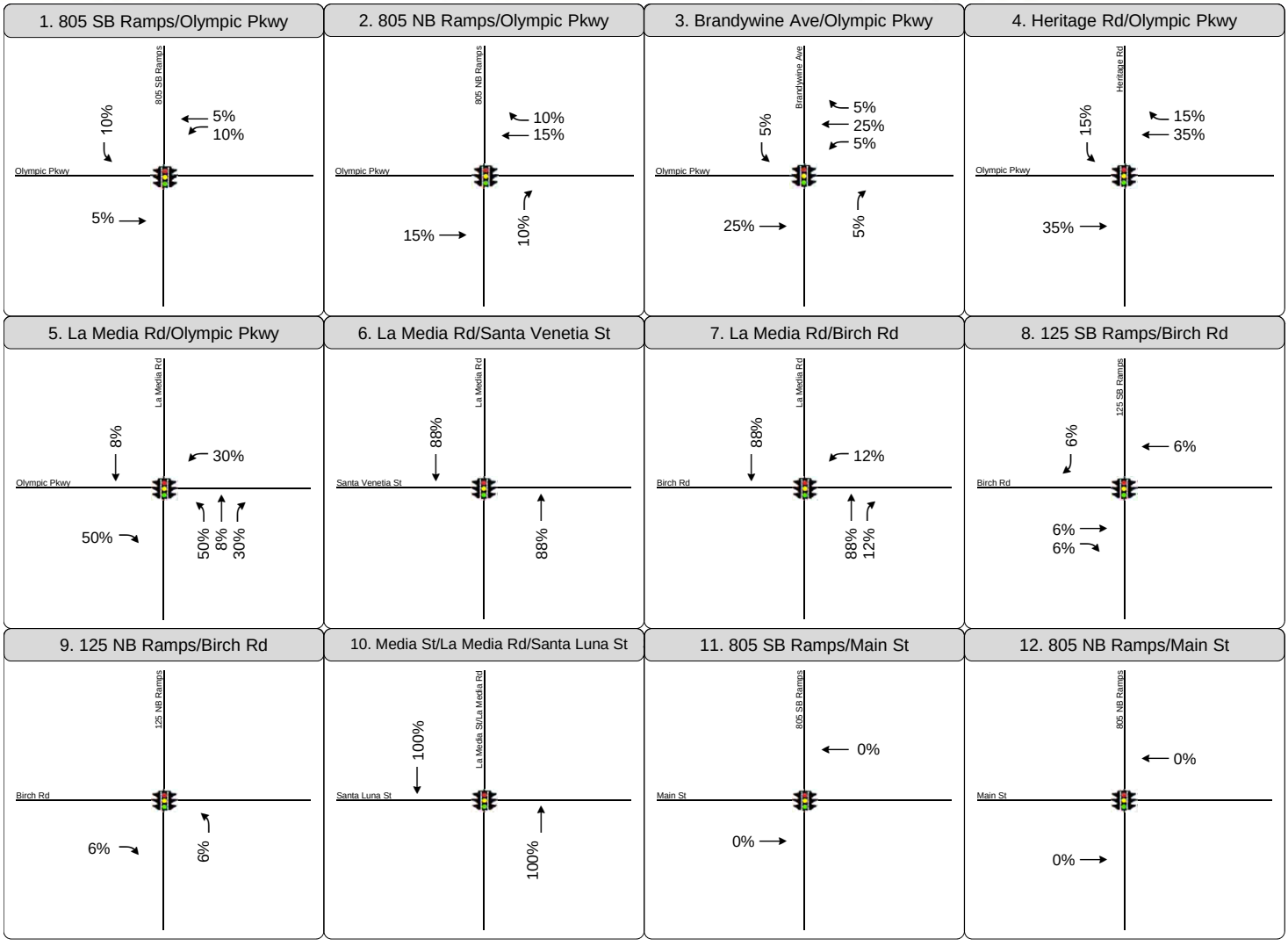
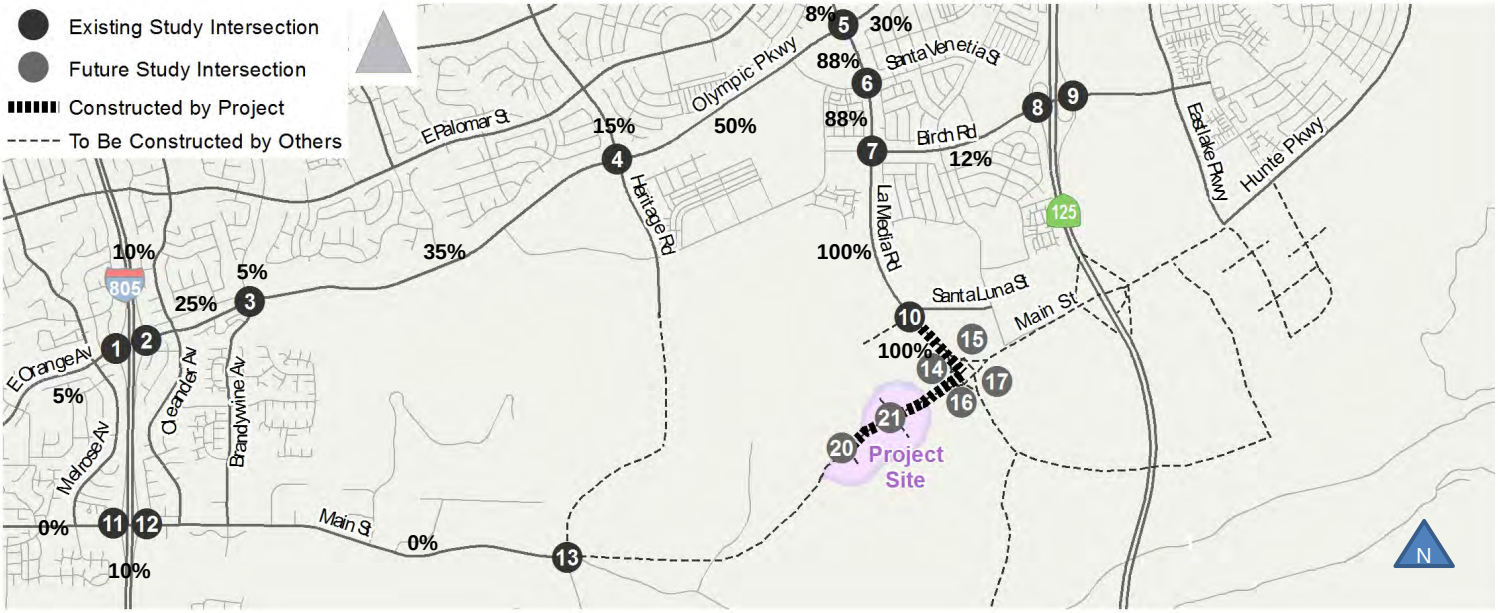


Figure 3-1a

Existing Conditions
Trip Distribution



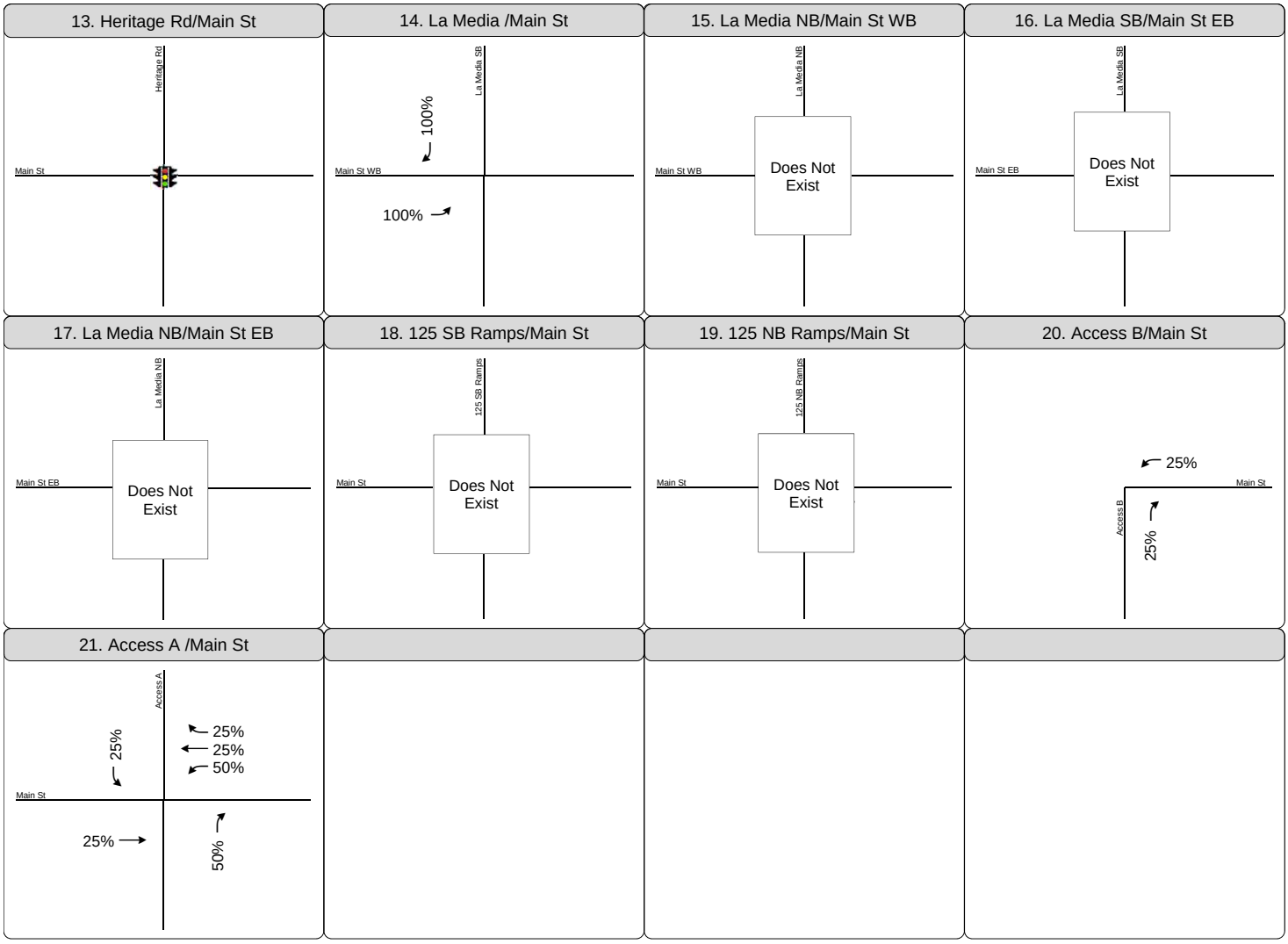
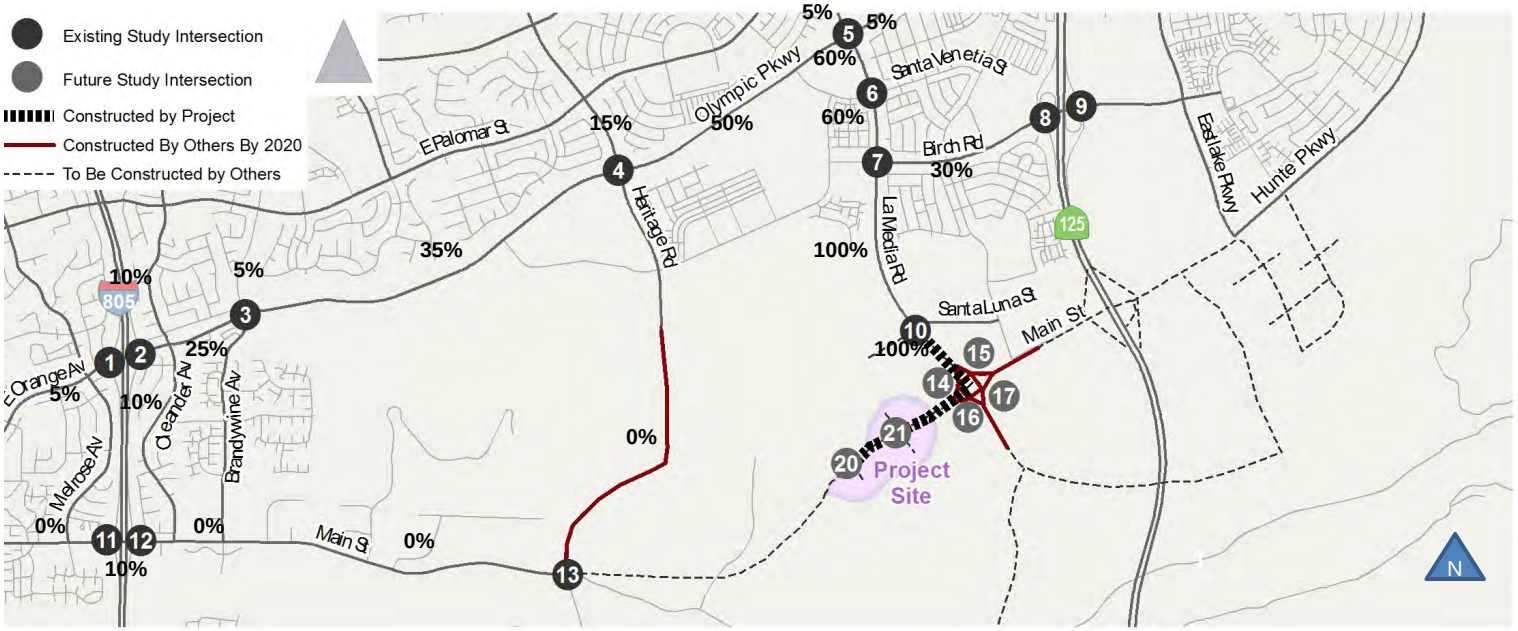


Figure 3-1b

Existing Conditions
Trip Distribution



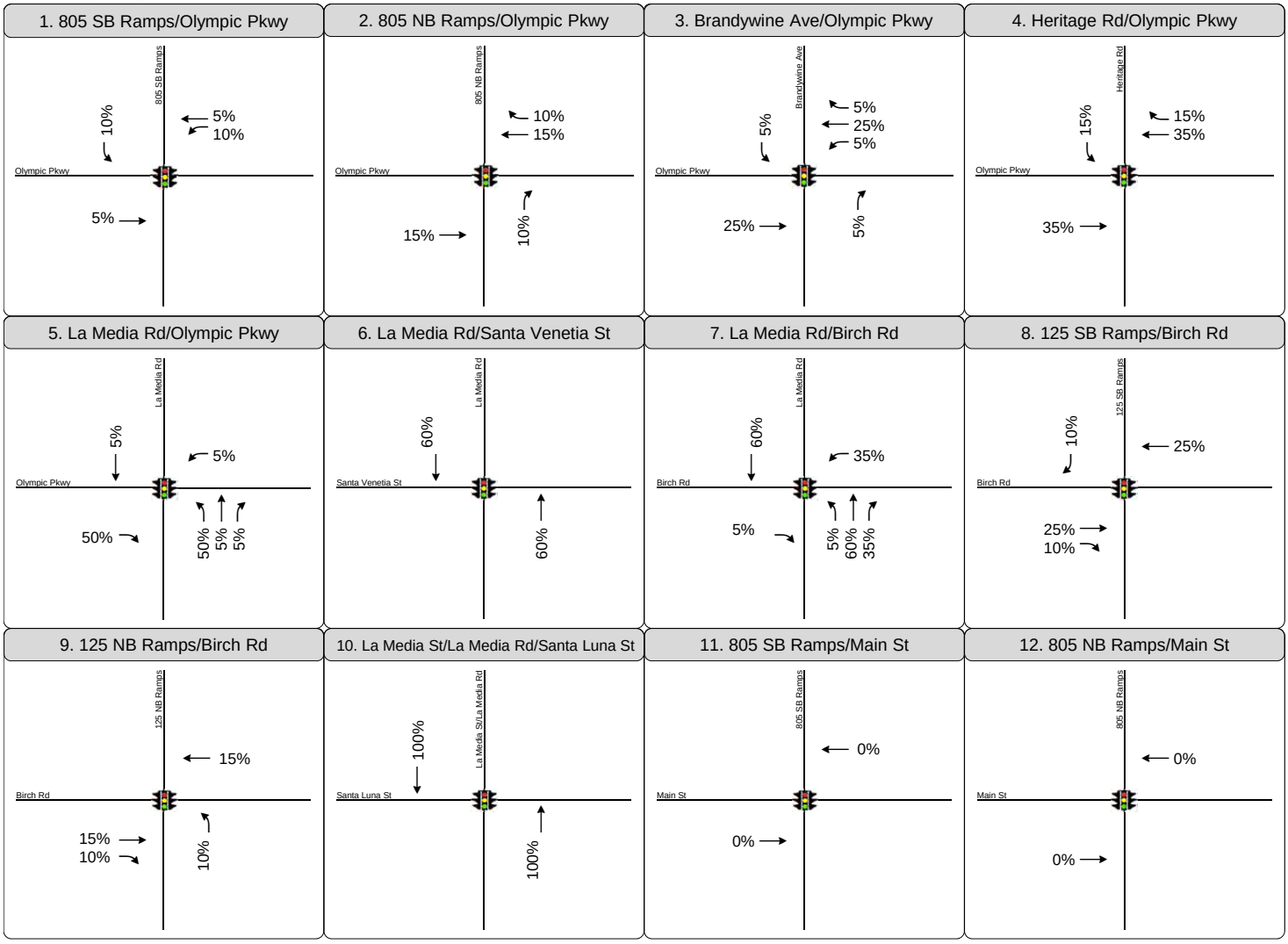
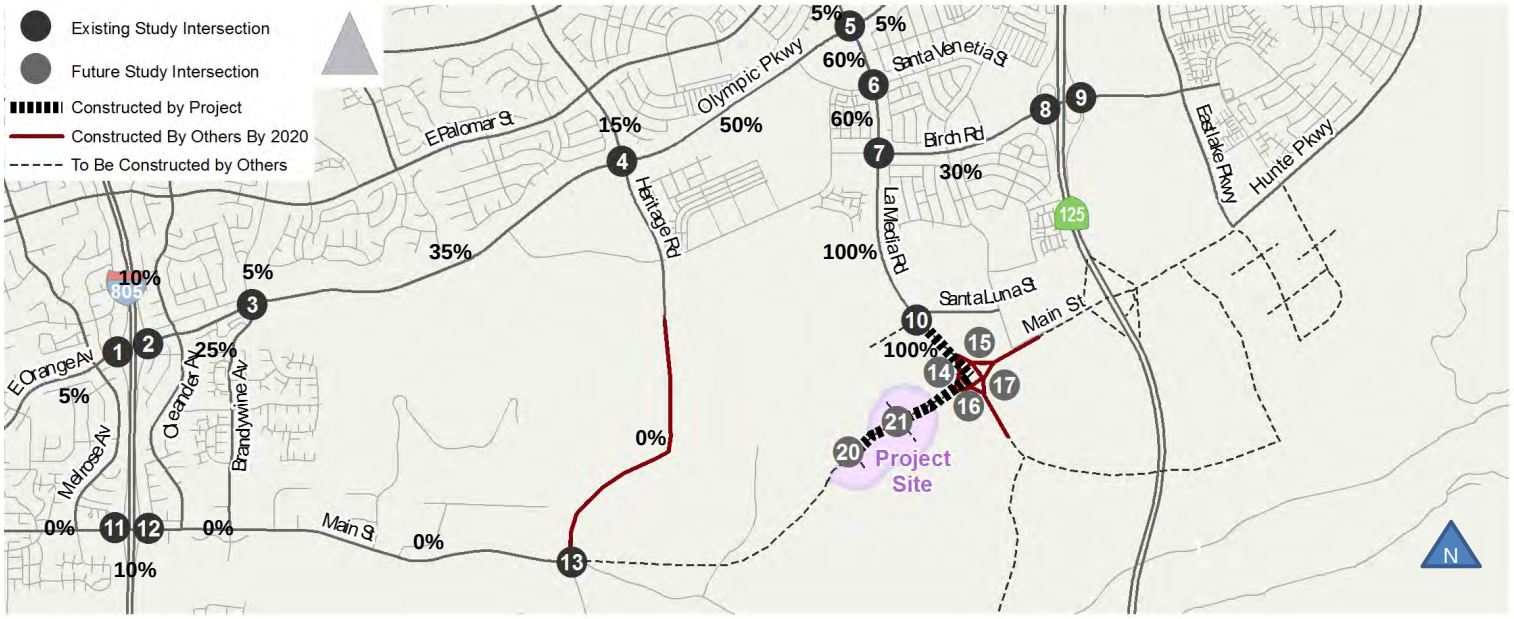


Figure 3-2a

Mid-Term (2020) Conditions
Trip Distribution



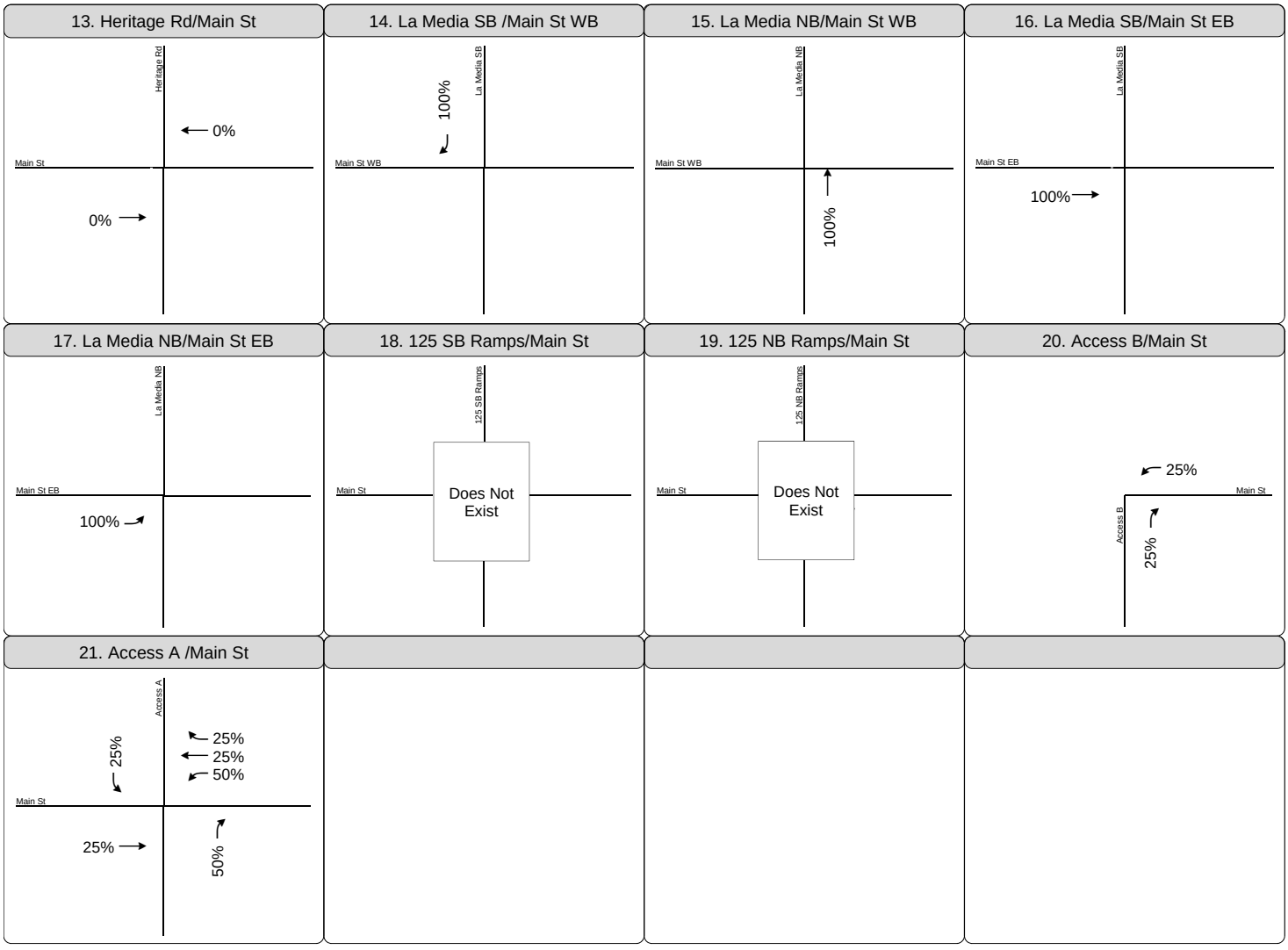
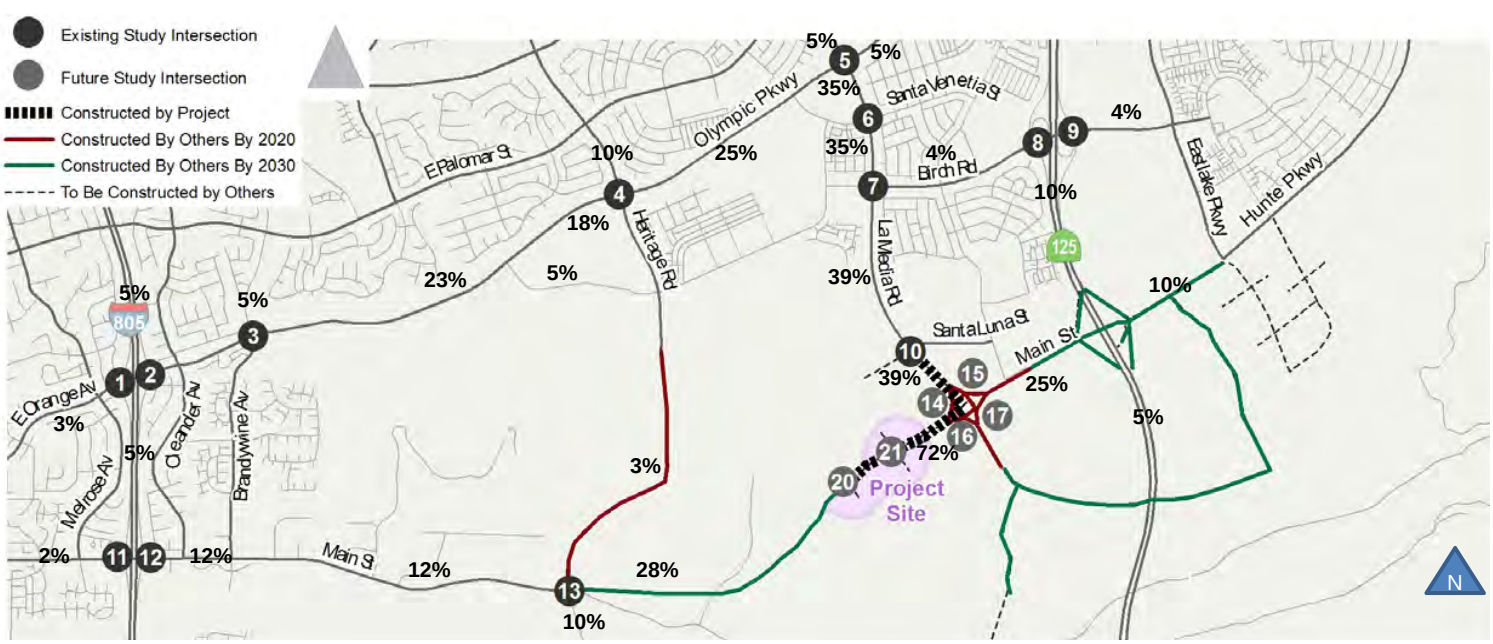


Figure 3-2b

Mid-Term (2020) Conditions

Trip Distribution



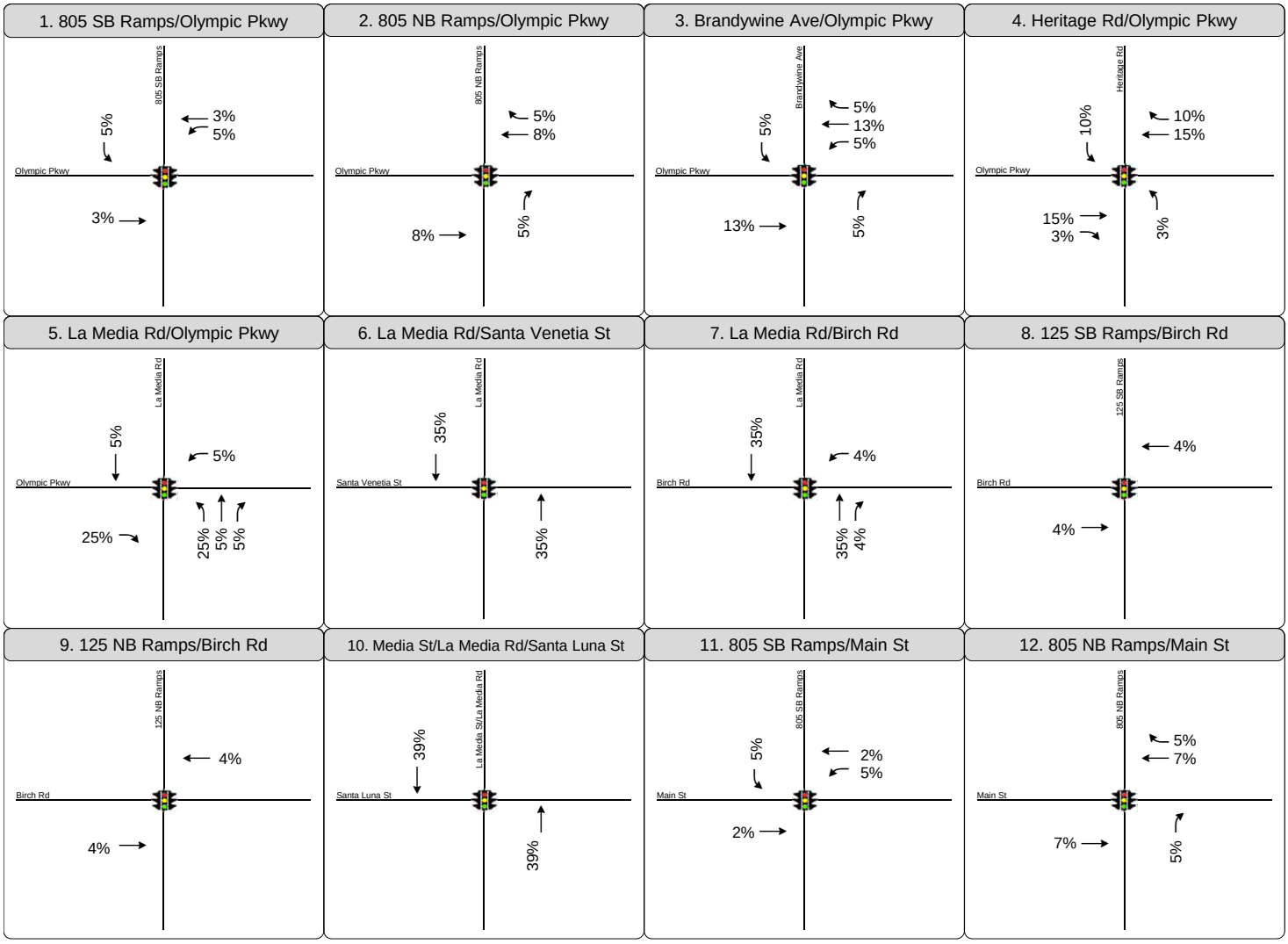
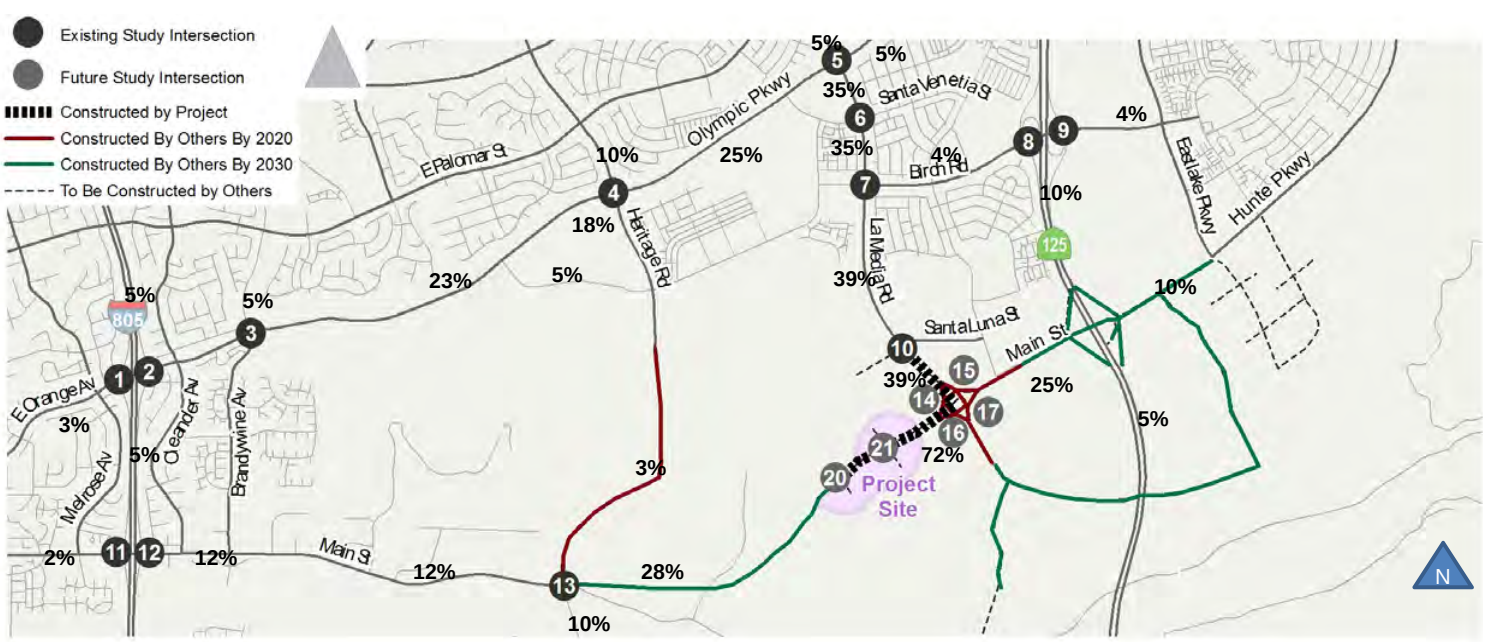


Figure 3-3a

Long Term (2030) Conditions
Trip Distribution



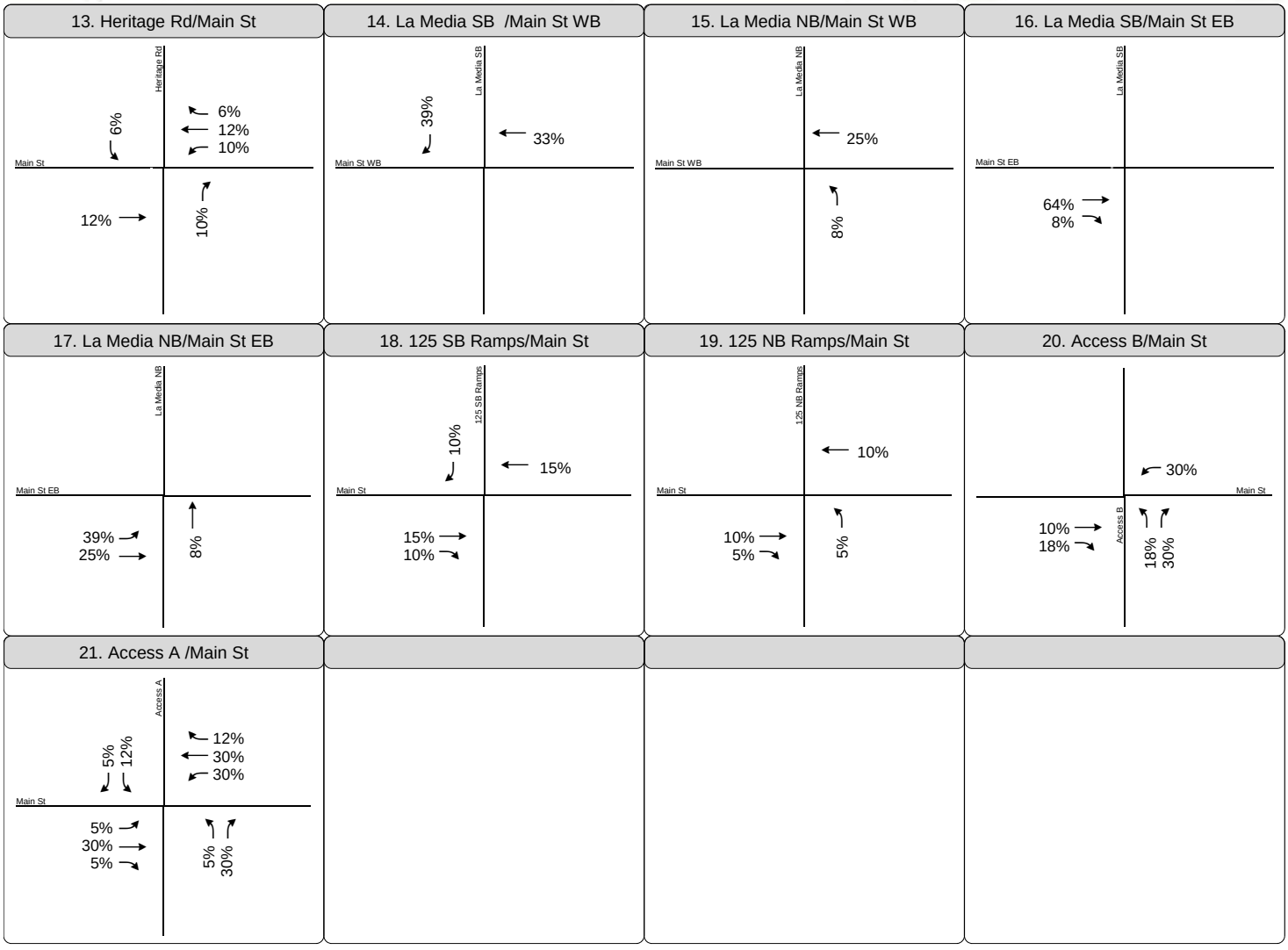
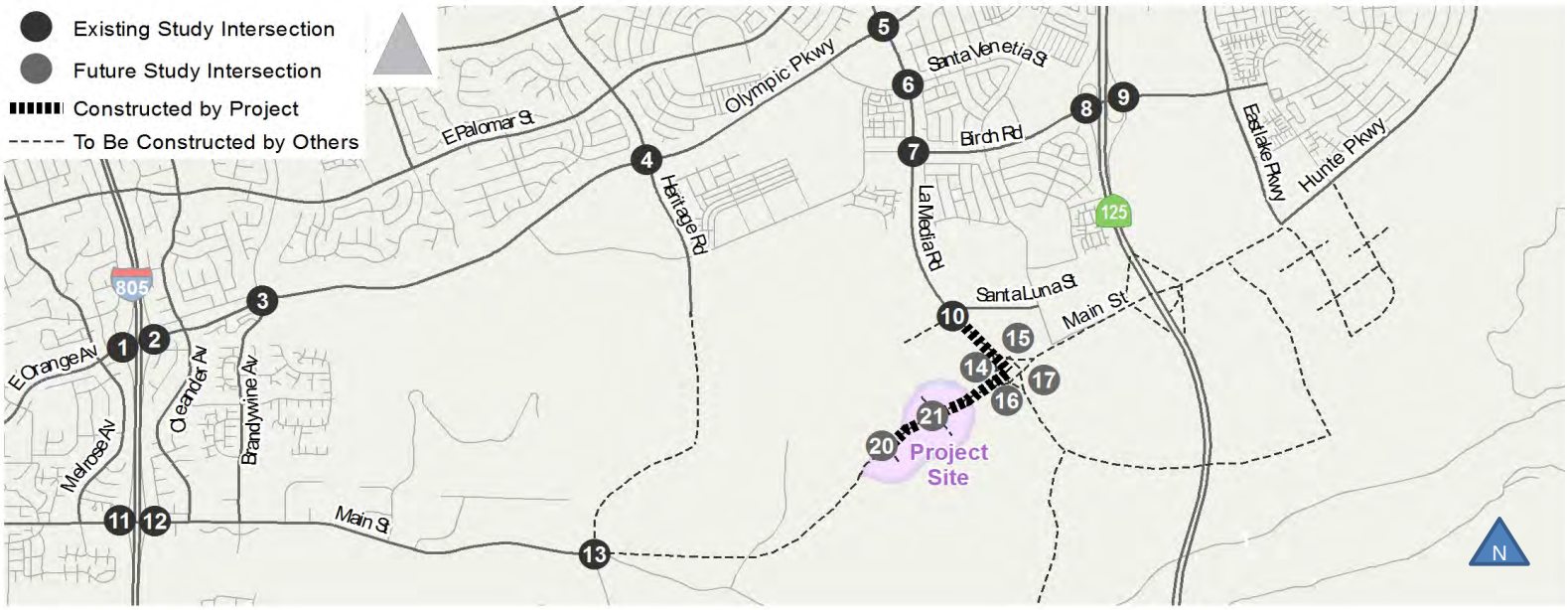


Figure 3-3b

Long Term (2030) Conditions

Trip Distribution



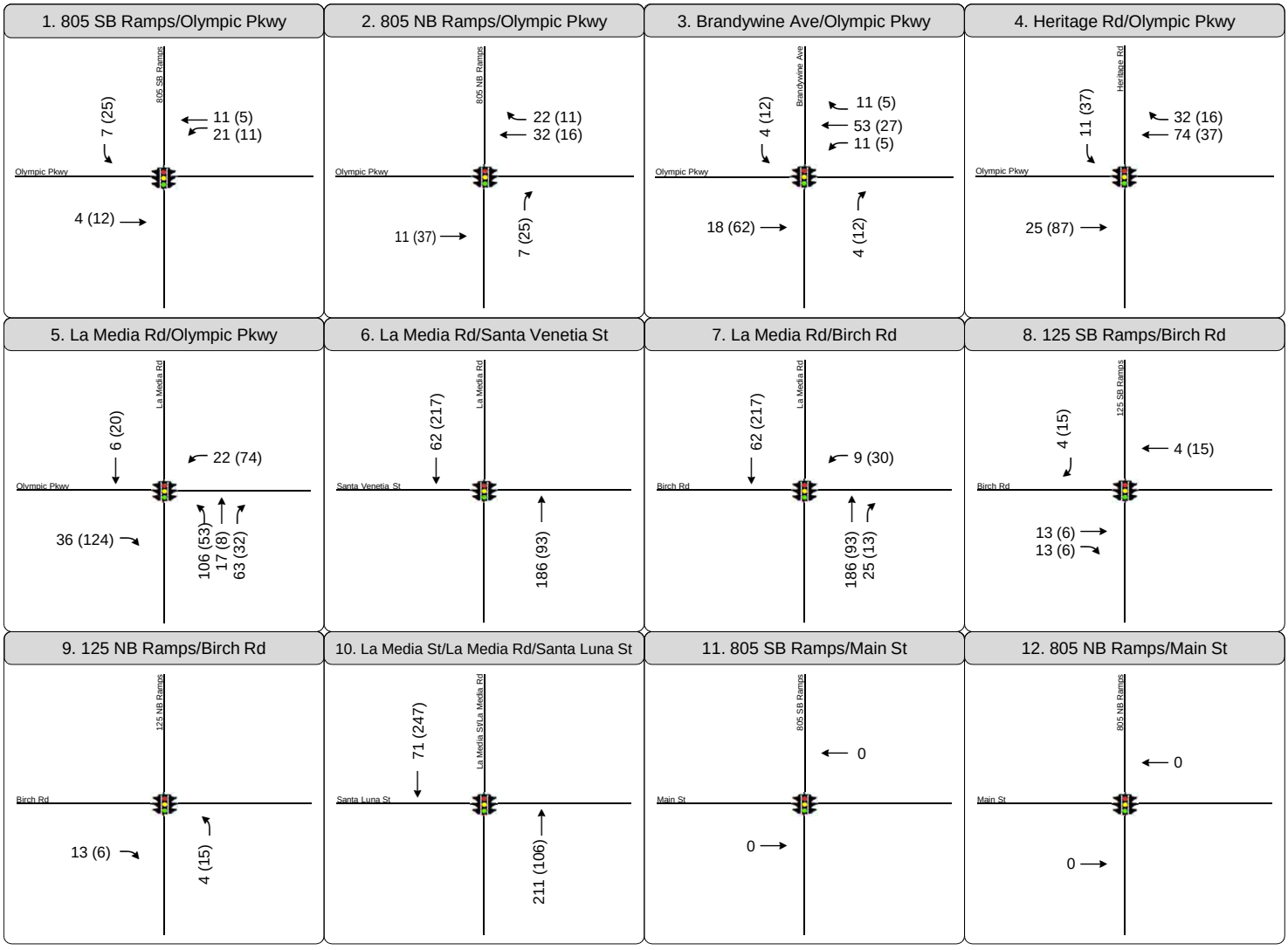
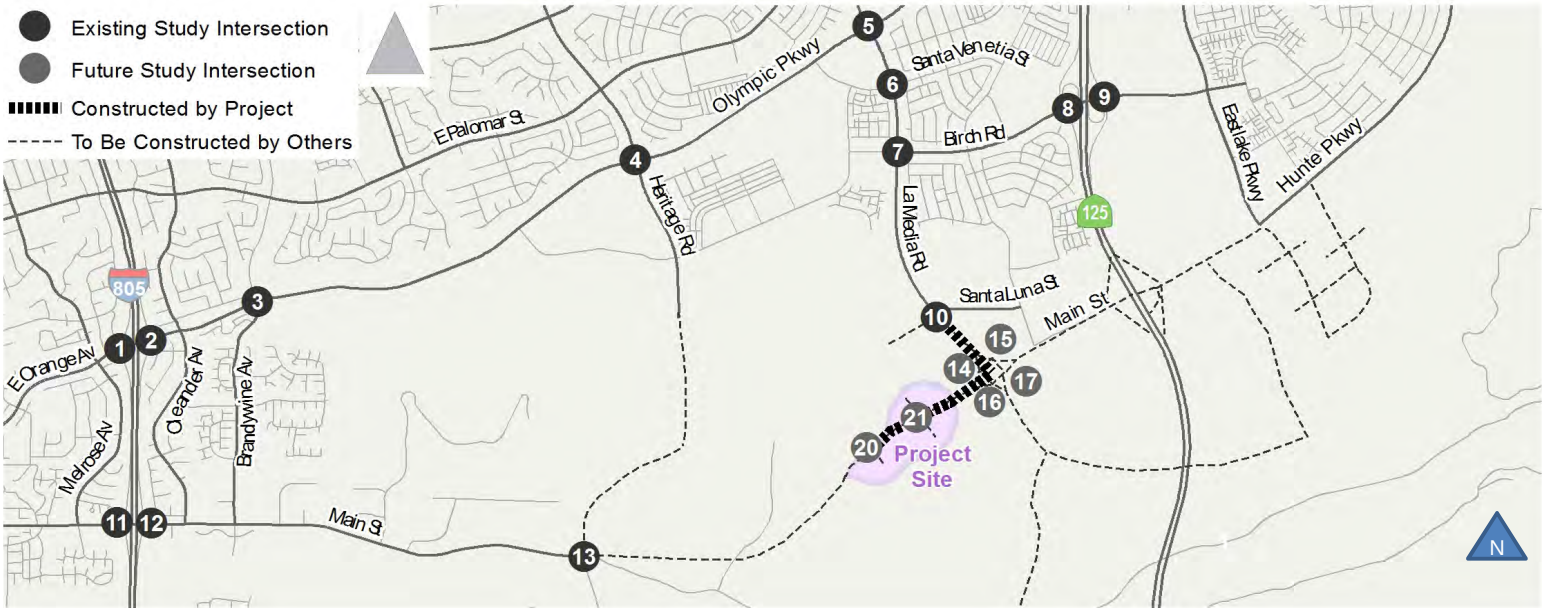


Figure 3-4a

Existing Conditions
Peak Hour Trip Assignment



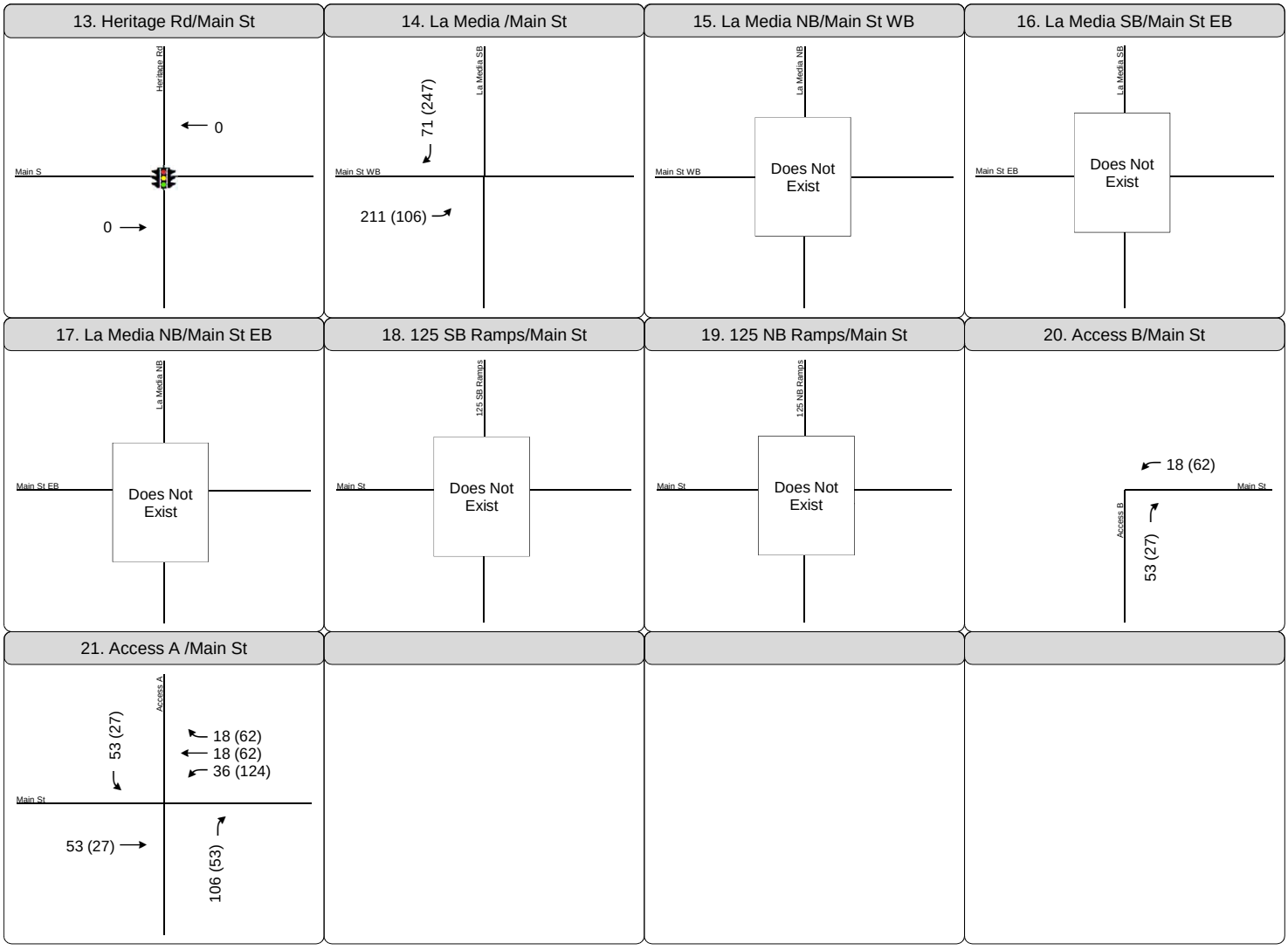


Figure 3-4b

Existing Conditions
Peak Hour Trip Assignment



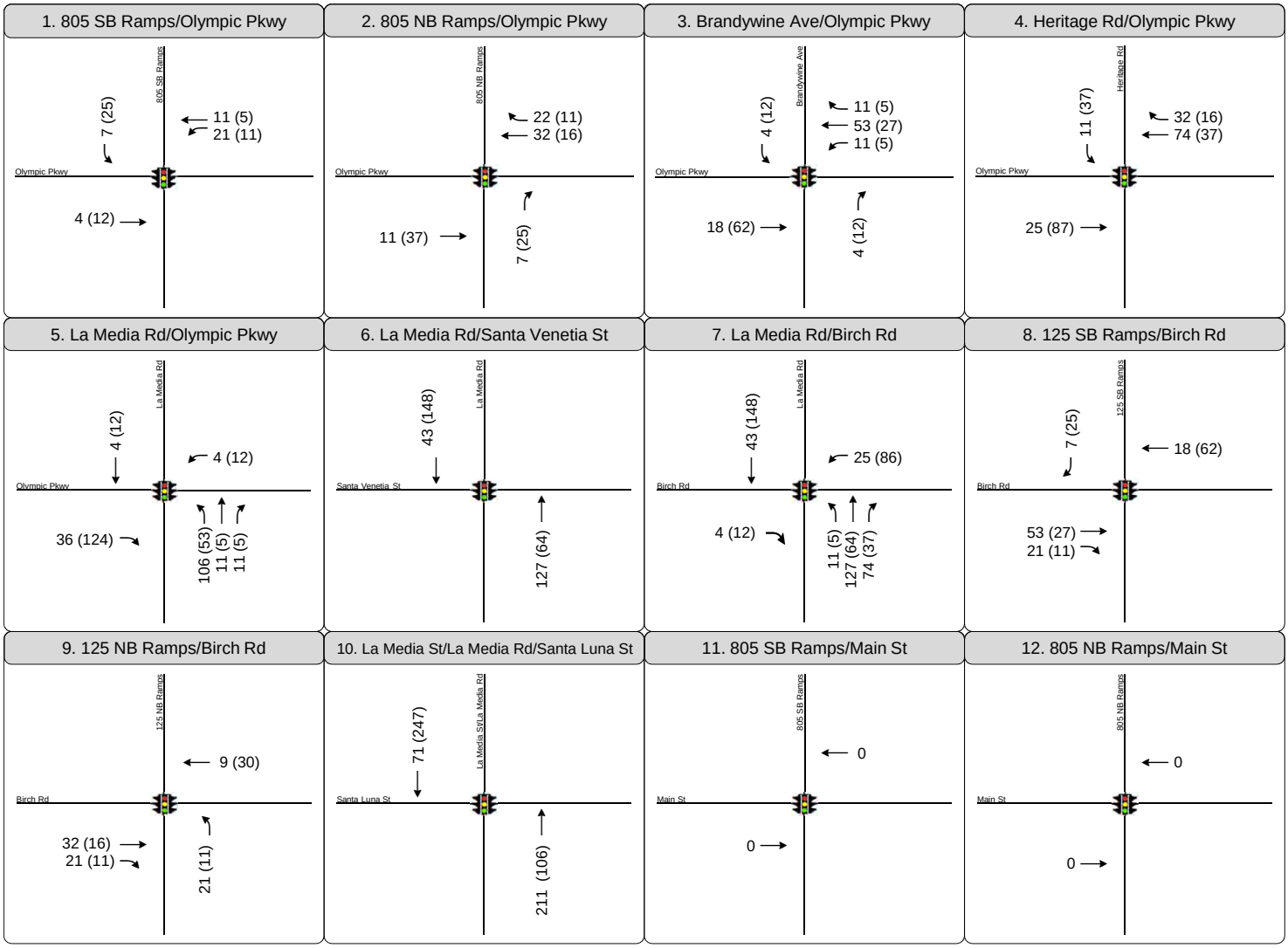
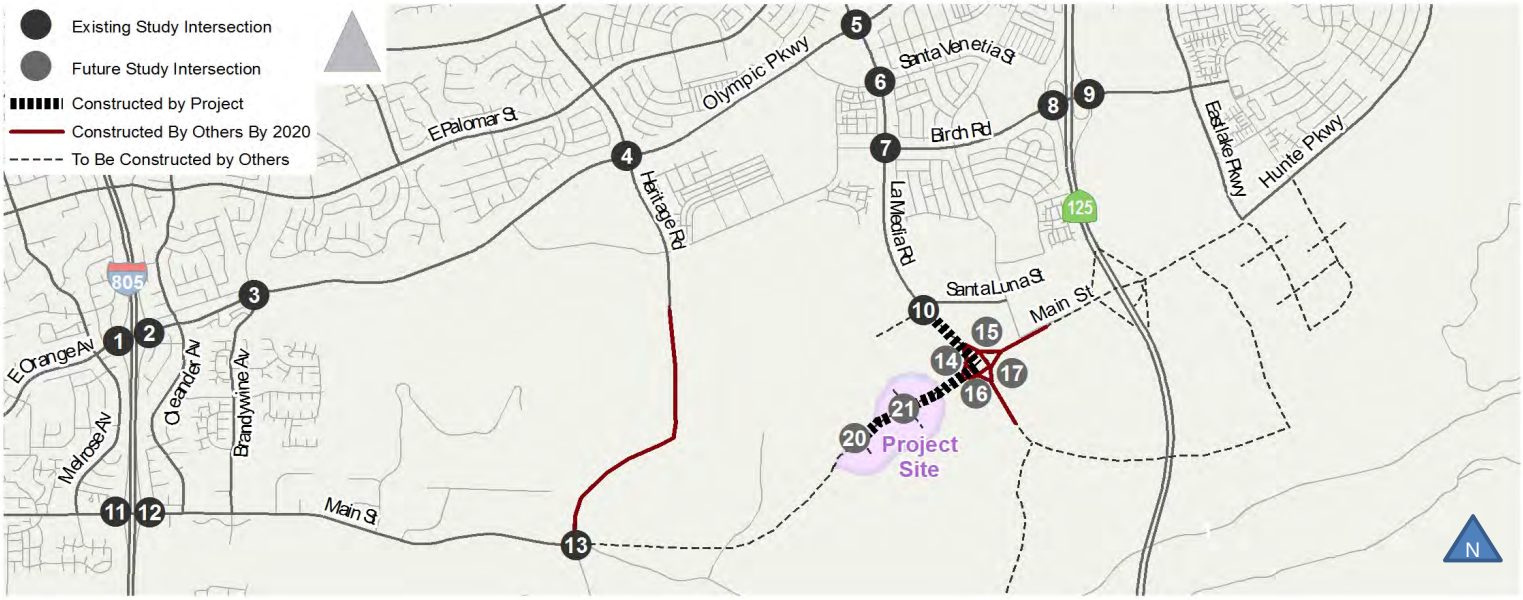


Figure 3-5a

Mid-Term (2020)
Peak Hour Trip Assignment



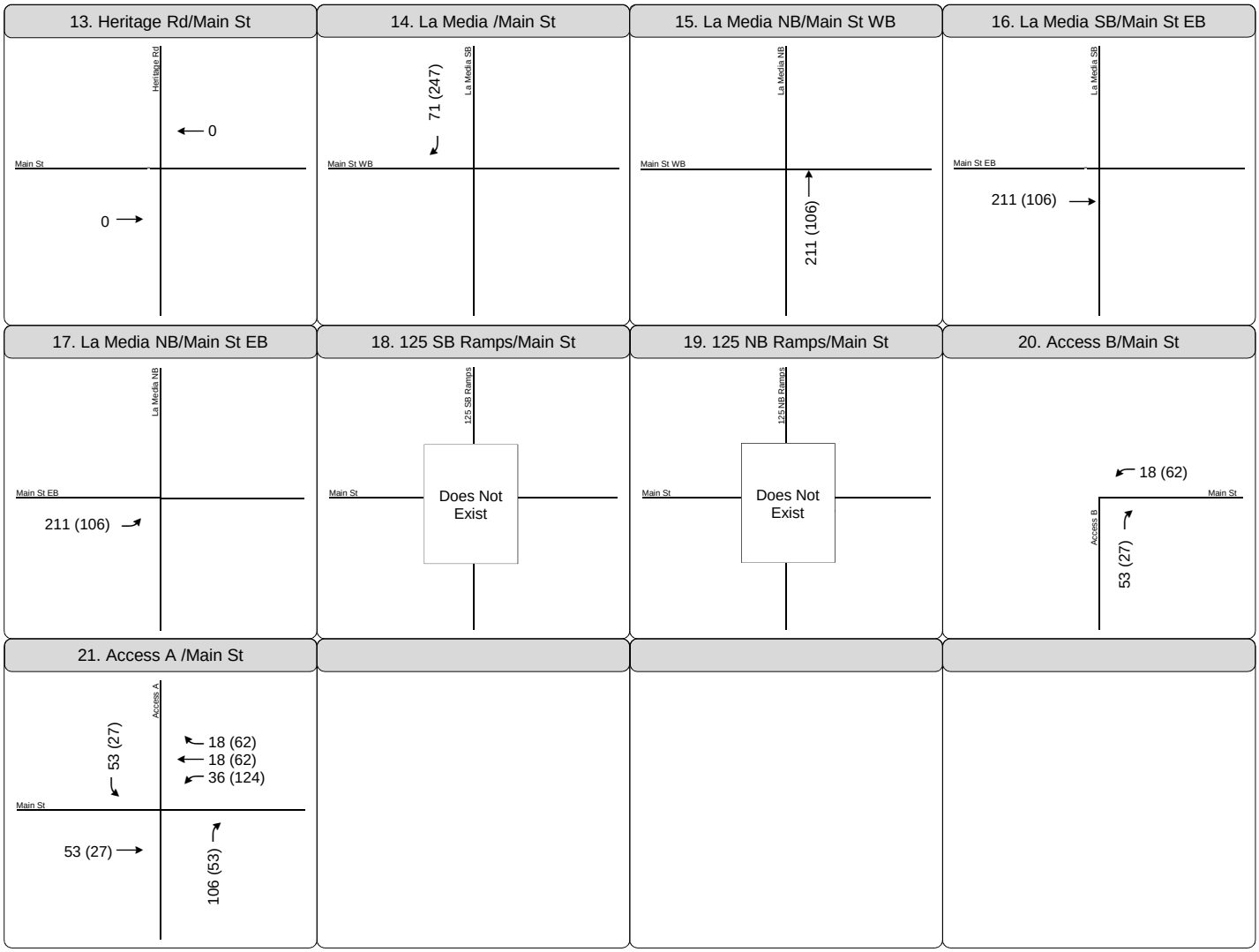
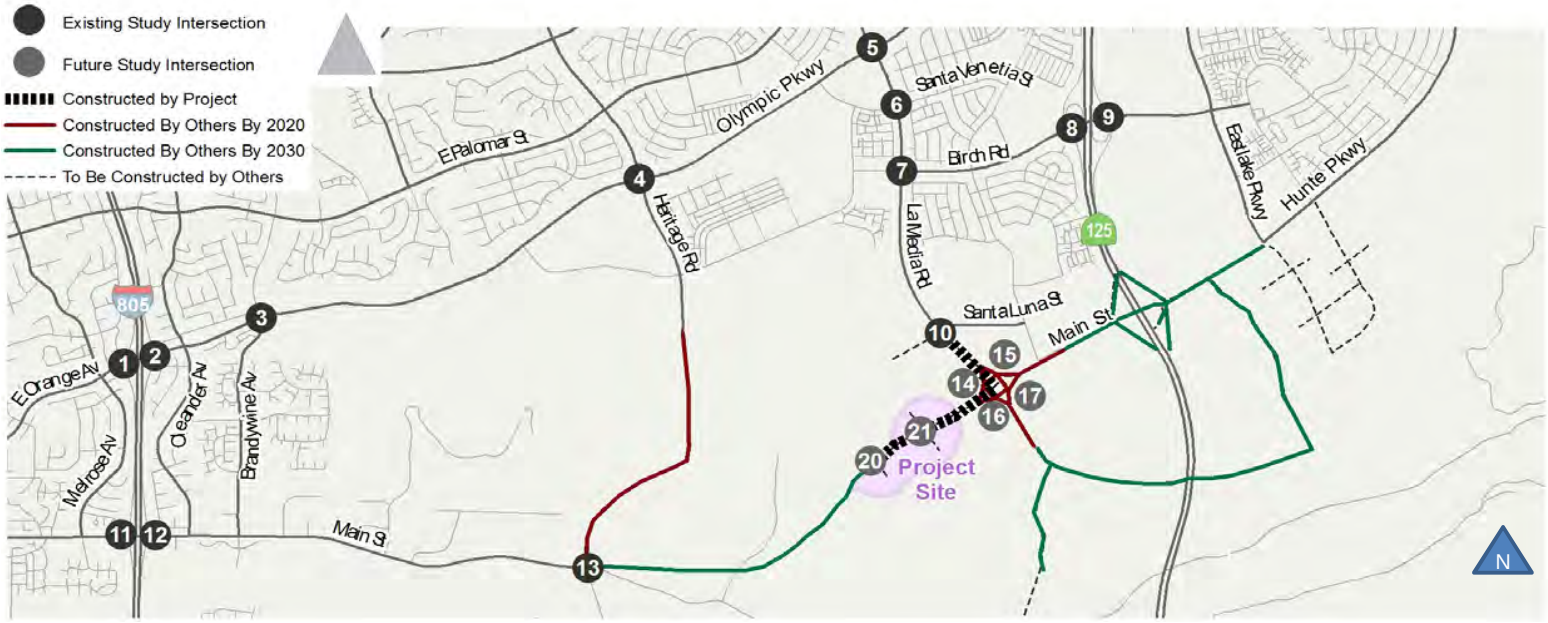


Figure 3-5b

Mid-Term (2020)
Peak Hour Trip Assignment



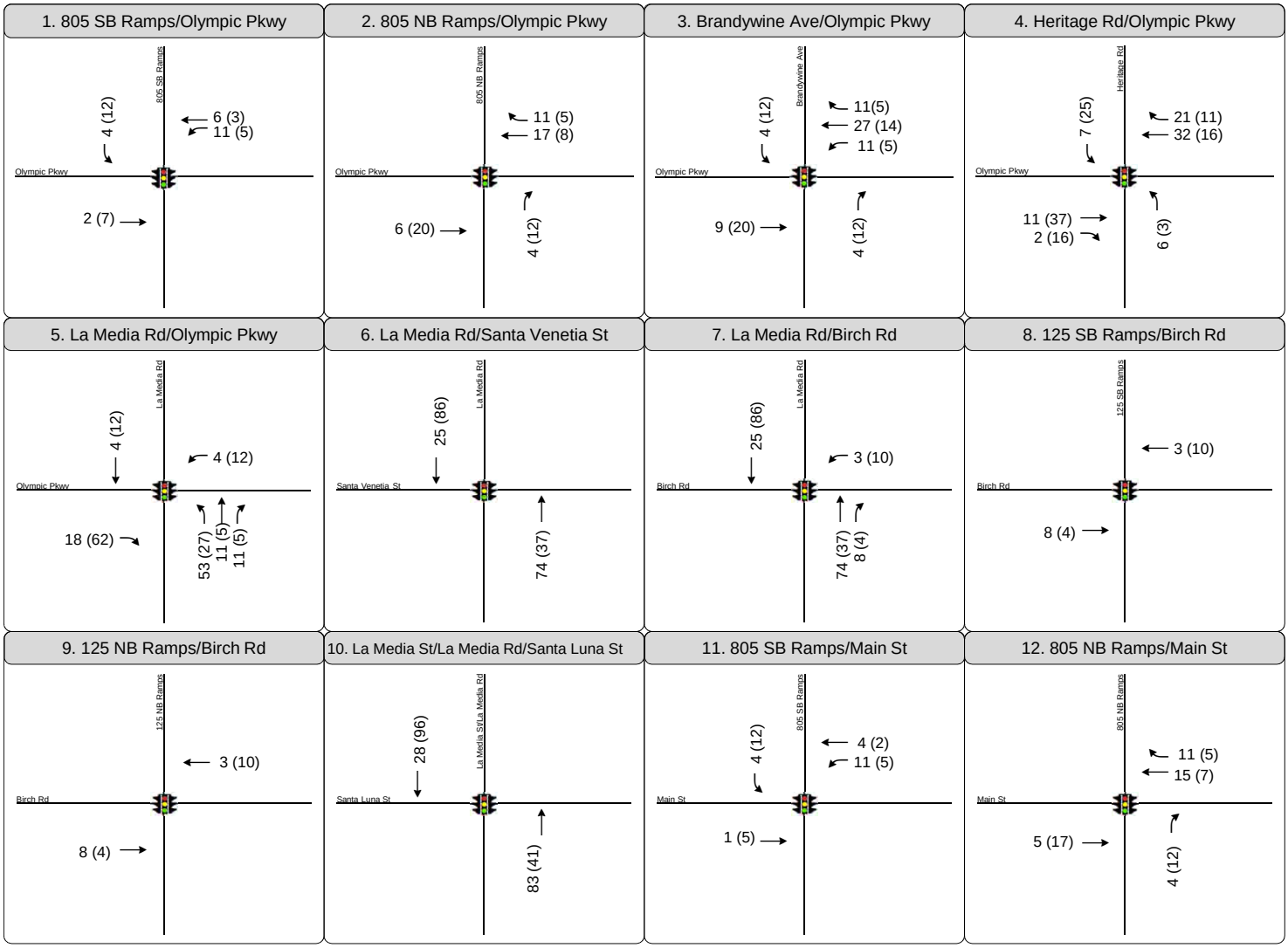
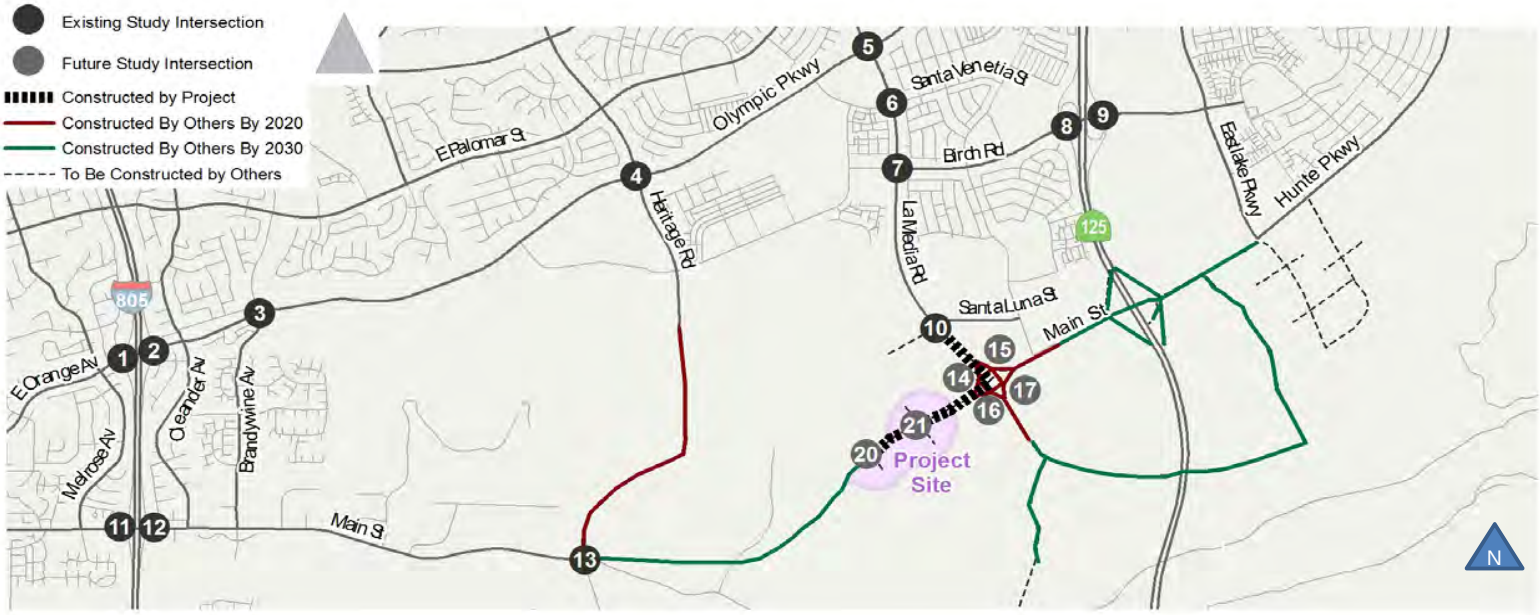


Figure 3-6a

Long Term (2030)
Peak Hour Trip Assignment



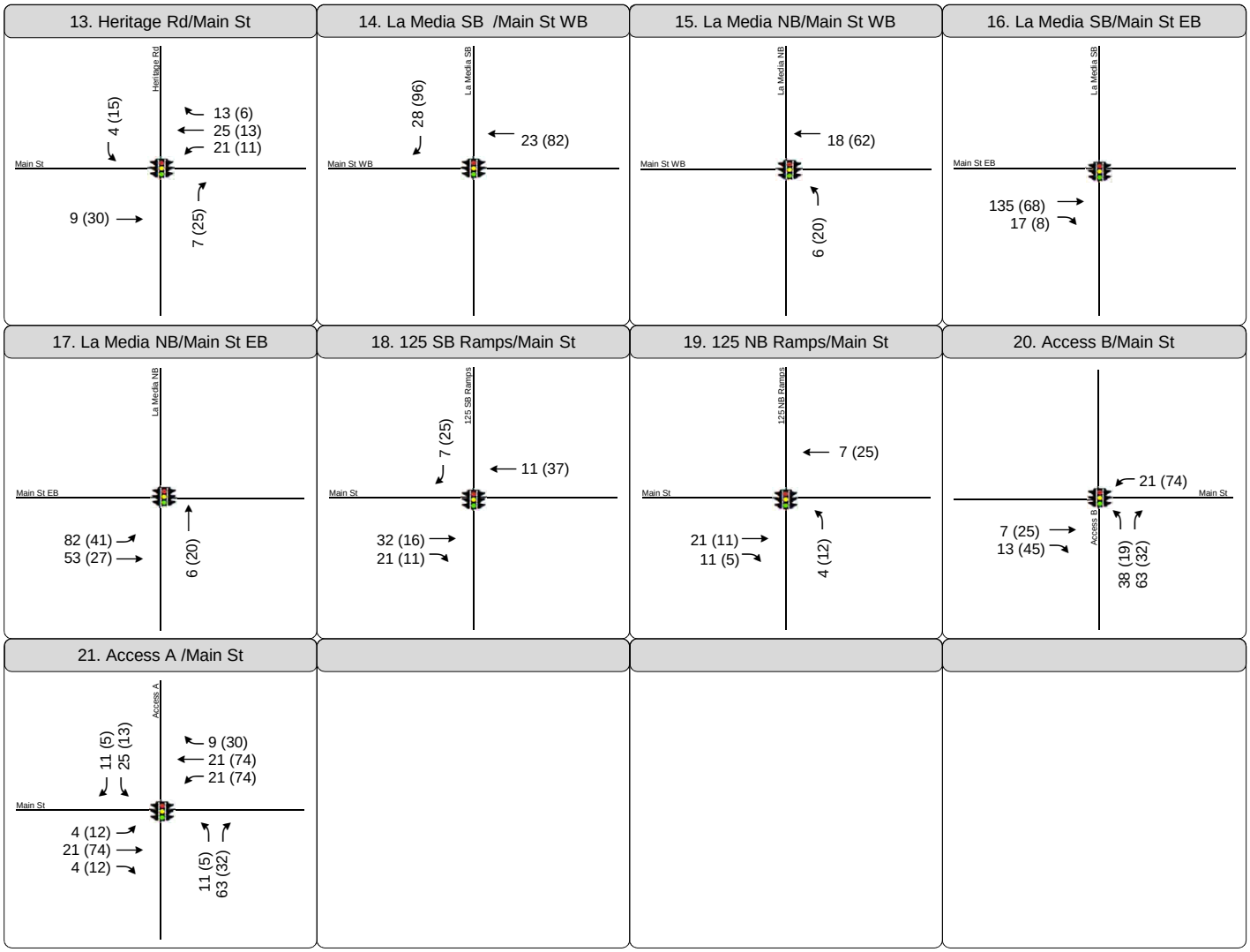
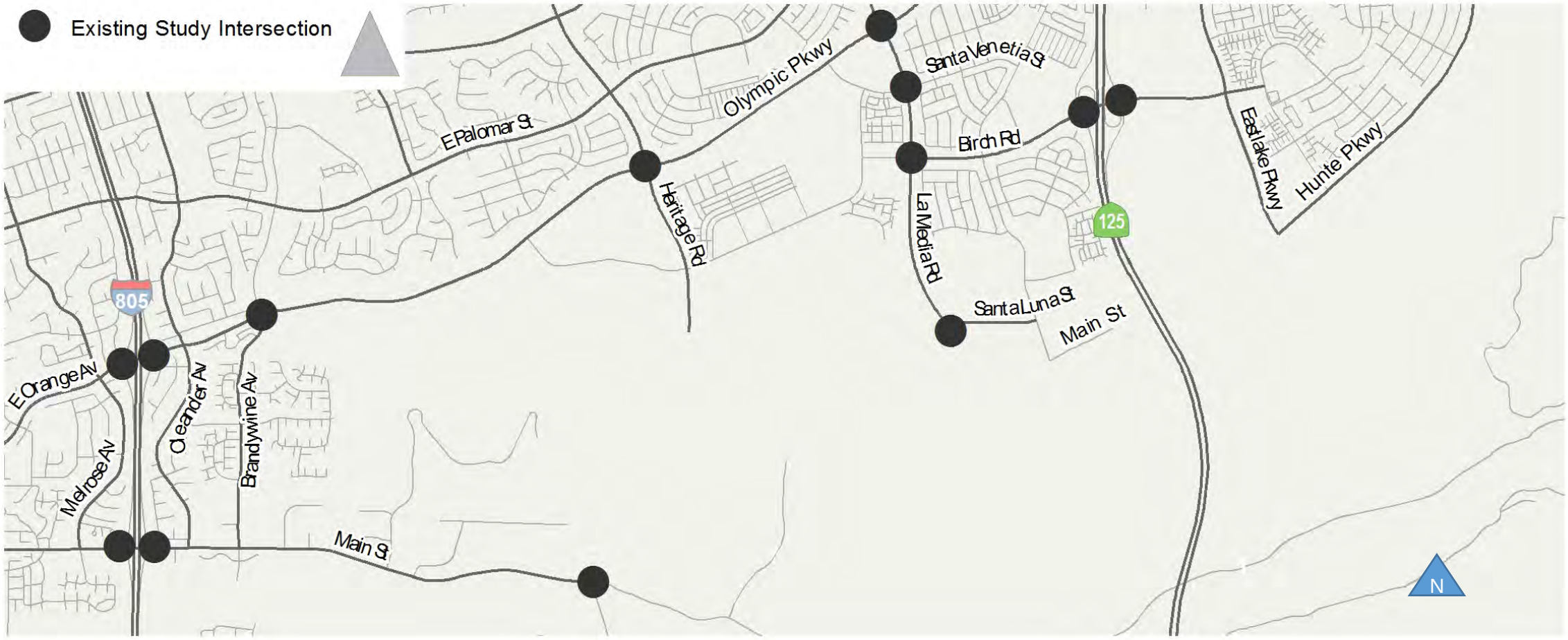
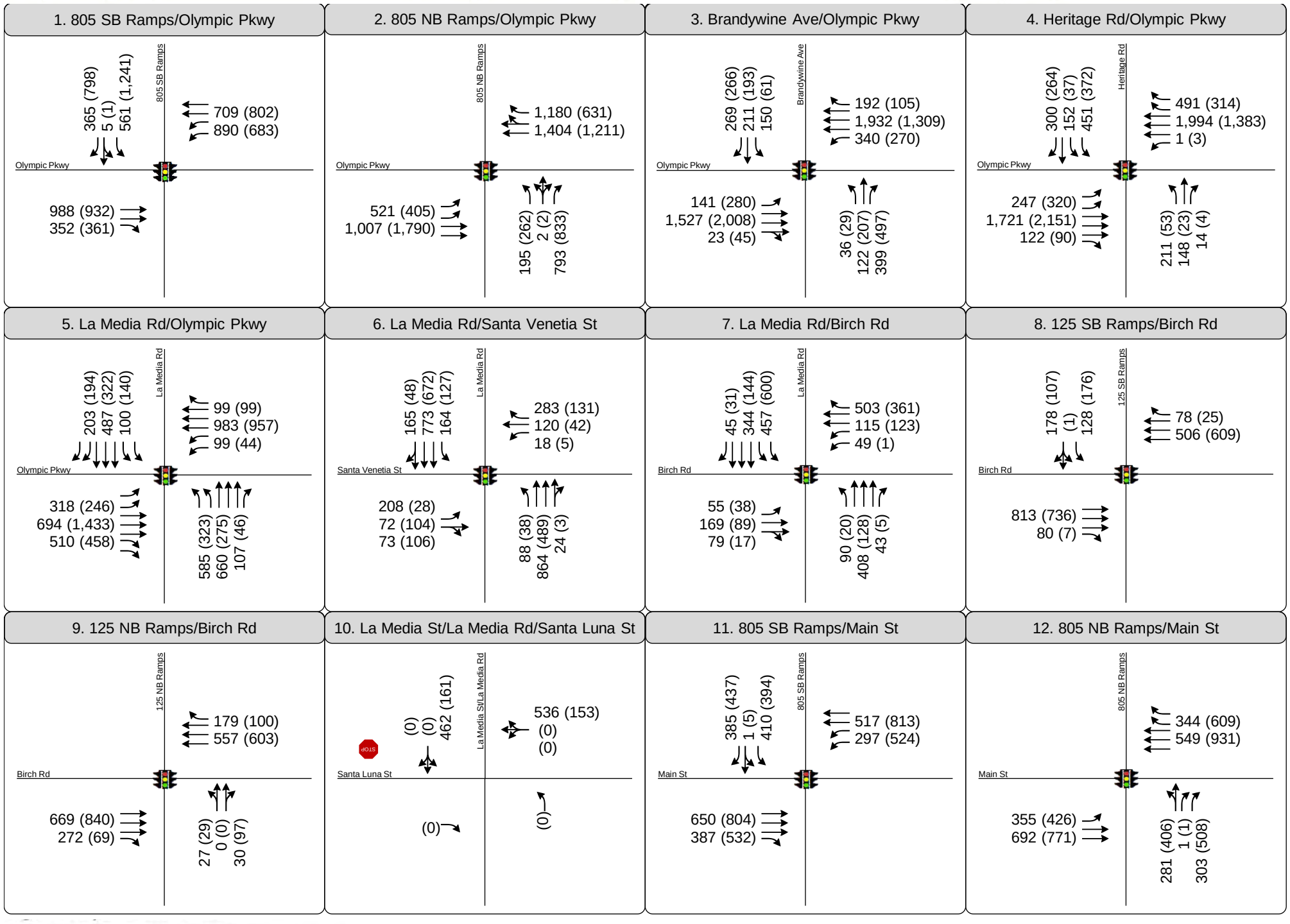


Figure 3-6b

Long Term (2030)

Peak Hour Trip Assignment





X (X) AM (PM) Peak Hour Traffic Volume

Figure 4-1

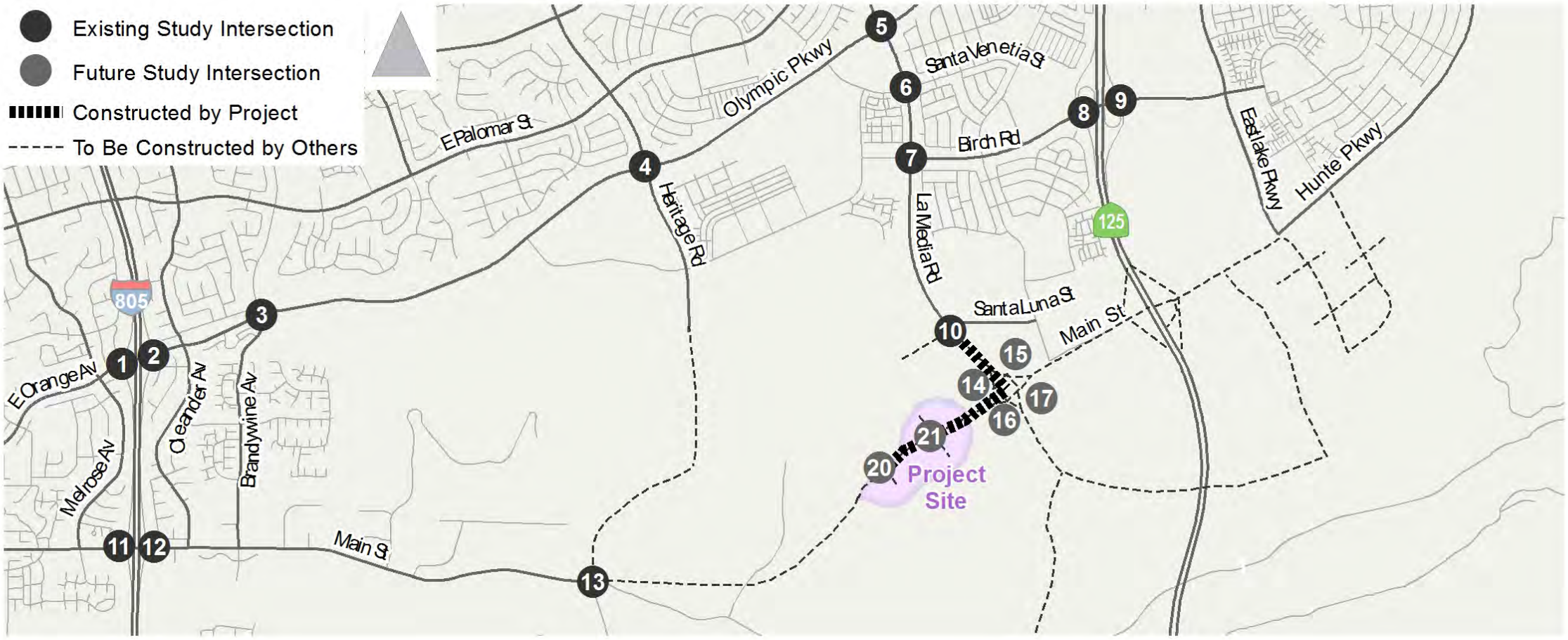
Peak Hour Traffic Volumes and Lane Configurations- Existing Conditions

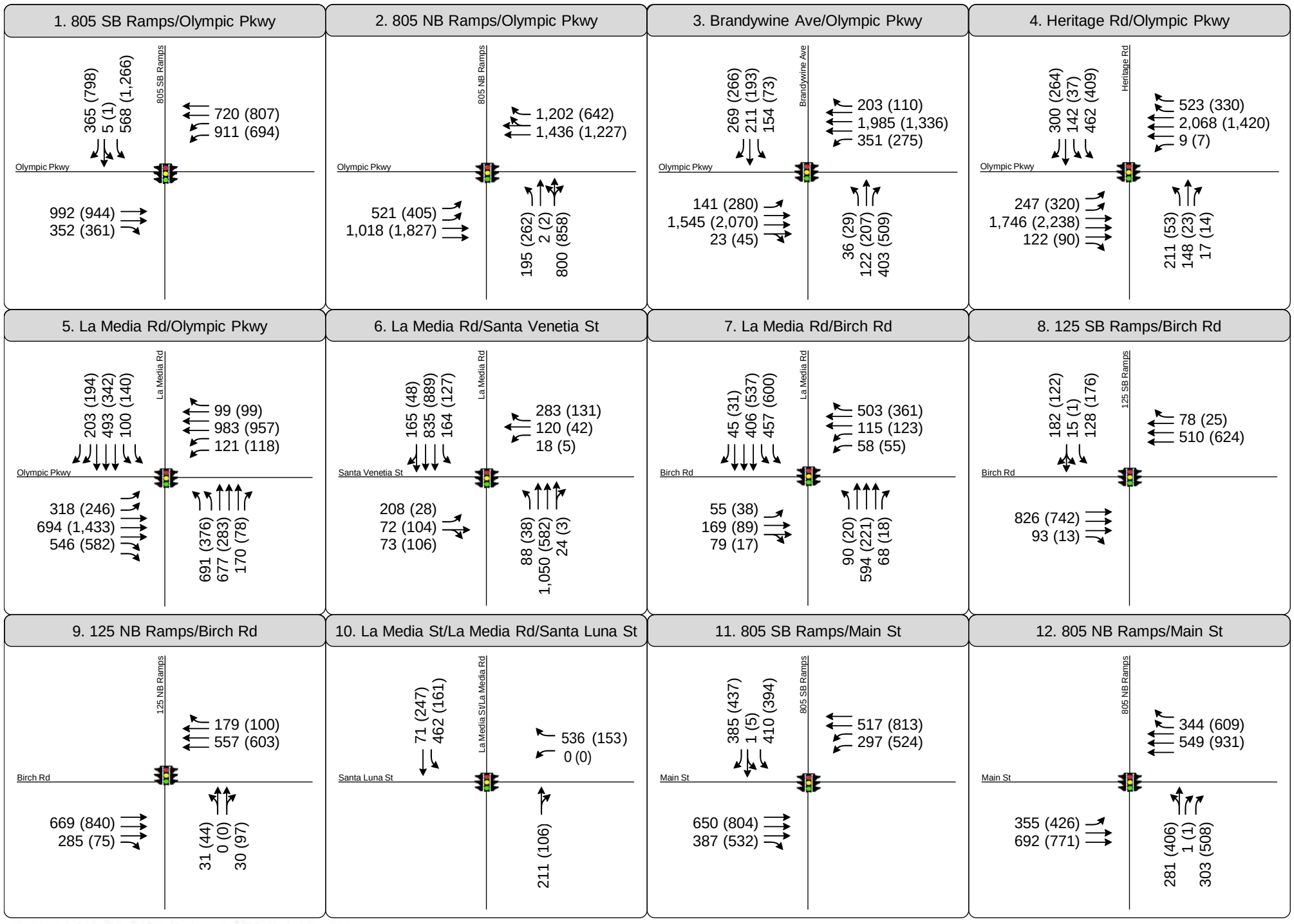


Sources:
Fehr & Peers, Nov. 2014
University Villages TIA, Chen-Ryan, 2014

Existing Conditions Daily Traffic Volumes & Roadway Network

FIGURE 4-2

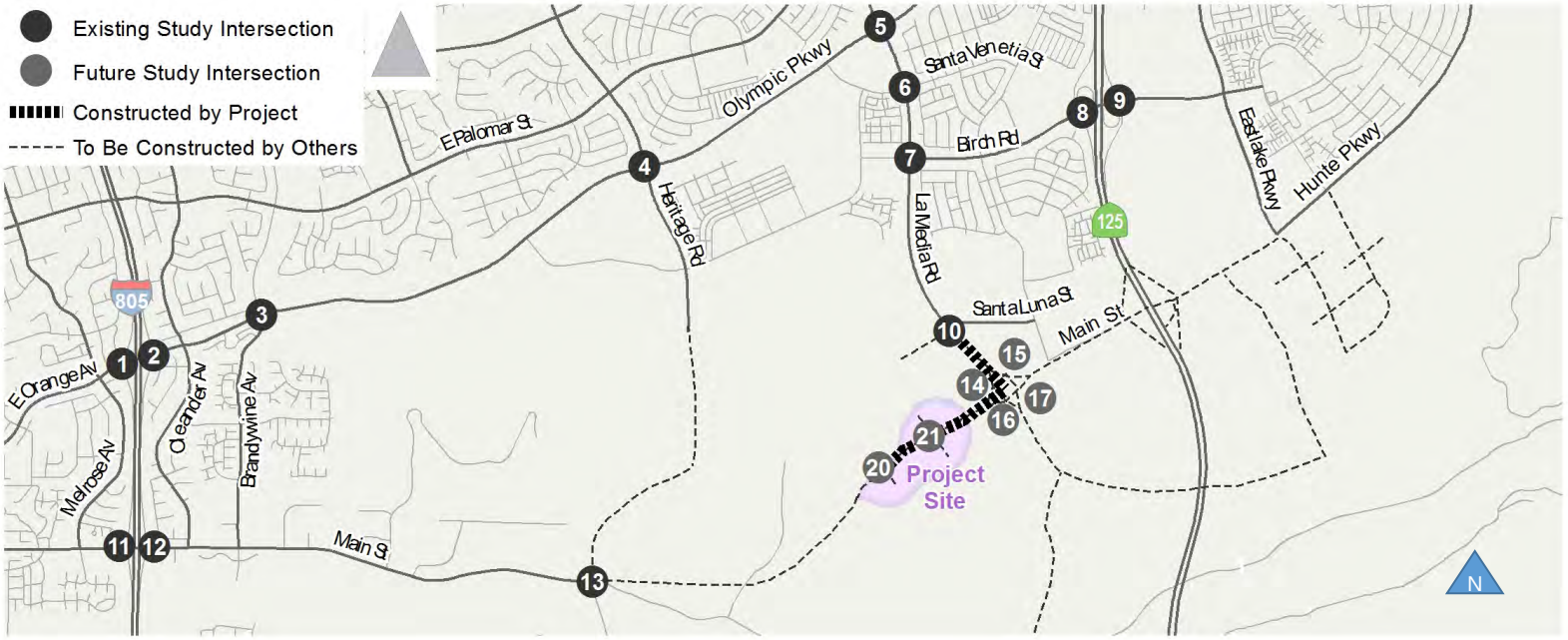




X (X) AM (PM) Peak Hour Traffic Volume

Figure 5-1a

Peak Hour Traffic Volumes and Lane Configurations- Existing Plus Project Conditions



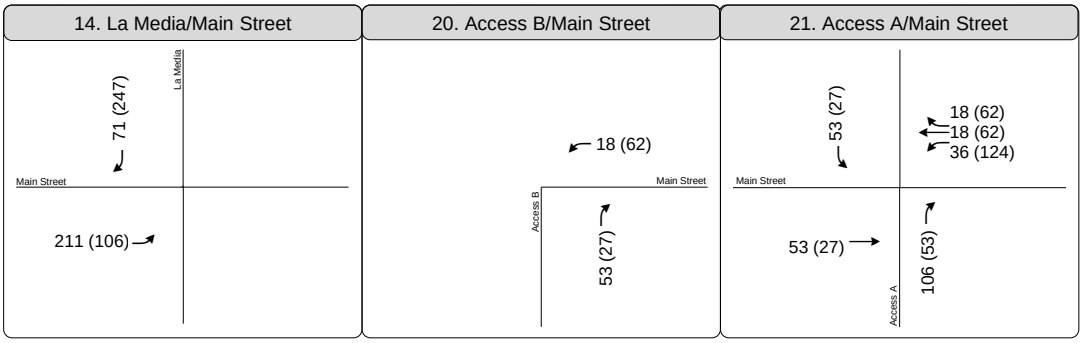
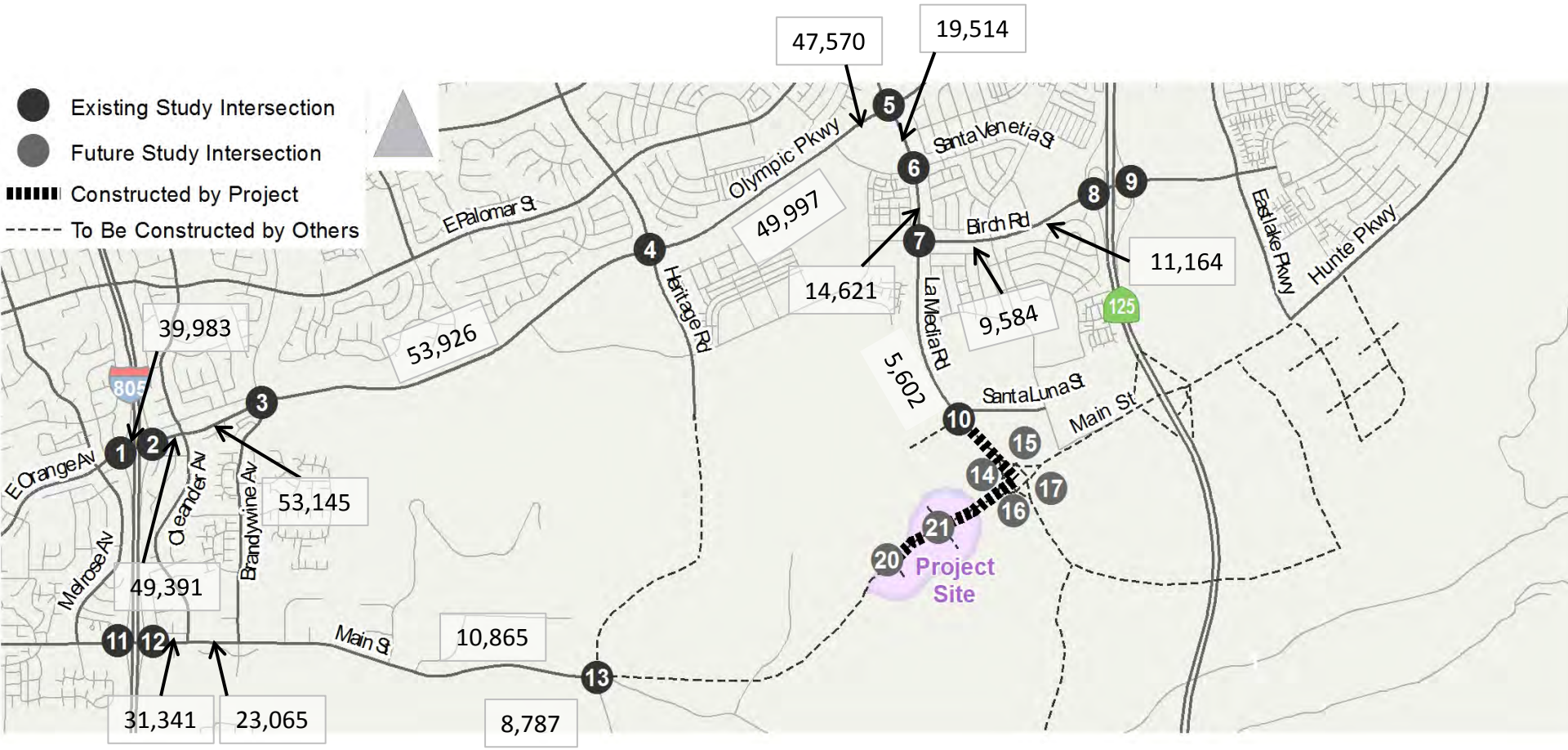


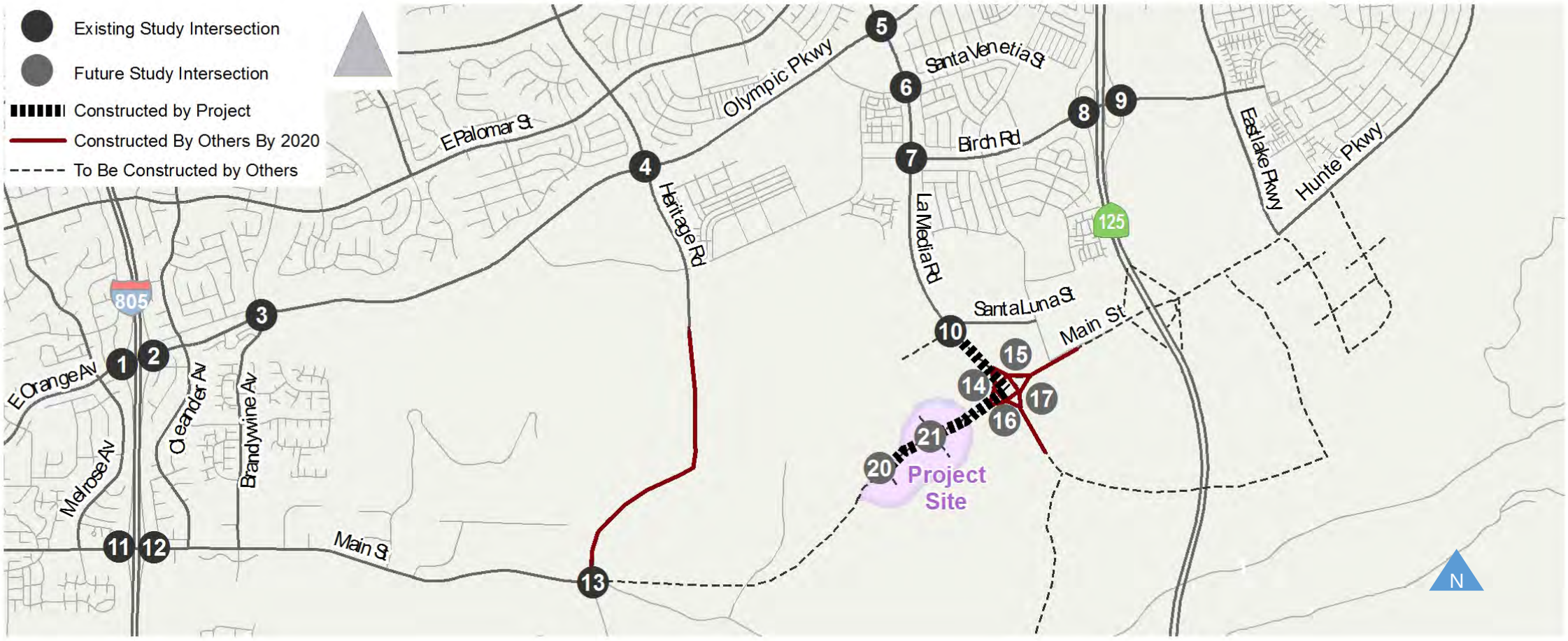
Figure 5-1b

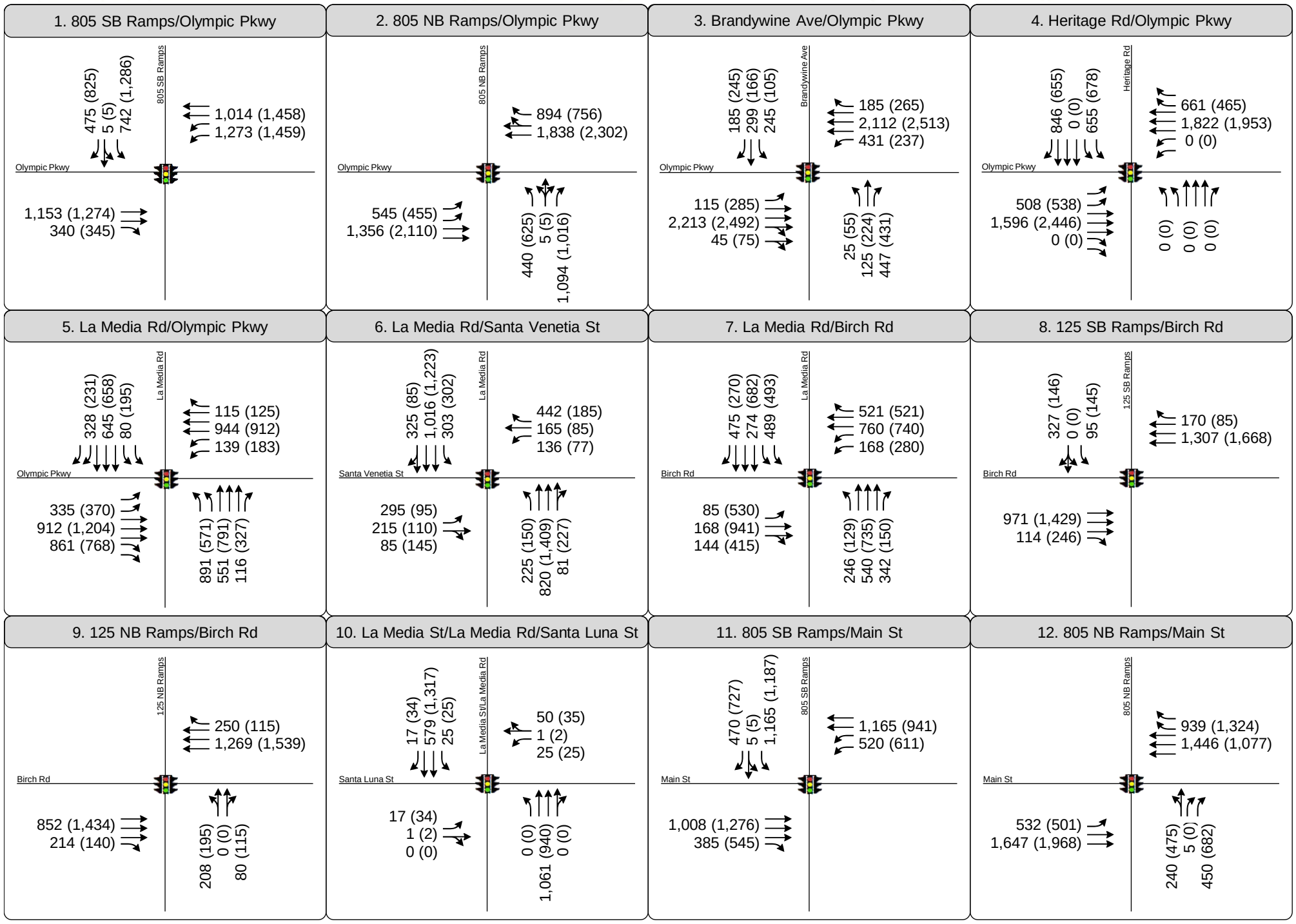
Peak Hour Traffic Volumes and Lane Configurations- Existing Plus Project Conditions



Existing Condition Plus Project Daily Traffic Volumes & Roadway Network

FIGURE 5-2

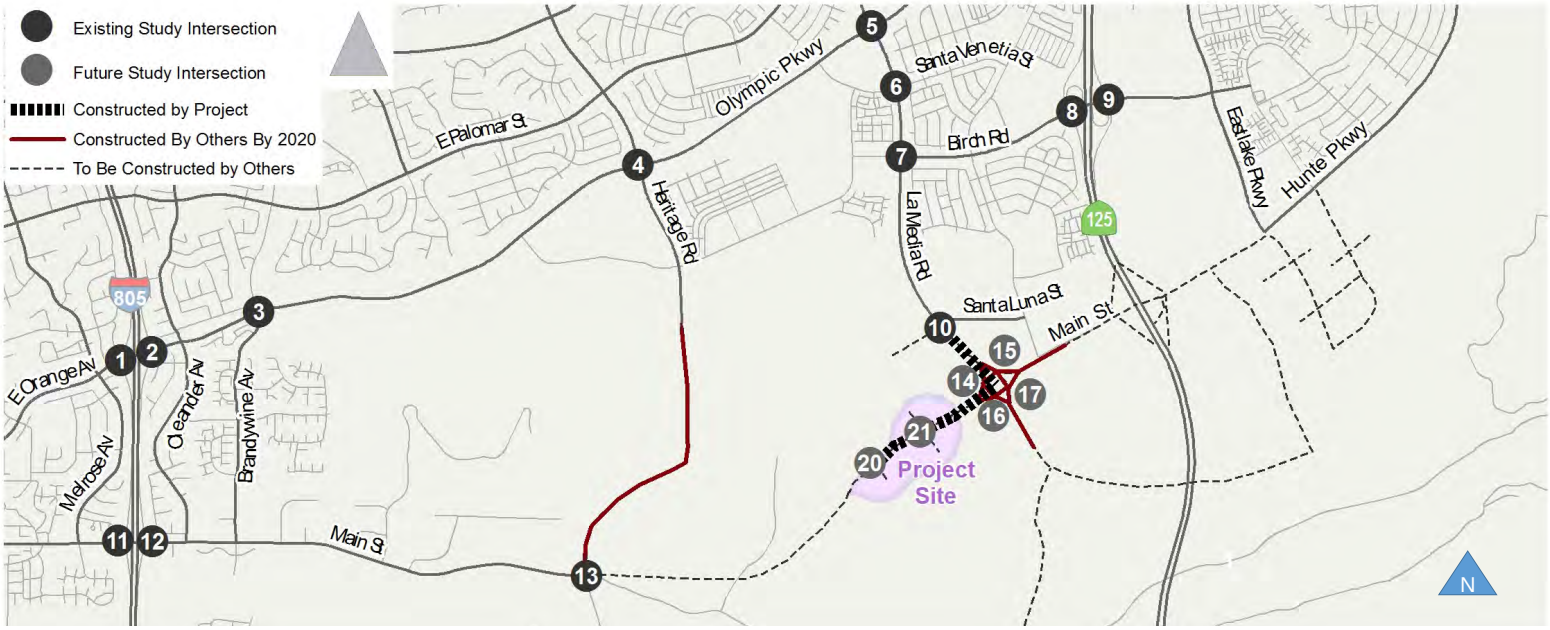


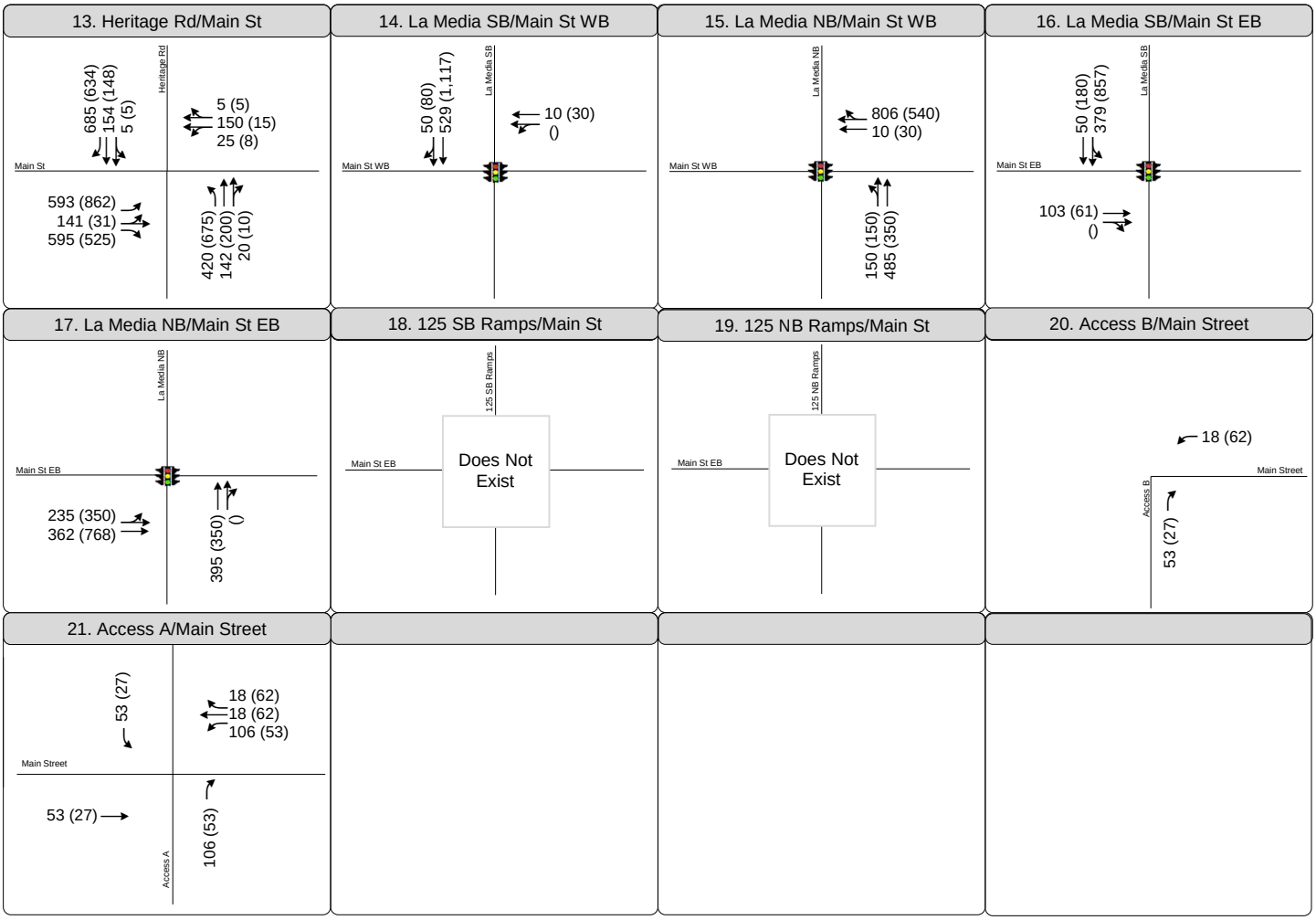


X (X) AM (PM) Peak Hour Traffic Volume

Figure 7-1a

Peak Hour Traffic Volumes and Lane Configurations - Mid-Term (2020) Conditions

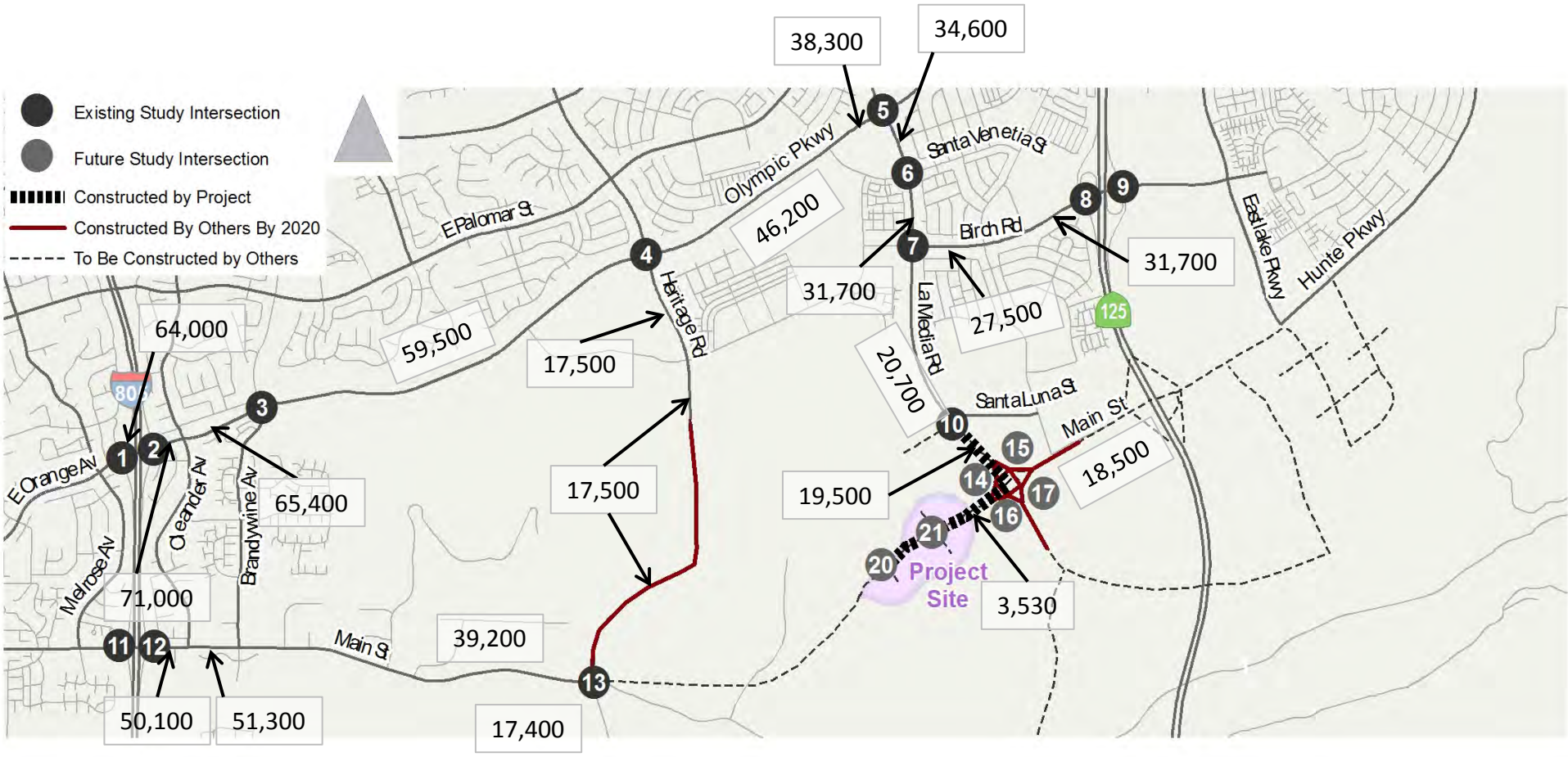




X (X) AM (PM) Peak Hour Traffic Volume

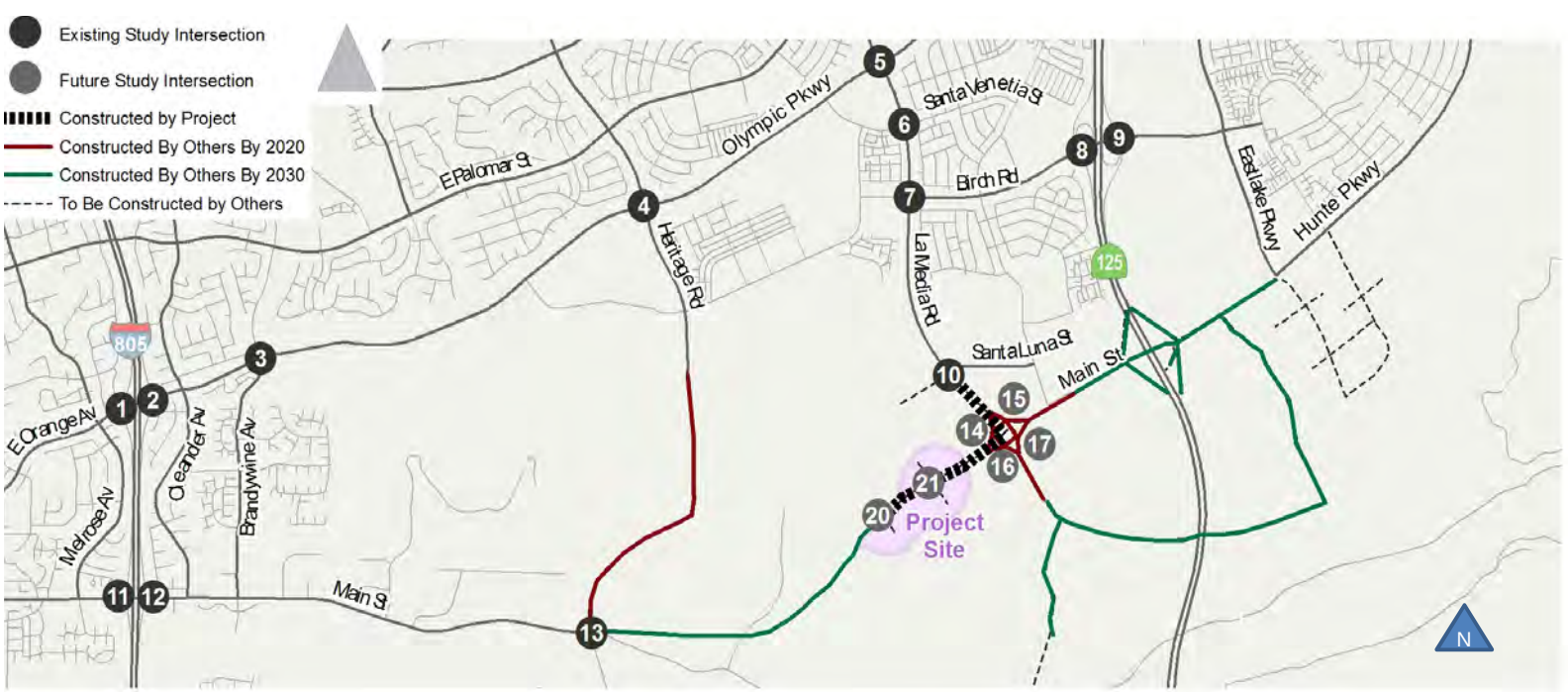
Figure 7-1b

Peak Hour Traffic Volumes and Lane Configurations - Mid-Term (2020) Conditions



Mid-Term (2020) Daily Traffic Volumes & Roadway Network

FIGURE 7-2



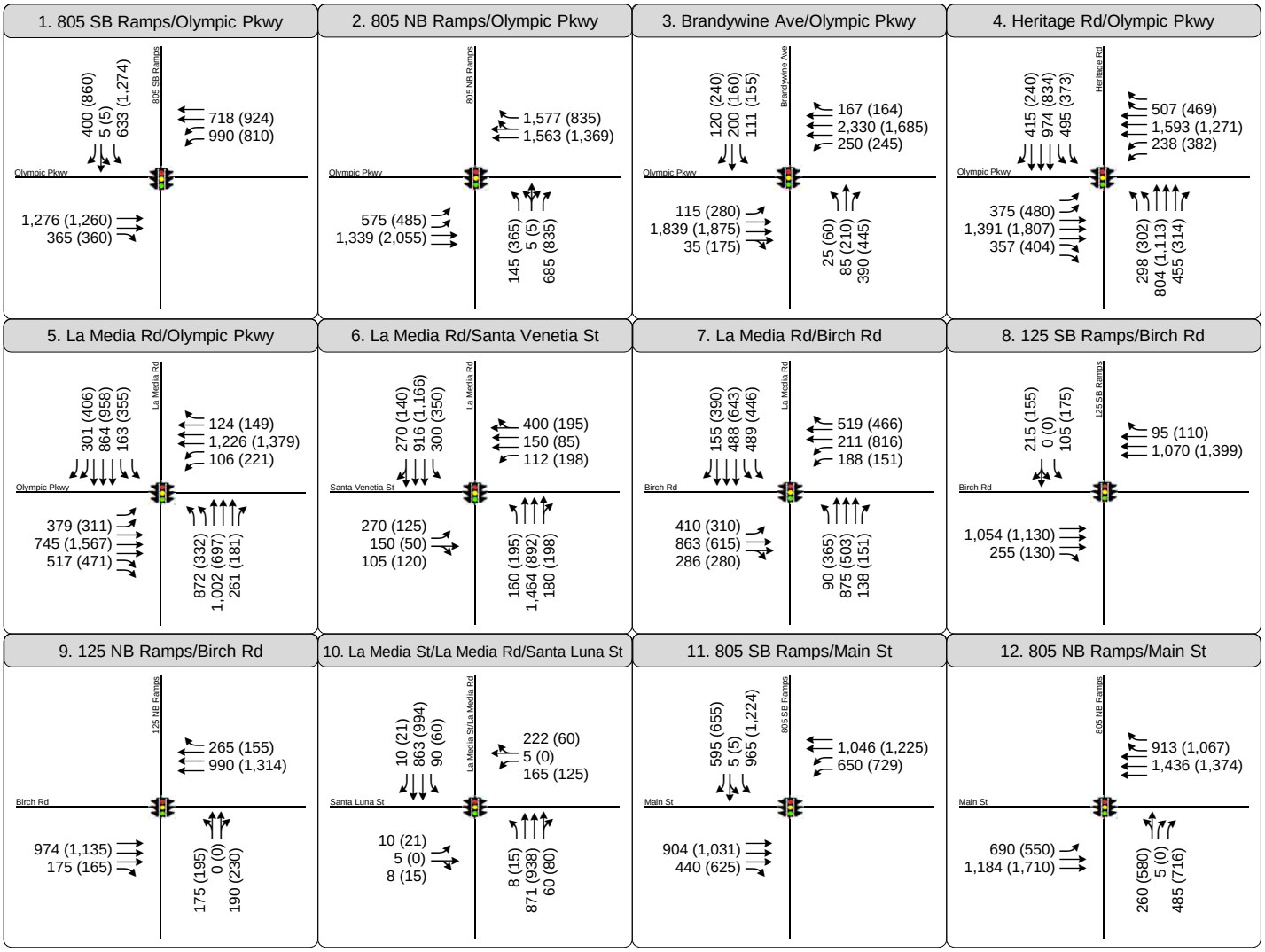
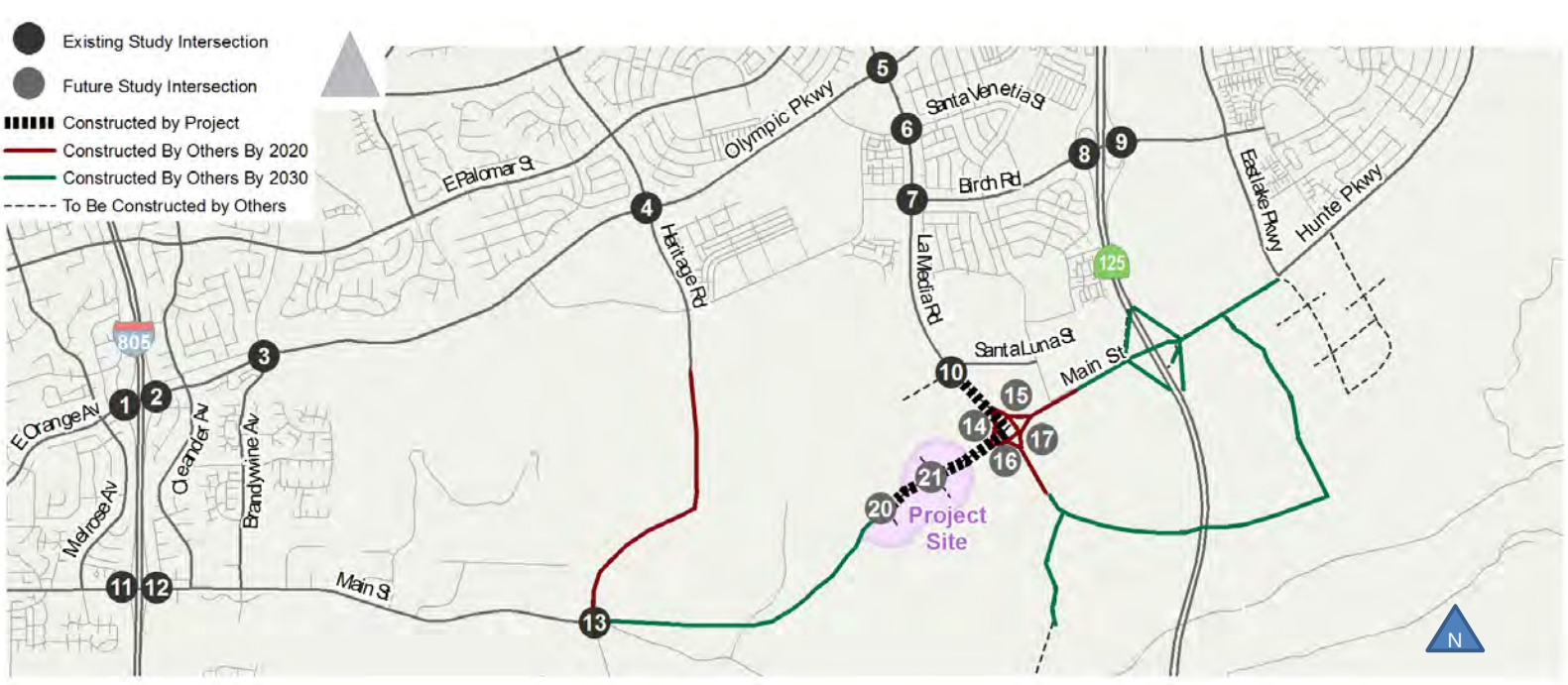
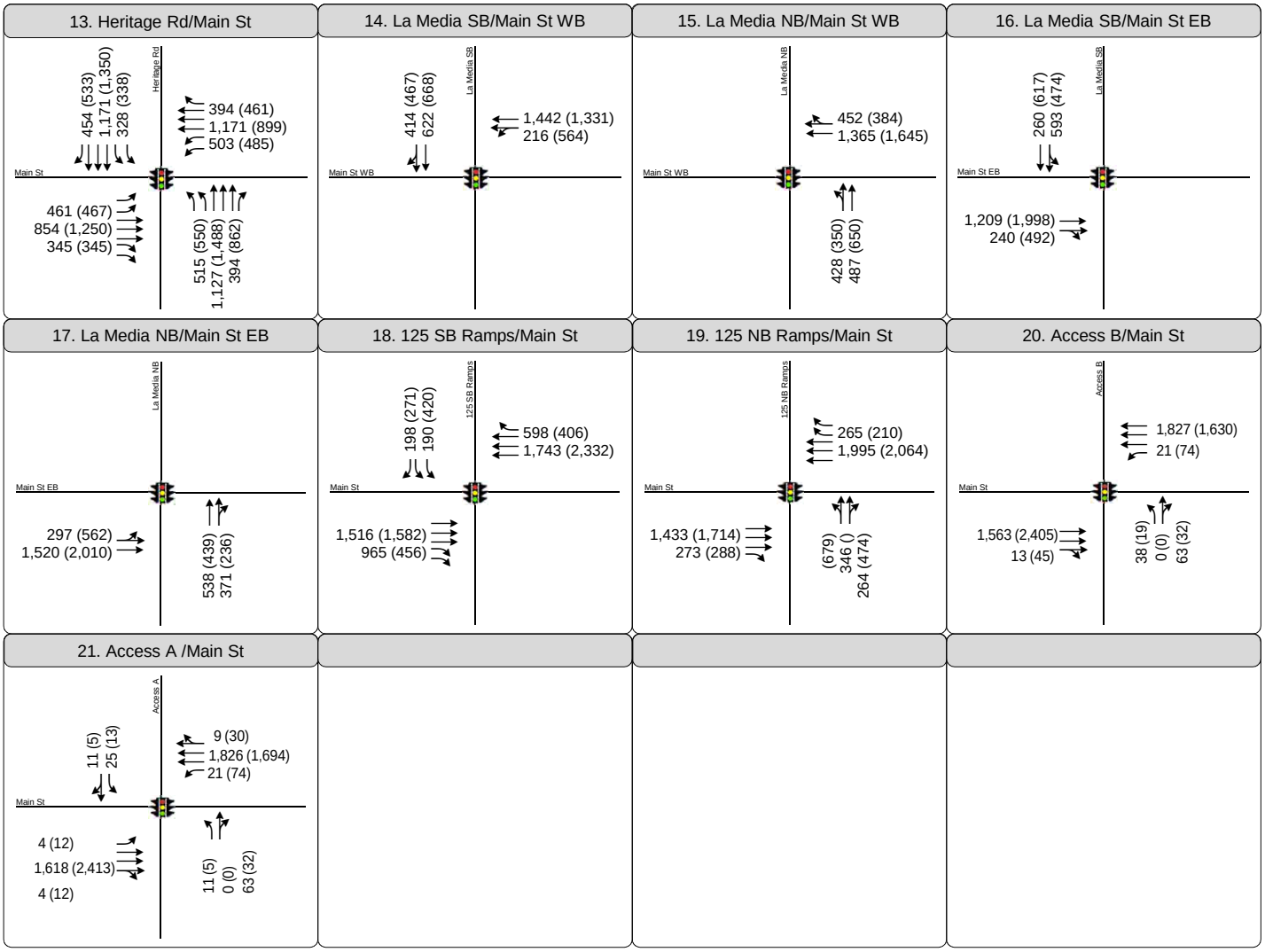


Figure 8-1a

Peak Hour Traffic Volumes and
and Lane Configurations - Long Term (2030)





X (X) AM (PM) Peak Hour Traffic Volume

Figure 8-1b

Peak Hour Traffic Volumes and
and Lane Configurations - Long Term (2030)

APPENDIX A: TRAFFIC COUNT VOLUMES

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

I-805 SB Ramps and Olympic Pkwy , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-009

City: Chula Vista

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach — I-805 SB Ramps

Lanes	1	0.5	1.5		
AM	365	5	561	0	AM
NOON	0	0	0	0	NOON
PM	798	1	1241	0	PM

Eastbound Approach — Olympic Pkwy

Lanes	AM	NOON	PM
	1074	0	1600
0	0	0	0
2	988	0	932
1	352	0	361

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
2	709	0	802
0	890	0	683
	1549	0	2173

CONTROL

Signalized

Northbound Approach

AM	1247	0	0	0
NOON	0	0	0	0
PM	1045	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		East Leg			West Leg			South Leg	
			AM	NOON	PM	AM	NOON	PM		
AM	931	0	1599	0	1485	1074	0	1600	1247	0
NOON	0	0	1549	0	2173	1340	0	1293	0	0
PM	2040	0							1045	0

Total Volume Per Leg

	North Leg	East Leg			West Leg			South Leg
		AM	NOON	PM	AM	NOON	PM	
AM	931	3148	0	3658	2414	0	2893	1247
NOON	0							0
PM	2040							1045

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

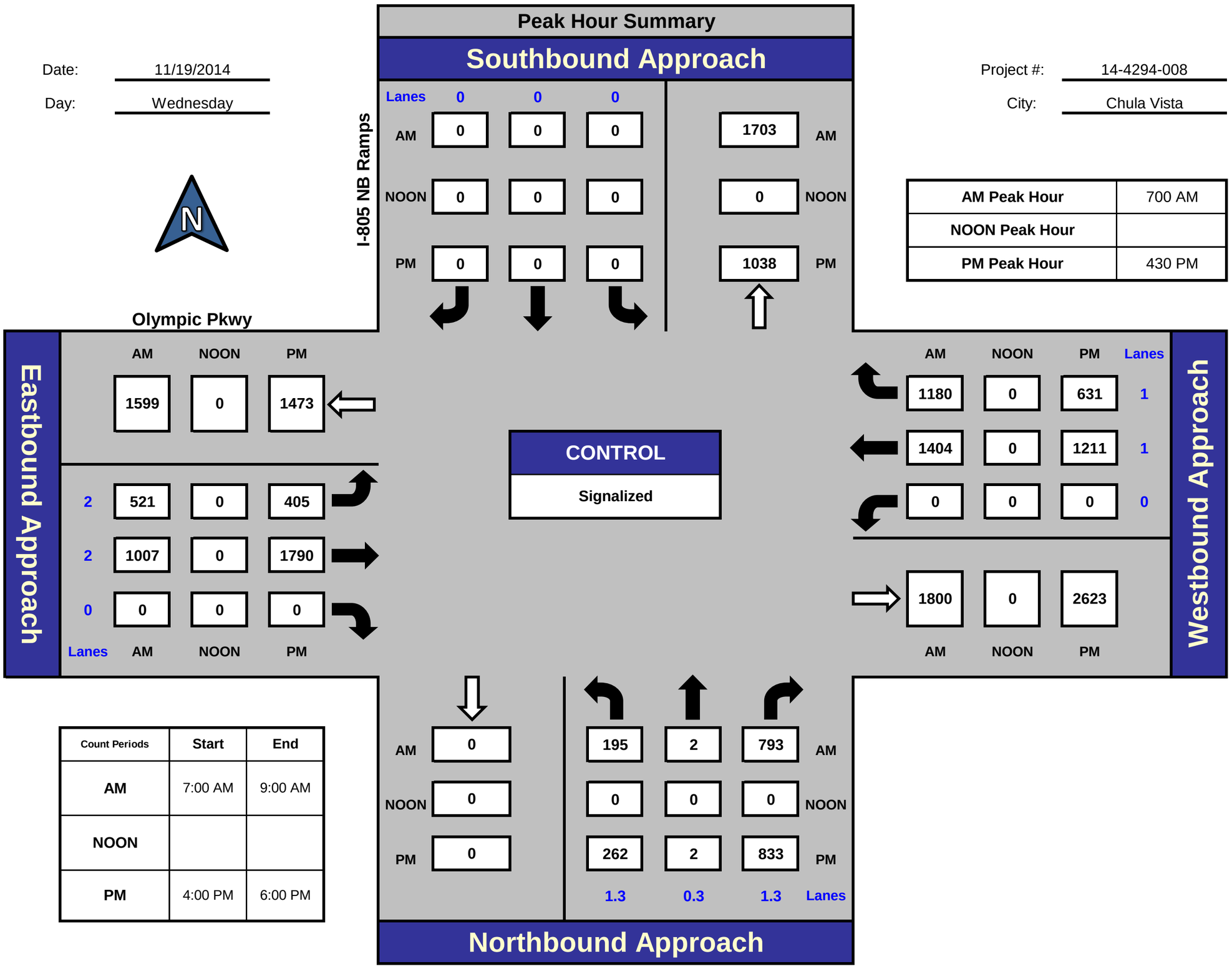
I-805 NB Ramps and Olympic Pkwy , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-008

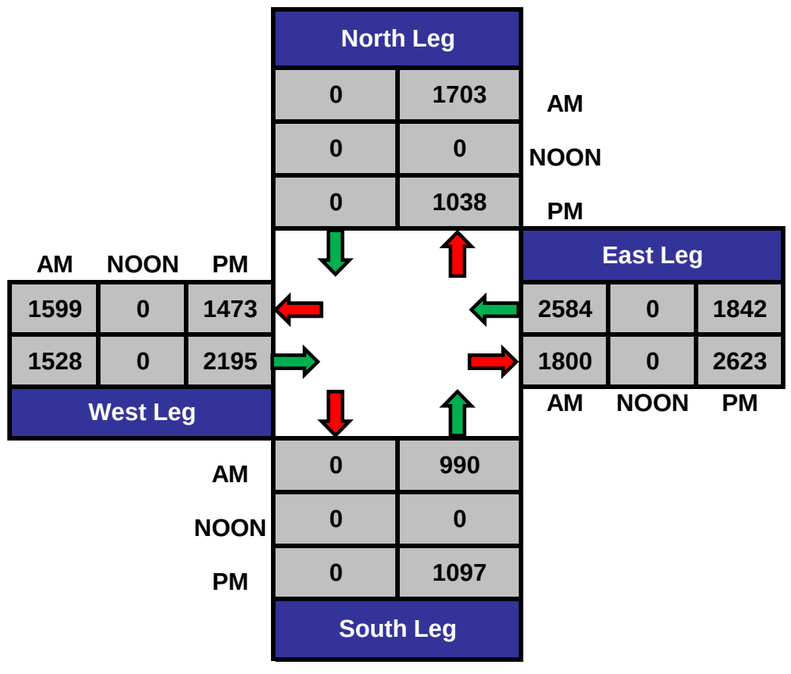
City: Chula Vista



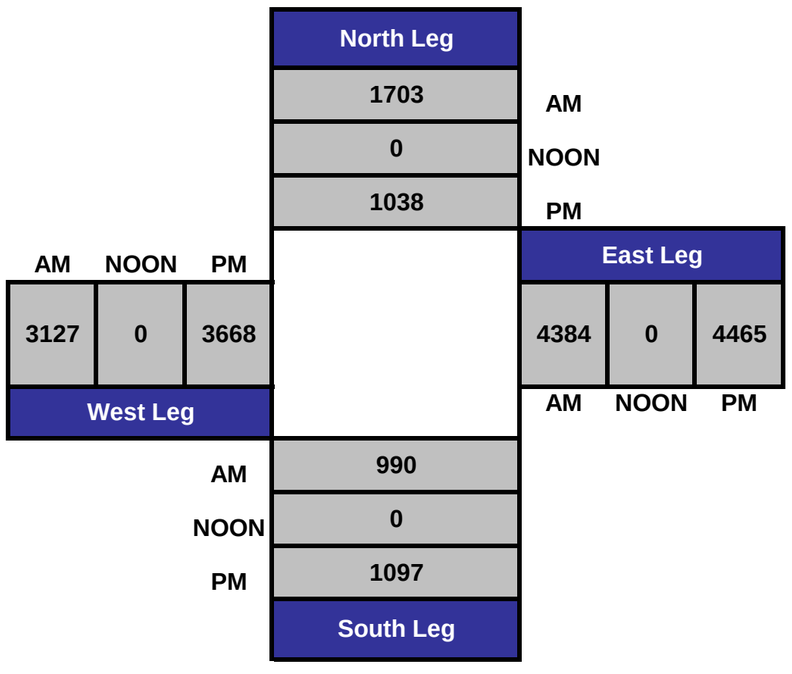
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Brandywine Ave and Olympic Pkwy , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-007

City: Chula Vista

Peak Hour Summary

	AM Peak Hour	NOON Peak Hour	PM Peak Hour
	700 AM		430 PM

Southbound Approach

Brandywine Ave

Lanes	1	1	1	
AM	269	211	150	455
NOON	0	0	0	0
PM	266	193	61	592

Eastbound Approach

Olympic Pkwy

Lanes	AM	NOON	PM
	2237	0	1604
1	141	0	280
3	1527	0	2008
0	23	0	45

Westbound Approach

Lanes	AM	NOON	PM
1	192	0	105
4	1932	0	1309
0	340	0	270
	2076	0	2566

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Northbound Approach

Lanes	1	1	1	
AM	574	36	122	399
NOON	0	0	0	0
PM	508	29	207	497

Total Ins & Outs

	AM	NOON	PM
North Leg	630	0	520
East Leg	455	0	592
South Leg	574	0	508
West Leg	557	0	733
East Leg	2464	0	1684
West Leg	2237	0	1604
East Leg	2076	0	2566
West Leg	1691	0	2333

Total Volume Per Leg

	AM	NOON	PM
North Leg	1085	0	1112
East Leg	4540	0	4250
South Leg	1131	0	1241
West Leg	3928	0	3937

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Heritage Rd and Olympic Pkwy , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-006

City: Chula Vista

Peak Hour Summary

	AM Peak Hour	NOON Peak Hour	PM Peak Hour
	700 AM		430 PM

Southbound Approach

Heritage Rd

Lanes	2	1	2	
AM	300	152	451	886 AM
NOON	0	0	0	0 NOON
PM	264	37	372	657 PM

Eastbound Approach

Olympic Pkwy

Lanes	AM	NOON	PM
	2455	0	1700
2	247	0	320
3	1721	0	2151
1	122	0	90

Westbound Approach

Lanes	AM	NOON	PM
2	491	0	314
3	1944	0	1383
1	1	0	3
	2186	0	2527

CONTROL

Signalized

Northbound Approach

Lanes	2	1	2	
AM	211	148	14	AM
NOON	0	0	0	NOON
PM	53	23	4	PM
	275			AM
	0			NOON
	130			PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	903	886	AM
	0	0	NOON
	673	657	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
2455	0	1700		2436	0	1700
2090	0	2561		2186	0	2527

	South Leg	
AM	275	373
NOON	0	0
PM	130	80

Total Volume Per Leg

	North Leg	
	1789	AM
	0	NOON
	1330	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
4545	0	4261	4622	0	4227

	South Leg
AM	648
NOON	0
PM	210

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

La Media Rd and Olympic Pkwy , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-005

City: Chula Vista

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach

La Media Rd

Lanes	2	3	2		
AM	203	487	100	1077	AM
NOON	0	0	0	0	NOON
PM	194	322	140	620	PM

Olympic Pkwy

Eastbound Approach

	AM	NOON	PM	Lanes
	1771	0	1474	
2	318	0	246	
3	694	0	1433	
2	510	0	458	
Lanes	AM	NOON	PM	

Westbound Approach

AM	NOON	PM	Lanes
99	0	99	1
983	0	957	3
89	0	44	2
901	0	1619	
AM	NOON	PM	

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

AM	1086		585	660	107	AM
NOON	0		0	0	0	NOON
PM	824		323	275	46	PM
			2	3	1	Lanes

Northbound Approach

Total Ins & Outs

	North Leg		
	790	1077	AM
	0	0	NOON
	656	620	PM
AM NOON PM			East Leg
1771 0 1474			1171 0 1100
1522 0 2137			901 0 1619
West Leg			AM NOON PM
	1086	1352	AM
	0	0	NOON
	824	644	PM
	South Leg		

Total Volume Per Leg

	North Leg		
	1867		AM
	0		NOON
	1276		PM
AM NOON PM			East Leg
3293 0 3611			2072 0 2719
West Leg			AM NOON PM
	2438		AM
	0		NOON
	1468		PM
	South Leg		

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

La Media Rd and Santa Venetia St , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-004

City: Chula Vista

Peak Hour Summary

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Southbound Approach (La Media Rd)

Lanes	0	3	1		
AM	165	773	164	1355	AM
NOON	0	0	0	0	NOON
PM	48	672	127	648	PM

Eastbound Approach (Santa Venetia St)

Lanes	AM	NOON	PM
1.5	208	0	28
0.5	72	0	104
0	73	0	106
	373	0	128
	353	0	238

Westbound Approach

Lanes	AM	NOON	PM
1	283	0	131
1	120	0	42
1	18	0	5
	260	0	234

CONTROL

Signalized

Northbound Approach

Lanes	1	3	0	
AM	88	864	24	AM
NOON	0	0	0	NOON
PM	38	489	3	PM
AM	864			
NOON	0			
PM	783			

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	1102	0	847
	1355	0	648
East Leg	421	0	178
	260	0	234
South Leg	864	0	783
	976	0	530
West Leg	373	0	128
	353	0	238

Total Volume Per Leg

	AM	NOON	PM
North Leg	2457	0	1495
East Leg	681	0	412
South Leg	1840	0	1313
West Leg	726	0	366

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

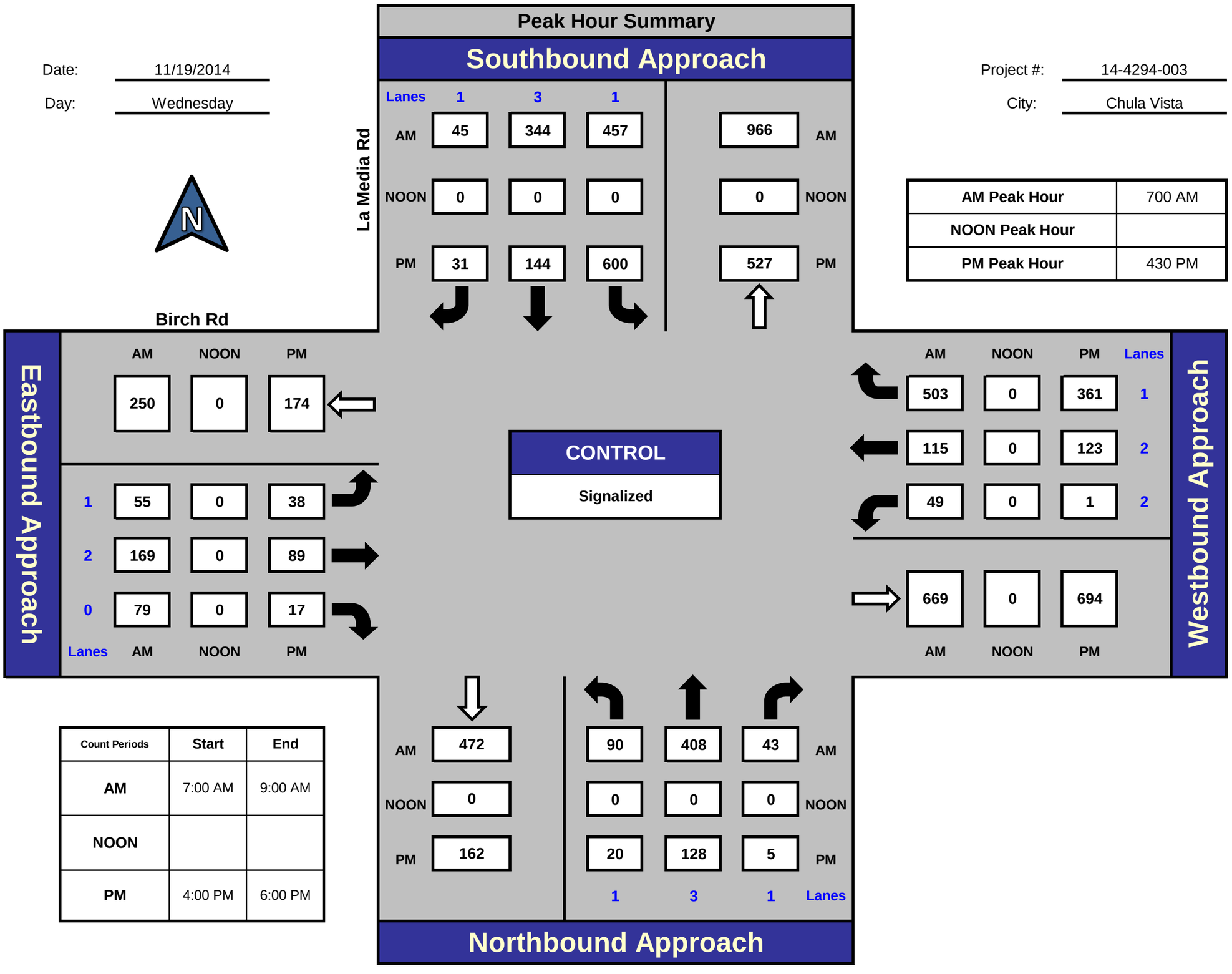
La Media Rd and Birch Rd , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-003

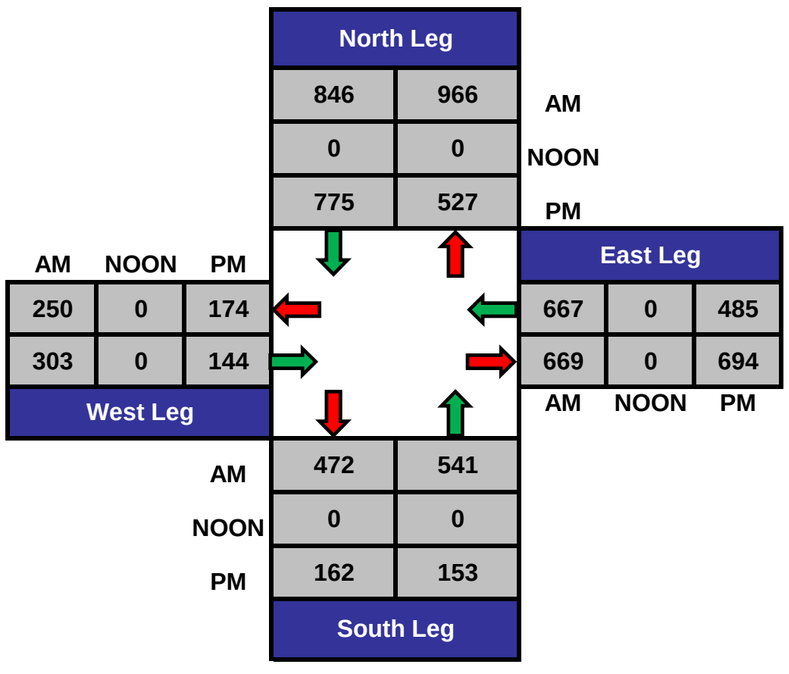
City: Chula Vista



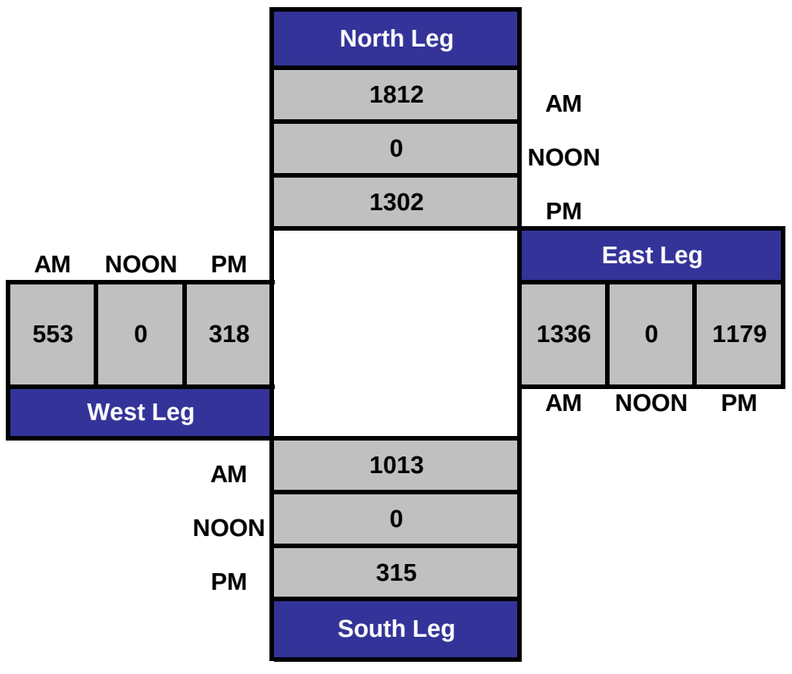
AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-125 SB Ramps and Birch Rd , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-002

City: Chula Vista

Peak Hour Summary

	AM Peak Hour	NOON Peak Hour	PM Peak Hour
	700 AM		500 PM

Southbound Approach (SR-125 SB Ramps)

Lanes	0.5	0	1.5		
AM	178	0	128	78	AM
NOON	0	0	0	0	NOON
PM	107	1	176	25	PM

Eastbound Approach (Birch Rd)

Lanes	AM	NOON	PM
	684	0	716
0	0	0	0
3	813	0	736
1	80	0	7

Westbound Approach

Lanes	AM	NOON	PM
1	78	0	25
3	506	0	609
0	0	0	0
	941	0	912

CONTROL: Signalized

Northbound Approach

Lanes	0	0	0	
AM	80	0	0	0	AM
NOON	0	0	0	0	NOON
PM	8	0	0	0	PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	306	0	284
	78	0	25
East Leg	584	0	634
	941	0	912
West Leg	684	0	716
	893	0	743
South Leg	80	0	8
	0	0	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	384	0	309
East Leg	1525	0	1546
West Leg	1577	0	1459
South Leg	80	0	8

ITM Peak Hour Summary

Prepared by:

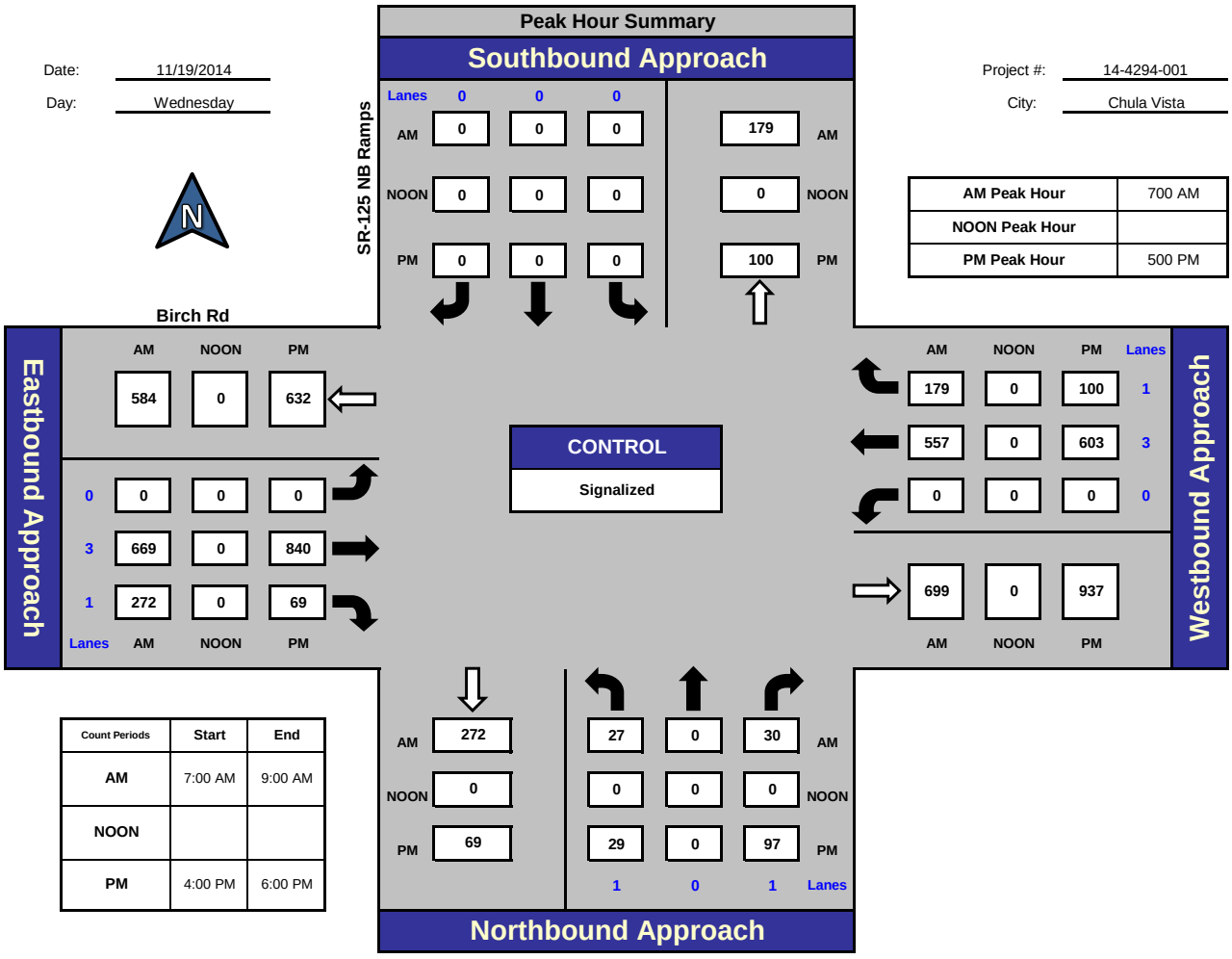
NDS

SR-125 NB Ramps and Birch Rd , Chula Vista

Date: 11/19/2014
Day: Wednesday

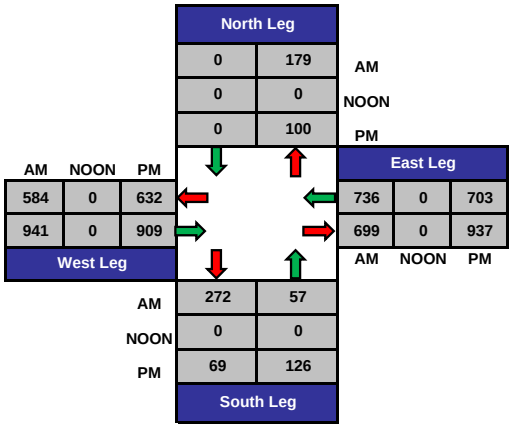
Project #: 14-4294-001
City: Chula Vista

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	500 PM

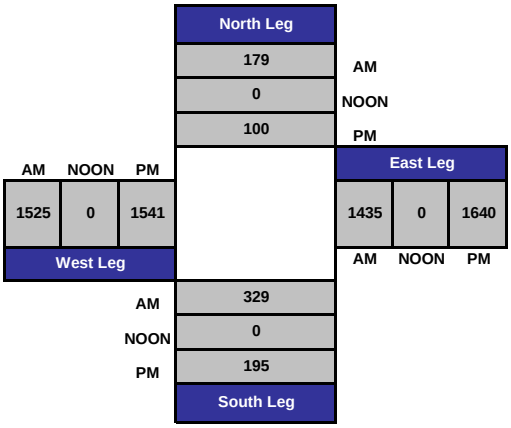


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

La Media Rd and Santa Luna St , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-010

City: Chula Vista

Peak Hour Summary

Southbound Approach

Lanes	0	0	3		
AM	0	0	462	536	AM
NOON	0	0	0	0	NOON
PM	0	0	161	153	PM

La Media Rd

	AM	NOON	PM
AM Peak Hour	700 AM		
NOON Peak Hour			
PM Peak Hour	430 PM		

Santa Luna St

Eastbound Approach

Lanes	AM	NOON	PM
0	0	0	0
0	0	0	0
0	0	0	0

AM	NOON	PM	Lanes
536	0	153	0
0	0	0	1
0	0	0	1
462	0	161	

Westbound Approach

CONTROL

2 Way Stop (WB & SB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

	AM	NOON	PM
AM	0	0	0
NOON	0	0	0
PM	0	0	0

Lanes	0	0	0

Northbound Approach

Total Ins & Outs

North Leg		
462	536	AM
0	0	NOON
161	153	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
0	0	0		536	0	153
0	0	0		462	0	161

South Leg		
0	0	AM
0	0	NOON
0	0	PM

Total Volume Per Leg

North Leg		
998		AM
0		NOON
314		PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
0	0	0		998	0	314

South Leg	
0	AM
0	NOON
0	PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

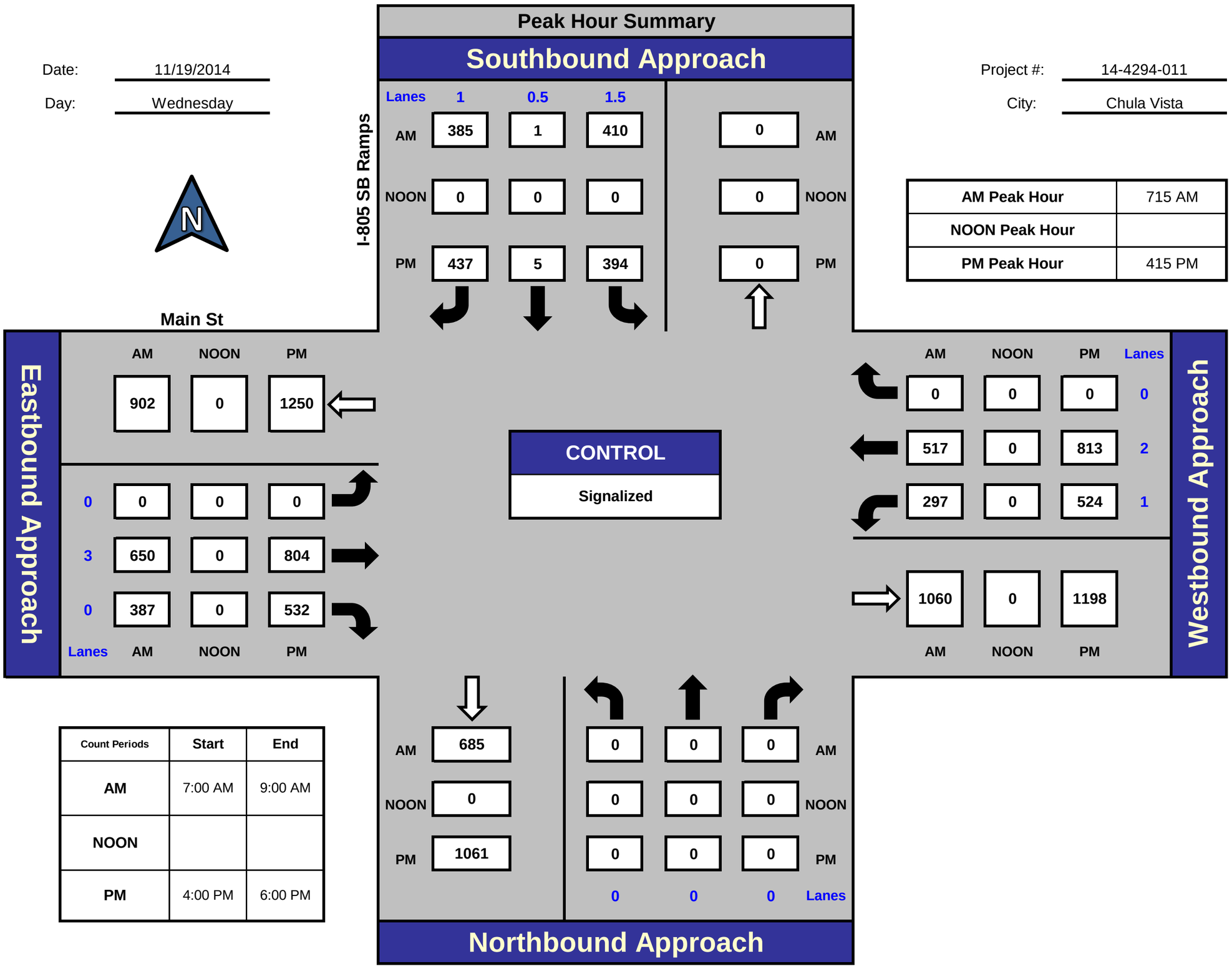
I-805 SB Ramps and Main St , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-011

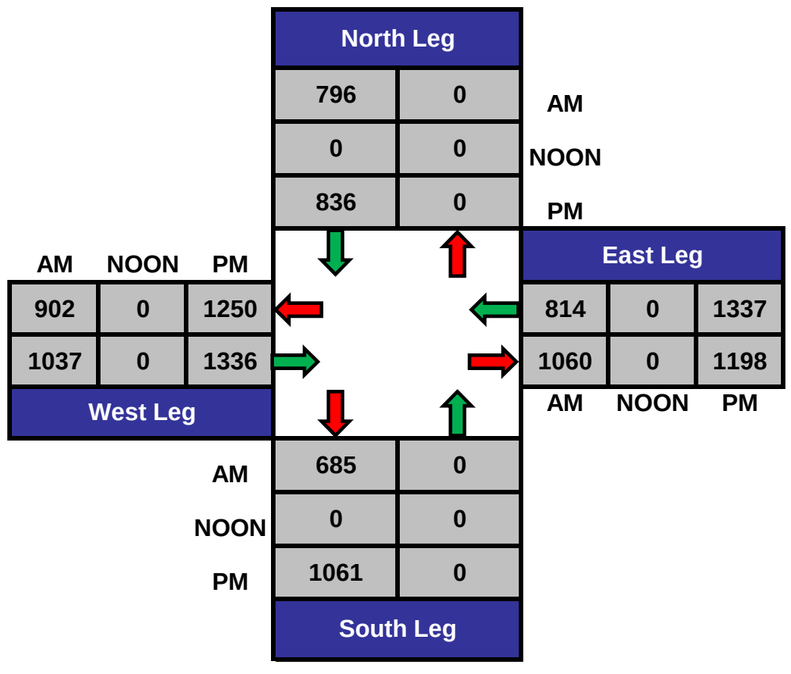
City: Chula Vista



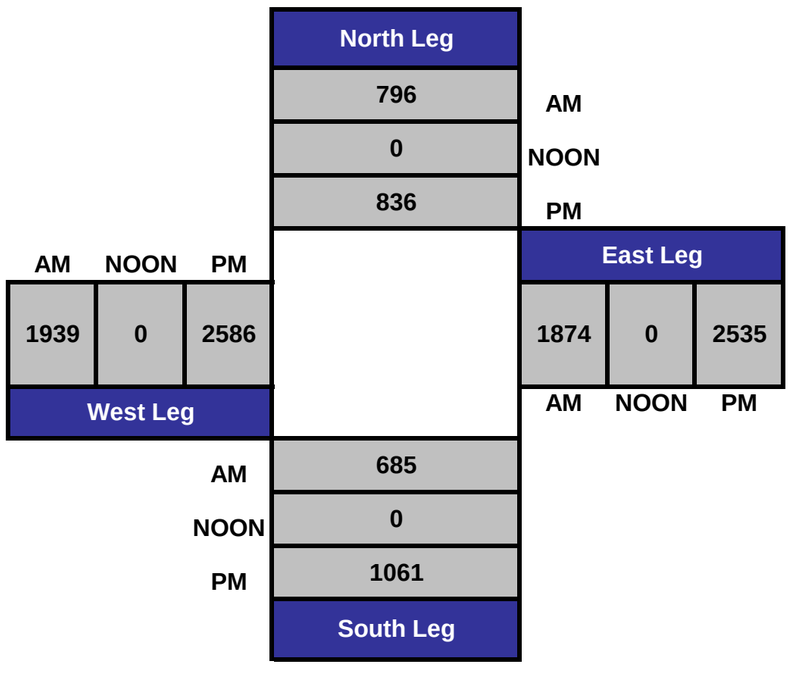
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

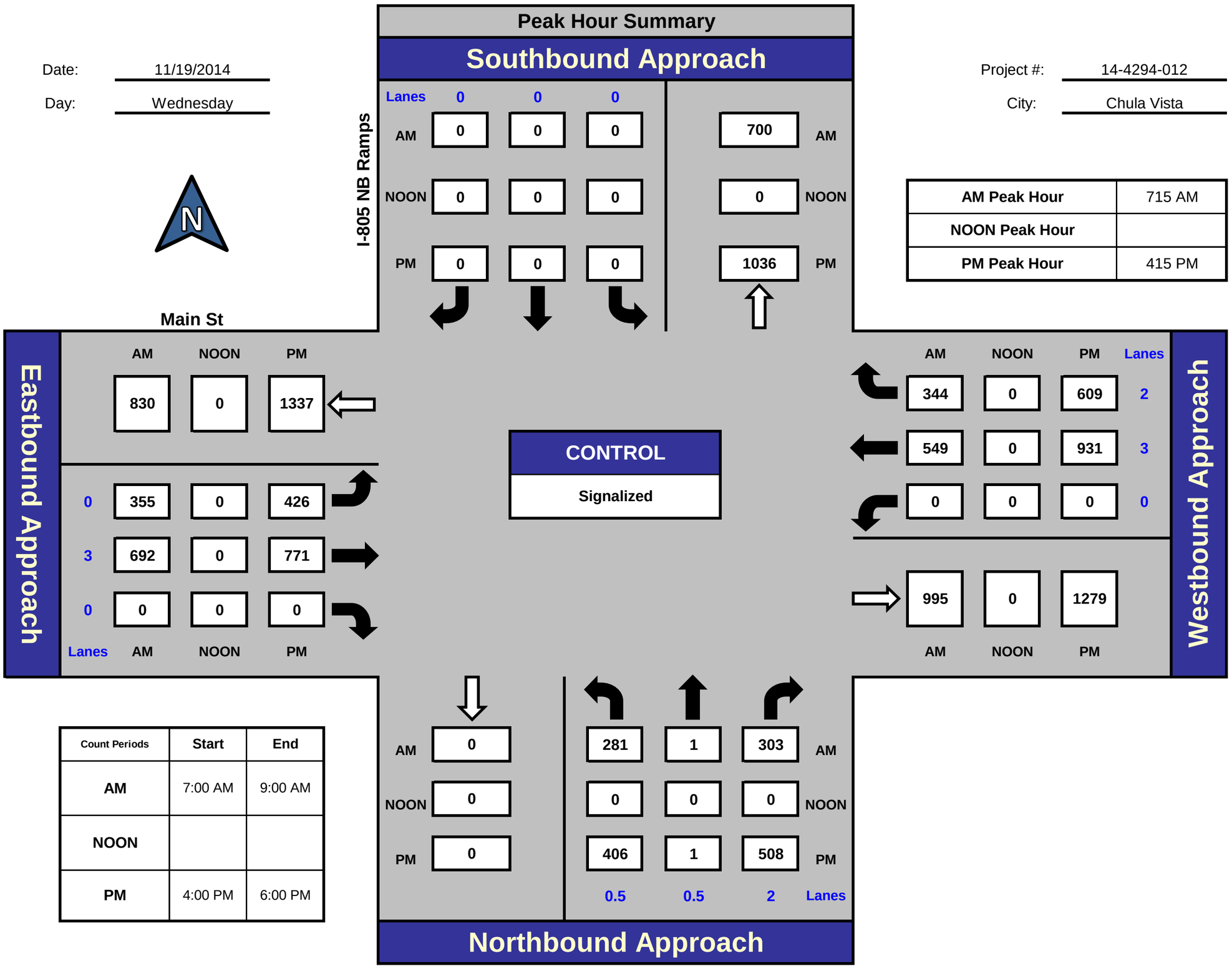
I-805 NB Ramps and Main St , Chula Vista

Date: 11/19/2014

Day: Wednesday

Project #: 14-4294-012

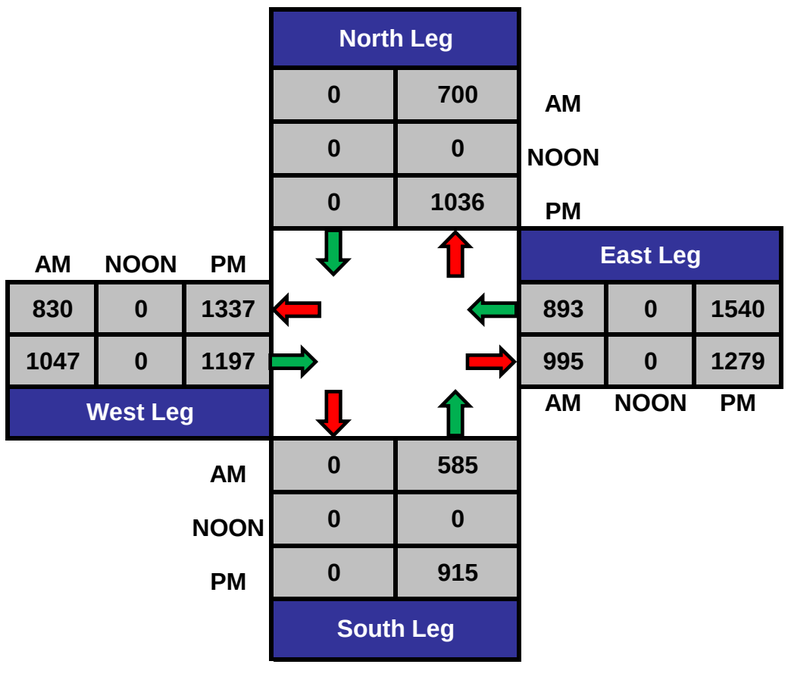
City: Chula Vista



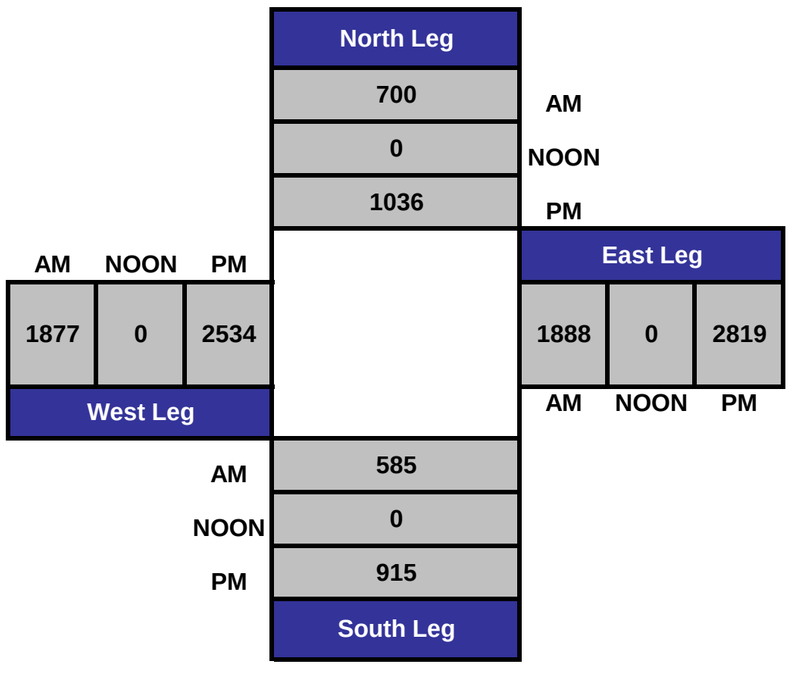
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

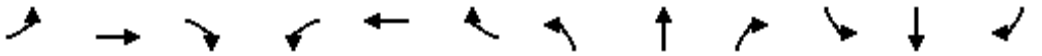
Total Ins & Outs



Total Volume Per Leg

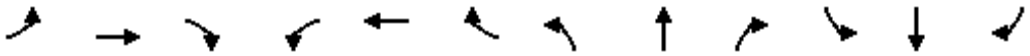


APPENDIX B: EXISTING CONDITIONS LOS WORKSHEETS



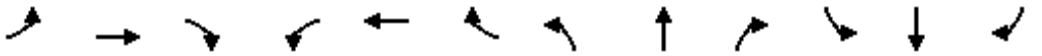
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	988	352	890	709	0	0	0	0	561	5	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1074	383	967	771	0	0	0	0	610	5	397
RTOR Reduction (vph)	0	0	218	0	0	0	0	0	0	0	0	204
Lane Group Flow (vph)	0	1074	165	967	771	0	0	0	0	305	310	193
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		44.3	44.3	36.7	84.8					25.3	25.3	25.3
Effective Green, g (s)		44.3	44.3	36.7	84.8					25.3	25.3	25.3
Actuated g/C Ratio		0.37	0.37	0.31	0.71					0.21	0.21	0.21
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1306	584	1049	2500					354	355	333
v/s Ratio Prot		c0.30		c0.28	0.22							
v/s Ratio Perm			0.10							0.18	0.18	0.12
v/c Ratio		0.82	0.28	0.92	0.31					0.86	0.87	0.58
Uniform Delay, d1		34.3	26.7	40.3	6.6					45.7	45.8	42.6
Progression Factor		1.00	1.00	1.49	1.23					1.00	1.00	1.00
Incremental Delay, d2		5.9	1.2	1.5	0.0					18.9	20.4	2.6
Delay (s)		40.2	27.9	61.7	8.1					64.5	66.2	45.2
Level of Service		D	C	E	A					E	E	D
Approach Delay (s)		37.0			37.9			0.0			57.4	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



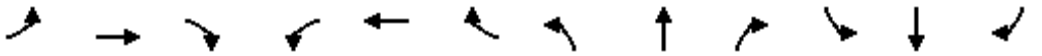
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	521	1007	0	0	1404	1180	195	2	793	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.97	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3280	1441	1681	1451	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3280	1441	1681	1451	1504			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	560	1083	0	0	1510	1269	210	2	853	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	283	0	122	122	0	0	0
Lane Group Flow (vph)	560	1083	0	0	1909	567	189	319	313	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	17.8	86.7			64.7	64.7	23.4	23.4	23.4			
Effective Green, g (s)	17.8	86.7			64.7	64.7	23.4	23.4	23.4			
Actuated g/C Ratio	0.15	0.72			0.54	0.54	0.19	0.19	0.19			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	509	2556			1768	776	327	282	293			
v/s Ratio Prot	c0.16	0.31			c0.58							
v/s Ratio Perm						0.39	0.11	0.22	0.21			
v/c Ratio	1.10	0.42			1.08	0.73	0.58	1.13	1.07			
Uniform Delay, d1	51.1	6.7			27.6	21.0	43.8	48.3	48.3			
Progression Factor	0.79	1.46			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	60.6	0.3			46.6	6.0	2.5	93.3	71.4			
Delay (s)	101.2	10.0			74.2	27.0	46.3	141.6	119.7			
Level of Service	F	B			E	C	D	F	F			
Approach Delay (s)		41.1			59.8			115.7			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



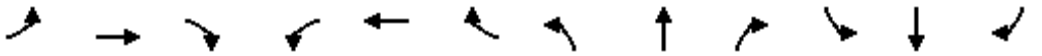
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	1527	23	340	1932	192	36	122	399	150	211	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	147	1591	24	354	2012	200	38	127	416	156	220	280
RTOR Reduction (vph)	0	1	0	0	0	42	0	0	327	0	0	196
Lane Group Flow (vph)	147	1614	0	354	2012	158	38	127	89	156	220	84
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	16.3	64.4		33.8	81.5	81.5	6.2	18.3	18.3	14.9	27.0	27.0
Effective Green, g (s)	16.3	64.4		33.8	81.5	81.5	6.2	18.3	18.3	14.9	27.0	27.0
Actuated g/C Ratio	0.11	0.43		0.23	0.54	0.54	0.04	0.12	0.12	0.10	0.18	0.18
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	192	2178		398	2762	860	73	227	193	175	335	284
v/s Ratio Prot	0.08	0.32		c0.20	c0.40		0.02	0.07		c0.09	c0.12	
v/s Ratio Perm						0.10			0.06			0.05
v/c Ratio	0.77	0.74		0.89	0.73	0.18	0.52	0.56	0.46	0.89	0.66	0.30
Uniform Delay, d1	65.0	35.8		56.3	25.9	17.4	70.4	62.1	61.3	66.8	57.2	53.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.9	2.3		20.7	1.3	0.3	3.1	3.0	1.8	38.1	4.6	0.6
Delay (s)	80.9	38.1		77.0	27.2	17.6	73.5	65.0	63.0	104.8	61.8	53.9
Level of Service	F	D		E	C	B	E	E	E	F	E	D
Approach Delay (s)		41.7			33.3			64.2			68.6	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



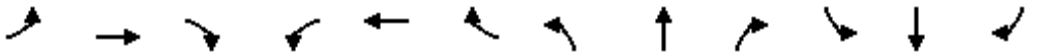
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1721	122	1	1994	491	211	148	14	451	152	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1871	133	1	2167	534	229	161	15	490	165	326
RTOR Reduction (vph)	0	0	34	0	0	104	0	0	12	0	0	97
Lane Group Flow (vph)	268	1871	99	1	2167	430	229	161	3	490	165	229
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	75.6	75.6	0.7	65.3	65.3	20.0	25.2	25.2	20.1	25.3	25.3
Effective Green, g (s)	11.0	75.6	75.6	0.7	65.3	65.3	20.0	25.2	25.2	20.1	25.3	25.3
Actuated g/C Ratio	0.08	0.53	0.53	0.00	0.46	0.46	0.14	0.18	0.18	0.14	0.18	0.18
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	5.2	2.0	3.5	3.5	2.0	3.5	3.5
Lane Grp Cap (vph)	266	2711	843	8	2341	1283	249	331	281	486	332	282
v/s Ratio Prot	c0.08	0.37		0.00	c0.43		0.13	0.09		c0.14	0.09	
v/s Ratio Perm			0.06			0.15			0.00			c0.14
v/c Ratio	1.01	0.69	0.12	0.12	0.93	0.34	0.92	0.49	0.01	1.01	0.50	0.81
Uniform Delay, d1	65.4	24.4	16.5	70.2	36.0	24.4	60.1	52.5	48.0	60.9	52.5	56.0
Progression 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
Incremental Delay, d2	57.1	1.0	0.1	2.6	7.3	0.3	35.2	1.3	0.0	42.9	1.4	16.5
Delay (s)	122.5	25.5	16.6	72.8	43.3	24.8	95.3	53.8	48.0	103.7	53.9	72.5
Level of Service	F	C	B	E	D	C	F	D	D	F	D	E
Approach Delay (s)		36.4			39.6			77.0			85.0	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	141.8	Sum of lost time (s)	20.2
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



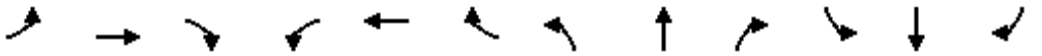
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	318	694	510	99	983	99	585	660	107	100	487	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	342	746	548	106	1057	106	629	710	115	108	524	218
RTOR Reduction (vph)	0	0	317	0	0	68	0	0	78	0	0	180
Lane Group Flow (vph)	342	746	231	106	1057	38	629	710	37	108	524	38
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.5	63.1	63.1	9.5	53.1	53.1	30.8	48.3	48.3	8.4	25.9	25.9
Effective Green, g (s)	19.5	63.1	63.1	9.5	53.1	53.1	30.8	48.3	48.3	8.4	25.9	25.9
Actuated g/C Ratio	0.13	0.42	0.42	0.06	0.35	0.35	0.21	0.32	0.32	0.06	0.17	0.17
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	446	2139	1172	217	1800	560	704	1637	509	192	878	481
v/s Ratio Prot	c0.10	0.15		0.03	c0.21		c0.18	0.14		0.03	c0.10	
v/s Ratio Perm			0.08			0.02			0.02			0.01
v/c Ratio	0.77	0.35	0.20	0.49	0.59	0.07	0.89	0.43	0.07	0.56	0.60	0.08
Uniform Delay, d1	63.1	29.5	27.4	67.9	39.5	32.1	58.0	40.1	35.3	69.0	57.2	52.0
Progression 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
Incremental Delay, d2	7.4	0.4	0.4	1.3	0.8	0.1	13.7	0.2	0.1	3.0	1.4	0.1
Delay (s)	70.4	30.0	27.8	69.2	40.3	32.2	71.7	40.3	35.4	72.0	58.7	52.2
Level of Service	E	C	C	E	D	C	E	D	D	E	E	D
Approach Delay (s)		37.7			42.0			53.5			58.7	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



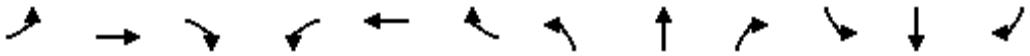
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	72	73	18	120	283	88	864	24	164	773	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1722		1770	1863	1583	1770	5065		1770	4951	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1722		1770	1863	1583	1770	5065		1770	4951	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	236	82	83	20	136	322	100	982	27	186	878	188
RTOR Reduction (vph)	0	29	0	0	0	212	0	2	0	0	28	0
Lane Group Flow (vph)	236	136	0	20	136	110	100	1007	0	186	1038	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	19.6	53.9		2.2	37.0	37.0	9.5	28.6		15.8	35.0	
Effective Green, g (s)	19.6	53.9		2.2	37.0	37.0	9.5	28.6		15.8	35.0	
Actuated g/C Ratio	0.16	0.45		0.02	0.31	0.31	0.08	0.24		0.13	0.29	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	289	773		32	574	488	140	1207		233	1444	
v/s Ratio Prot	c0.13	0.08		0.01	c0.07		0.06	c0.20		c0.11	0.21	
v/s Ratio Perm						0.07						
v/c Ratio	0.82	0.18		0.62	0.24	0.22	0.71	0.83		0.80	0.72	
Uniform Delay, d1	48.5	19.8		58.5	31.0	30.8	53.9	43.4		50.6	38.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.1	0.5		24.3	0.4	0.5	13.4	5.7		16.6	2.2	
Delay (s)	64.6	20.3		82.8	31.4	31.3	67.3	49.1		67.2	40.3	
Level of Service	E	C		F	C	C	E	D		E	D	
Approach Delay (s)		46.4			33.5			50.8			44.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



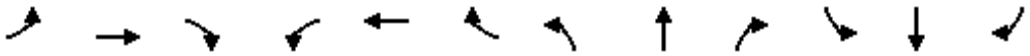
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	169	79	49	115	503	90	408	43	457	344	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3370		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3370		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	184	86	53	125	547	98	443	47	497	374	49
RTOR Reduction (vph)	0	48	0	0	0	316	0	0	36	0	0	32
Lane Group Flow (vph)	60	222	0	53	125	231	98	443	11	497	374	17
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	5.0	25.1		2.1	21.9	21.9	7.3	18.5	18.5	16.3	27.5	27.5
Effective Green, g (s)	5.0	25.1		2.1	21.9	21.9	7.3	18.5	18.5	16.3	27.5	27.5
Actuated g/C Ratio	0.06	0.31		0.03	0.27	0.27	0.09	0.23	0.23	0.20	0.34	0.34
Clearance Time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	108	1039		88	952	425	158	1155	359	687	1717	534
v/s Ratio Prot	c0.03	c0.07		0.02	0.04		0.06	c0.09		c0.14	0.07	
v/s Ratio Perm						c0.15			0.01			0.01
v/c Ratio	0.56	0.21		0.60	0.13	0.54	0.62	0.38	0.03	0.72	0.22	0.03
Uniform Delay, d1	37.1	20.8		39.2	22.5	25.5	35.7	26.6	24.5	30.4	19.3	18.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.0		7.7	0.2	2.9	5.3	0.5	0.1	3.2	0.1	0.1
Delay (s)	40.6	20.9		47.0	22.7	28.3	41.1	27.1	24.5	33.6	19.4	18.1
Level of Service	D	C		D	C	C	D	C	C	C	B	B
Approach Delay (s)		24.5			28.7			29.2			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	19.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



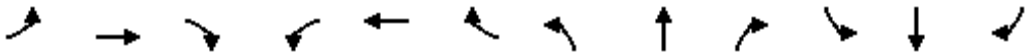
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	
Volume (vph)	0	813	80	0	506	78	0	0	0	128	0	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.86	
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1517	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1517	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	934	92	0	582	90	0	0	0	147	0	205
RTOR Reduction (vph)	0	0	62	0	0	55	0	0	0	0	178	0
Lane Group Flow (vph)	0	934	30	0	582	35	0	0	0	132	42	0
Turn Type		NA	Perm		NA	Perm				Perm	NA	
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		36.7	36.7		43.8	43.8				14.8	14.8	
Effective Green, g (s)		36.7	36.7		43.8	43.8				14.8	14.8	
Actuated g/C Ratio		0.33	0.33		0.39	0.39				0.13	0.13	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Vehicle Extension (s)		5.0	5.0		5.0	5.0				3.2	3.2	
Lane Grp Cap (vph)		1660	516		1981	616				221	199	
v/s Ratio Prot		c0.18			c0.11							
v/s Ratio Perm			0.02			0.02				c0.08	0.03	
v/c Ratio		0.56	0.06		0.29	0.06				0.60	0.21	
Uniform Delay, d1		31.2	26.0		23.6	21.4				46.0	43.6	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		0.7	0.1		0.4	0.2				4.4	0.6	
Delay (s)		32.0	26.1		24.0	21.6				50.4	44.2	
Level of Service		C	C		C	C				D	D	
Approach Delay (s)		31.4			23.7			0.0			46.5	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	17.1
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	669	272	0	557	179	27	0	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.92				
Flt Protected		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (prot)		5085	1583		5085	1583		3182				
Flt Permitted		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (perm)		5085	1583		5085	1583		3182				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	727	296	0	605	195	29	0	33	0	0	0
RTOR Reduction (vph)	0	0	39	0	0	26	0	32	0	0	0	0
Lane Group Flow (vph)	0	727	257	0	605	169	0	30	0	0	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		111.1	111.1		111.1	111.1		5.8				
Effective Green, g (s)		111.1	111.1		111.1	111.1		5.8				
Actuated g/C Ratio		0.87	0.87		0.87	0.87		0.05				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		4406	1371		4406	1371		143				
v/s Ratio Prot		0.14			0.12							
v/s Ratio Perm			c0.16			0.11		0.01				
v/c Ratio		0.17	0.19		0.14	0.12		0.21				
Uniform Delay, d1		1.3	1.4		1.3	1.3		59.0				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.3		0.1	0.2		0.8				
Delay (s)		1.4	1.7		1.4	1.5		59.8				
Level of Service		A	A		A	A		E				
Approach Delay (s)		1.5			1.4			59.8			0.0	
Approach LOS		A			A			E			A	

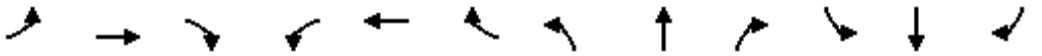
Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	128.2	Sum of lost time (s)	11.3
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	536	0	0	0	462	0	0
Peak Hour Factor	0.92	0.92	0.92	0.58	0.92	0.58	0.92	0.58	0.58	0.58	0.58	0.92
Hourly flow rate (vph)	0	0	0	0	0	924	0	0	0	797	0	0

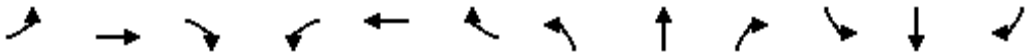
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	924	0	797
Volume Left (vph)	0	0	0	797
Volume Right (vph)	0	924	0	0
Hadj (s)	0.00	-0.57	0.00	0.23
Departure Headway (s)	7.0	5.2	7.0	6.0
Degree Utilization, x	0.00	1.0	0.00	1.0
Capacity (veh/h)	521	681	521	593
Control Delay (s)	10.0	178.2	10.0	178.0
Approach Delay (s)	0.0	178.2	0.0	178.0
Approach LOS	A	F	A	F

Intersection Summary			
Delay	178.1		
Level of Service	F		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		



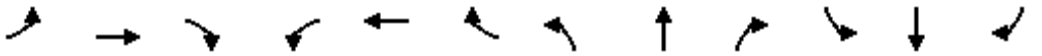
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	650	387	297	517	0	0	0	0	410	1	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	747	445	341	594	0	0	0	0	471	1	443
RTOR Reduction (vph)	0	0	326	0	0	0	0	0	0	0	0	141
Lane Group Flow (vph)	0	747	119	341	594	0	0	0	0	235	237	302
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		23.7	23.7	13.9	41.6					39.3	39.3	39.3
Effective Green, g (s)		23.7	23.7	13.9	41.6					39.3	39.3	39.3
Actuated g/C Ratio		0.27	0.27	0.16	0.47					0.44	0.44	0.44
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1355	422	536	1656					743	745	699
v/s Ratio Prot		c0.15		c0.10	0.17							
v/s Ratio Perm			0.07							0.14	0.14	c0.19
v/c Ratio		0.55	0.28	0.64	0.36					0.32	0.32	0.43
Uniform Delay, d1		28.0	25.8	35.1	15.1					16.1	16.1	17.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.4	2.5	0.1					1.1	1.1	1.9
Delay (s)		28.5	26.2	37.6	15.3					17.2	17.2	19.0
Level of Service		C	C	D	B					B	B	B
Approach Delay (s)		27.7			23.4			0.0			18.1	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



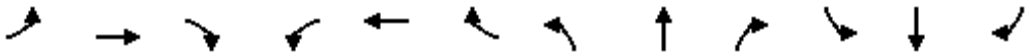
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	355	692	0	0	549	344	281	1	303	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1774	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1774	2787			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	399	778	0	0	617	387	316	1	340	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	293	0	0	245	0	0	0
Lane Group Flow (vph)	399	778	0	0	617	94	0	317	95	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	22.1	43.4			17.3	17.3		19.9	19.9			
Effective Green, g (s)	22.1	43.4			17.3	17.3		19.9	19.9			
Actuated g/C Ratio	0.31	0.61			0.24	0.24		0.28	0.28			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	548	2154			1233	676		495	777			
v/s Ratio Prot	c0.23	0.22			c0.12							
v/s Ratio Perm						0.03		0.18	0.03			
v/c Ratio	0.73	0.36			0.50	0.14		0.64	0.12			
Uniform Delay, d1	21.9	7.0			23.3	21.2		22.6	19.2			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	4.8	0.1			0.3	0.1		2.8	0.1			
Delay (s)	26.7	7.1			23.6	21.3		25.4	19.3			
Level of Service	C	A			C	C		C	B			
Approach Delay (s)		13.8			22.7			22.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



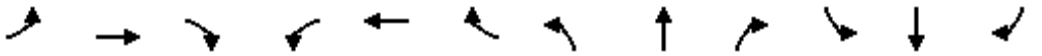
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	932	361	683	802	0	0	0	0	1241	1	798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1685	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1685	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	951	368	697	818	0	0	0	0	1266	1	814
RTOR Reduction (vph)	0	0	243	0	0	0	0	0	0	0	0	70
Lane Group Flow (vph)	0	951	125	697	818	0	0	0	0	633	634	744
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		32.3	32.3	23.2	59.3					50.8	50.8	50.8
Effective Green, g (s)		32.3	32.3	23.2	59.3					50.8	50.8	50.8
Actuated g/C Ratio		0.27	0.27	0.19	0.49					0.42	0.42	0.42
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		952	426	663	1748					711	713	670
v/s Ratio Prot		c0.27		c0.20	0.23							
v/s Ratio Perm			0.08							0.38	0.38	c0.47
v/c Ratio		1.00	0.29	1.05	0.47					0.89	0.89	1.11
Uniform Delay, d1		43.8	34.8	48.4	20.0					32.0	32.0	34.6
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		28.7	0.4	49.2	0.2					13.3	13.0	68.9
Delay (s)		72.5	35.2	97.6	20.2					45.4	45.0	103.5
Level of Service		E	D	F	C					D	D	F
Approach Delay (s)		62.1			55.8			0.0			68.0	
Approach LOS		E			E			A			E	

Intersection Summary			
HCM 2000 Control Delay	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	141.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



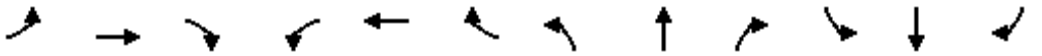
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	405	1790	0	0	1211	631	262	2	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3360	1441	1681	1453	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3360	1441	1681	1453	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	413	1827	0	0	1236	644	267	2	850	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	291	0	12	41	0	0	0
Lane Group Flow (vph)	413	1827	0	0	1310	276	240	425	401	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	15.9	71.7			51.6	51.6	36.5	36.5	36.5			
Effective Green, g (s)	15.9	71.7			51.6	51.6	36.5	36.5	36.5			
Actuated g/C Ratio	0.13	0.61			0.44	0.44	0.31	0.31	0.31			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	462	2148			1468	629	519	449	464			
v/s Ratio Prot	0.12	c0.52			c0.39							
v/s Ratio Perm						0.19	0.14	0.29	0.27			
v/c Ratio	0.89	0.85			0.89	0.44	0.46	0.95	0.86			
Uniform Delay, d1	50.3	18.8			30.7	23.2	32.9	39.8	38.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	19.3	3.4			7.3	0.5	0.7	28.9	15.4			
Delay (s)	69.5	22.3			37.9	23.7	33.5	68.7	53.8			
Level of Service	E	C			D	C	C	E	D			
Approach Delay (s)		31.0			33.6			55.3			0.0	
Approach LOS		C			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	14.1
Intersection Capacity Utilization	141.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



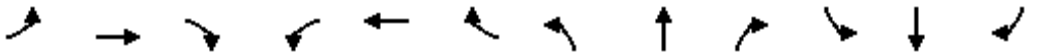
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	2008	45	270	1309	105	29	207	497	61	193	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	292	2092	47	281	1364	109	30	216	518	64	201	277
RTOR Reduction (vph)	0	1	0	0	0	54	0	0	325	0	0	219
Lane Group Flow (vph)	292	2138	0	281	1364	55	30	216	193	64	201	58
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	32.7	64.7		30.9	62.5	62.5	4.8	27.5	27.5	8.7	31.4	31.4
Effective Green, g (s)	32.7	64.7		30.9	62.5	62.5	4.8	27.5	27.5	8.7	31.4	31.4
Actuated g/C Ratio	0.22	0.43		0.21	0.42	0.42	0.03	0.18	0.18	0.06	0.21	0.21
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	384	2180		363	2113	657	56	340	289	102	388	330
v/s Ratio Prot	c0.17	c0.42		0.16	0.27		0.02	0.12		c0.04	0.11	
v/s Ratio Perm						0.03			c0.12			0.04
v/c Ratio	0.76	0.98		0.77	0.65	0.08	0.54	0.64	0.67	0.63	0.52	0.18
Uniform Delay, d1	55.2	42.2		56.5	35.1	26.6	71.7	56.8	57.2	69.3	52.8	48.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	15.2		9.6	1.0	0.1	4.9	3.9	5.7	8.4	1.2	0.3
Delay (s)	63.4	57.5		66.0	36.1	26.7	76.6	60.7	62.9	77.6	54.0	49.1
Level of Service	E	E		E	D	C	E	E	E	E	D	D
Approach Delay (s)		58.2			40.3			62.8			54.3	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



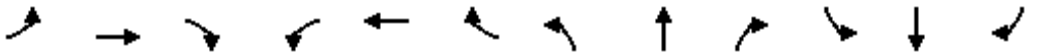
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	2151	90	3	1383	314	53	23	4	372	37	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	2241	94	3	1441	327	55	24	4	388	39	275
RTOR Reduction (vph)	0	0	31	0	0	91	0	0	4	0	0	236
Lane Group Flow (vph)	333	2241	63	3	1441	236	55	24	0	388	39	39
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.2	68.4	68.4	0.9	54.1	54.1	6.8	4.6	4.6	18.1	15.9	15.9
Effective Green, g (s)	15.2	68.4	68.4	0.9	54.1	54.1	6.8	4.6	4.6	18.1	15.9	15.9
Actuated g/C Ratio	0.14	0.61	0.61	0.01	0.48	0.48	0.06	0.04	0.04	0.16	0.14	0.14
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	5.2	2.0	3.5	3.5	2.0	3.5	3.5
Lane Grp Cap (vph)	465	3099	965	14	2451	1343	107	76	64	553	264	224
v/s Ratio Prot	c0.10	c0.44		0.00	0.28		0.03	c0.01		c0.11	0.02	
v/s Ratio Perm			0.04			0.08			0.00			0.02
v/c Ratio	0.72	0.72	0.07	0.21	0.59	0.18	0.51	0.32	0.00	0.70	0.15	0.17
Uniform Delay, d1	46.4	15.3	8.9	55.3	21.0	16.4	51.1	52.3	51.6	44.5	42.2	42.4
Progression 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
Incremental Delay, d2	4.3	1.1	0.1	2.8	0.6	0.1	1.7	2.8	0.0	3.3	0.3	0.4
Delay (s)	50.8	16.4	9.0	58.1	21.6	16.6	52.8	55.1	51.6	47.8	42.5	42.8
Level of Service	D	B	A	E	C	B	D	E	D	D	D	D
Approach Delay (s)		20.4			20.7			53.4			45.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	20.2
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



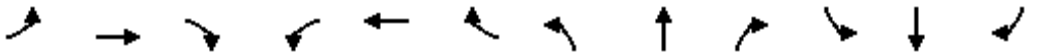
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	1433	458	44	957	99	323	275	46	140	322	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	256	1493	477	46	997	103	336	286	48	146	335	202
RTOR Reduction (vph)	0	0	116	0	0	43	0	0	39	0	0	174
Lane Group Flow (vph)	256	1493	361	46	997	60	336	286	9	146	335	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.9	62.9	62.9	5.6	53.6	53.6	17.8	24.3	24.3	10.8	17.3	17.3
Effective Green, g (s)	14.9	62.9	62.9	5.6	53.6	53.6	17.8	24.3	24.3	10.8	17.3	17.3
Actuated g/C Ratio	0.12	0.51	0.51	0.05	0.43	0.43	0.14	0.20	0.20	0.09	0.14	0.14
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	411	2573	1410	154	2192	682	491	994	309	298	707	387
v/s Ratio Prot	c0.07	c0.29		0.01	0.20		c0.10	0.06		0.04	c0.07	
v/s Ratio Perm			0.13			0.04			0.01			0.01
v/c Ratio	0.62	0.58	0.26	0.30	0.45	0.09	0.68	0.29	0.03	0.49	0.47	0.07
Uniform Delay, d1	52.0	21.5	17.4	57.4	25.0	20.9	50.6	42.6	40.5	54.1	49.3	46.5
Progression 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
Incremental Delay, d2	2.5	0.5	0.2	0.8	0.3	0.1	3.6	0.2	0.0	0.9	0.8	0.1
Delay (s)	54.6	22.0	17.6	58.2	25.3	21.0	54.2	42.8	40.5	55.0	50.1	46.7
Level of Service	D	C	B	E	C	C	D	D	D	E	D	D
Approach Delay (s)		24.8			26.3			48.3			50.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	124.3	Sum of lost time (s)	20.7
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



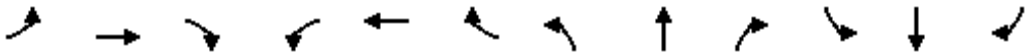
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	104	106	5	42	131	38	489	3	127	672	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1721		1770	1863	1583	1770	5081		1770	5034	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1721		1770	1863	1583	1770	5081		1770	5034	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	109	112	5	44	138	40	515	3	134	707	51
RTOR Reduction (vph)	0	23	0	0	0	111	0	0	0	0	4	0
Lane Group Flow (vph)	29	198	0	5	44	27	40	518	0	134	754	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	2.6	14.2		0.8	12.9	12.9	3.9	19.7		11.0	26.9	
Effective Green, g (s)	2.6	14.2		0.8	12.9	12.9	3.9	19.7		11.0	26.9	
Actuated g/C Ratio	0.04	0.22		0.01	0.20	0.20	0.06	0.30		0.17	0.41	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	70	374		21	368	313	105	1535		298	2076	
v/s Ratio Prot	c0.02	c0.12		0.00	0.02		0.02	0.10		c0.08	c0.15	
v/s Ratio Perm						0.02						
v/c Ratio	0.41	0.53		0.24	0.12	0.09	0.38	0.34		0.45	0.36	
Uniform Delay, d1	30.6	22.6		31.9	21.5	21.3	29.5	17.7		24.4	13.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	0.7		2.1	0.3	0.3	0.8	0.3		0.8	0.2	
Delay (s)	34.5	23.3		34.0	21.8	21.6	30.3	18.0		25.2	13.5	
Level of Service	C	C		C	C	C	C	B		C	B	
Approach Delay (s)		24.6			22.0			18.8			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



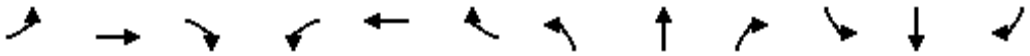
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	89	17	1	123	361	20	128	5	600	144	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3454		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3454		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	43	100	19	1	138	406	22	144	6	674	162	35
RTOR Reduction (vph)	0	9	0	0	0	324	0	0	5	0	0	18
Lane Group Flow (vph)	43	110	0	1	138	82	22	144	1	674	162	17
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	4.1	20.0		0.8	16.4	16.4	2.4	13.2	13.2	28.1	38.9	38.9
Effective Green, g (s)	4.1	20.0		0.8	16.4	16.4	2.4	13.2	13.2	28.1	38.9	38.9
Actuated g/C Ratio	0.05	0.25		0.01	0.20	0.20	0.03	0.16	0.16	0.34	0.48	0.48
Clearance Time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	89	847		33	712	318	52	823	256	1183	2427	755
v/s Ratio Prot	c0.02	c0.03		0.00	0.04		0.01	c0.03		c0.20	0.03	
v/s Ratio Perm						c0.05			0.00			0.01
v/c Ratio	0.48	0.13		0.03	0.19	0.26	0.42	0.17	0.00	0.57	0.07	0.02
Uniform Delay, d1	37.7	24.0		40.0	27.1	27.4	38.9	29.5	28.6	21.8	11.5	11.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.0		0.1	0.3	1.1	2.0	0.2	0.0	0.4	0.0	0.0
Delay (s)	39.2	24.0		40.1	27.4	28.5	40.9	29.7	28.7	22.1	11.5	11.3
Level of Service	D	C		D	C	C	D	C	C	C	B	B
Approach Delay (s)		28.0			28.2			31.1			19.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	19.7
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



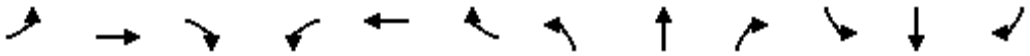
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	
Volume (vph)	0	736	7	0	609	25	0	0	0	176	1	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.88	
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1545	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1545	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	783	7	0	648	27	0	0	0	187	1	114
RTOR Reduction (vph)	0	0	5	0	0	15	0	0	0	0	97	0
Lane Group Flow (vph)	0	783	2	0	648	12	0	0	0	157	48	0
Turn Type		NA	Perm		NA	Perm				Perm	NA	
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		29.6	29.6		50.5	50.5				16.3	16.3	
Effective Green, g (s)		29.6	29.6		50.5	50.5				16.3	16.3	
Actuated g/C Ratio		0.26	0.26		0.44	0.44				0.14	0.14	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Vehicle Extension (s)		5.0	5.0		5.0	5.0				3.2	3.2	
Lane Grp Cap (vph)		1326	412		2262	704				241	221	
v/s Ratio Prot		c0.15			c0.13							
v/s Ratio Perm			0.00			0.01				c0.09	0.03	
v/c Ratio		0.59	0.00		0.29	0.02				0.65	0.22	
Uniform Delay, d1		36.7	31.0		20.0	17.6				45.9	43.0	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.3	0.0				6.3	0.5	
Delay (s)		37.7	31.1		20.4	17.7				52.2	43.5	
Level of Service		D	C		C	B				D	D	
Approach Delay (s)		37.7			20.3			0.0			48.0	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	113.5	Sum of lost time (s)	17.1
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	840	69	0	603	100	29	0	97	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.88				
Flt Protected		1.00	1.00		1.00	1.00		0.99				
Satd. Flow (prot)		5085	1583		5085	1583		3095				
Flt Permitted		1.00	1.00		1.00	1.00		0.99				
Satd. Flow (perm)		5085	1583		5085	1583		3095				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	903	74	0	648	108	31	0	104	0	0	0
RTOR Reduction (vph)	0	0	18	0	0	26	0	94	0	0	0	0
Lane Group Flow (vph)	0	903	56	0	648	82	0	41	0	0	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		55.7	55.7		55.7	55.7		6.8				
Effective Green, g (s)		55.7	55.7		55.7	55.7		6.8				
Actuated g/C Ratio		0.75	0.75		0.75	0.75		0.09				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		3837	1194		3837	1194		285				
v/s Ratio Prot		c0.18			0.13							
v/s Ratio Perm			0.04			0.05		0.01				
v/c Ratio		0.24	0.05		0.17	0.07		0.14				
Uniform Delay, d1		2.7	2.3		2.5	2.3		30.8				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.1		0.1	0.1		0.2				
Delay (s)		2.8	2.4		2.6	2.5		31.1				
Level of Service		A	A		A	A		C				
Approach Delay (s)		2.8			2.6			31.1			0.0	
Approach LOS		A			A			C			A	

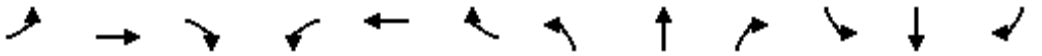
Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	11.3
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	153	0	0	0	161	0	0
Peak Hour Factor	0.92	0.92	0.92	0.72	0.92	0.72	0.92	0.72	0.72	0.72	0.72	0.92
Hourly flow rate (vph)	0	0	0	0	0	212	0	0	0	224	0	0

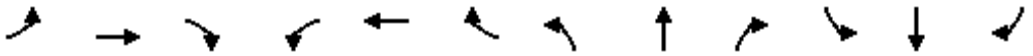
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	213	0	224
Volume Left (vph)	0	0	0	224
Volume Right (vph)	0	213	0	0
Hadj (s)	0.00	-0.57	0.00	0.23
Departure Headway (s)	4.7	3.9	4.6	4.6
Degree Utilization, x	0.00	0.23	0.00	0.28
Capacity (veh/h)	735	873	746	749
Control Delay (s)	7.7	8.0	7.6	9.4
Approach Delay (s)	0.0	8.0	0.0	9.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	25.1%	ICU Level of Service	A	
Analysis Period (min)	15			



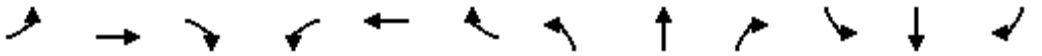
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	804	532	524	813	0	0	0	0	394	5	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	855	566	557	865	0	0	0	0	419	5	465
RTOR Reduction (vph)	0	0	388	0	0	0	0	0	0	0	0	90
Lane Group Flow (vph)	0	855	178	557	865	0	0	0	0	214	210	375
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		25.6	25.6	17.8	47.4					26.1	26.1	26.1
Effective Green, g (s)		25.6	25.6	17.8	47.4					26.1	26.1	26.1
Actuated g/C Ratio		0.31	0.31	0.22	0.58					0.32	0.32	0.32
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1597	497	749	2058					538	540	506
v/s Ratio Prot		c0.17		c0.16	0.24							
v/s Ratio Perm			0.11							0.13	0.12	c0.24
v/c Ratio		0.54	0.36	0.74	0.42					0.40	0.39	0.74
Uniform Delay, d1		23.0	21.6	29.7	9.4					21.6	21.5	24.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.4	4.0	0.1					0.5	0.5	5.8
Delay (s)		23.4	22.0	33.7	9.6					22.1	22.0	30.5
Level of Service		C	C	C	A					C	C	C
Approach Delay (s)		22.9			19.0			0.0			26.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



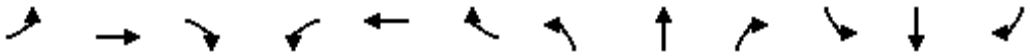
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	426	771	0	0	931	609	406	1	508	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1774	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1774	2787			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	444	803	0	0	970	634	423	1	529	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	467	0	0	224	0	0	0
Lane Group Flow (vph)	444	803	0	0	970	167	0	424	305	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	26.3	53.6			23.3	23.3		27.1	27.1			
Effective Green, g (s)	26.3	53.6			23.3	23.3		27.1	27.1			
Actuated g/C Ratio	0.30	0.60			0.26	0.26		0.31	0.31			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	524	2138			1335	732		542	851			
v/s Ratio Prot	c0.25	0.23			c0.19							
v/s Ratio Perm						0.06		0.24	0.11			
v/c Ratio	0.85	0.38			0.73	0.23		0.78	0.36			
Uniform Delay, d1	29.3	9.0			29.8	25.6		28.1	24.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	12.1	0.1			2.0	0.2		7.2	0.3			
Delay (s)	41.4	9.1			31.8	25.8		35.4	24.3			
Level of Service	D	A			C	C		D	C			
Approach Delay (s)		20.6			29.4			29.2			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



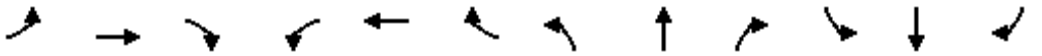
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	991	352	907	717	0	0	0	0	567	5	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1077	383	986	779	0	0	0	0	616	5	397
RTOR Reduction (vph)	0	0	218	0	0	0	0	0	0	0	0	201
Lane Group Flow (vph)	0	1077	165	986	779	0	0	0	0	308	313	196
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		43.9	43.9	37.1	84.8					25.3	25.3	25.3
Effective Green, g (s)		43.9	43.9	37.1	84.8					25.3	25.3	25.3
Actuated g/C Ratio		0.37	0.37	0.31	0.71					0.21	0.21	0.21
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1295	579	1061	2501					354	356	334
v/s Ratio Prot		c0.30		c0.29	0.22							
v/s Ratio Perm			0.10							0.18	0.19	0.12
v/c Ratio		0.83	0.29	0.93	0.31					0.87	0.88	0.59
Uniform Delay, d1		34.7	26.9	40.2	6.6					45.8	45.9	42.6
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		6.3	1.2	13.6	0.1					20.1	21.0	2.6
Delay (s)		41.0	28.2	53.8	6.7					65.8	66.9	45.3
Level of Service		D	C	D	A					E	E	D
Approach Delay (s)		37.7			33.0			0.0			58.1	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



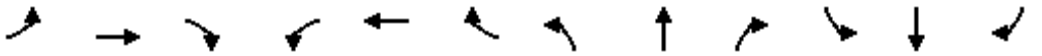
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	521	1016	0	0	1429	1197	195	2	799	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.97	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3280	1441	1681	1451	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3280	1441	1681	1451	1504			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	560	1092	0	0	1537	1287	210	2	859	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	293	0	116	116	0	0	0
Lane Group Flow (vph)	560	1092	0	0	1942	569	189	328	322	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	17.8	85.7			63.7	63.7	24.4	24.4	24.4			
Effective Green, g (s)	17.8	85.7			63.7	63.7	24.4	24.4	24.4			
Actuated g/C Ratio	0.15	0.71			0.53	0.53	0.20	0.20	0.20			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	509	2527			1741	765	342	295	306			
v/s Ratio Prot	c0.16	0.31			c0.59							
v/s Ratio Perm						0.39	0.11	0.23	0.21			
v/c Ratio	1.10	0.43			1.12	0.74	0.55	1.11	1.05			
Uniform Delay, d1	51.1	7.1			28.1	21.8	42.9	47.8	47.8			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	70.1	0.1			60.6	3.9	1.9	85.5	65.5			
Delay (s)	121.2	7.2			88.7	25.7	44.8	133.3	113.3			
Level of Service	F	A			F	C	D	F	F			
Approach Delay (s)		45.8			69.5			109.5			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM Average Control Delay	70.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



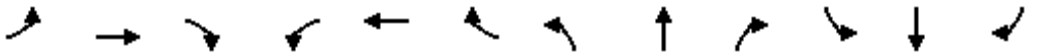
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	141	1542	23	348	1974	200	36	122	402	153	211	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	147	1606	24	362	2056	208	38	127	419	159	220	280
RTOR Reduction (vph)	0	1	0	0	0	63	0	0	327	0	0	196
Lane Group Flow (vph)	147	1629	0	362	2056	145	38	127	92	159	220	84
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	16.3	63.6		34.6	81.5	81.5	6.2	18.2	18.2	15.0	27.0	27.0
Effective Green, g (s)	16.3	63.6		34.6	81.5	81.5	6.2	18.2	18.2	15.0	27.0	27.0
Actuated g/C Ratio	0.11	0.42		0.23	0.54	0.54	0.04	0.12	0.12	0.10	0.18	0.18
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	192	2151		408	2763	860	73	226	192	177	335	285
v/s Ratio Prot	0.08	0.32		c0.20	c0.40		0.02	0.07		c0.09	c0.12	
v/s Ratio Perm						0.09			0.06			0.05
v/c Ratio	0.77	0.76		0.89	0.74	0.17	0.52	0.56	0.48	0.90	0.66	0.29
Uniform Delay, d1	65.0	36.7		55.8	26.3	17.2	70.4	62.1	61.5	66.7	57.2	53.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.9	2.6		20.0	1.4	0.2	3.1	3.2	1.9	38.9	4.6	0.6
Delay (s)	80.9	39.2		75.8	27.7	17.4	73.5	65.3	63.4	105.7	61.8	53.8
Level of Service	F	D		E	C	B	E	E	E	F	E	D
Approach Delay (s)		42.6			33.5			64.5			69.0	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



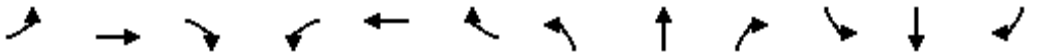
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1742	122	9	2053	508	211	148	17	457	142	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1893	133	10	2232	552	229	161	18	497	154	326
RTOR Reduction (vph)	0	0	45	0	0	164	0	0	15	0	0	92
Lane Group Flow (vph)	268	1893	88	10	2232	388	229	161	3	497	154	234
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	74.1	74.1	1.5	64.6	64.6	20.0	25.2	25.2	20.1	25.3	25.3
Effective Green, g (s)	11.0	74.1	74.1	1.5	64.6	64.6	20.0	25.2	25.2	20.1	25.3	25.3
Actuated g/C Ratio	0.08	0.53	0.53	0.01	0.46	0.46	0.14	0.18	0.18	0.14	0.18	0.18
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	5.2	2.0	3.5	3.5	2.0	3.5	3.5
Lane Grp Cap (vph)	268	2670	831	19	2328	1276	251	333	283	489	334	284
v/s Ratio Prot	c0.08	0.37		0.01	c0.44		0.13	0.09		c0.14	0.08	
v/s Ratio Perm			0.06			0.14			0.00			c0.15
v/c Ratio	1.00	0.71	0.11	0.53	0.96	0.30	0.91	0.48	0.01	1.02	0.46	0.82
Uniform Delay, d1	65.0	25.3	16.8	69.4	37.0	24.1	59.7	52.1	47.7	60.5	51.8	55.8
Progression 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
Incremental Delay, d2	55.0	1.1	0.1	11.6	10.8	0.3	33.7	1.3	0.0	44.9	1.2	17.8
Delay (s)	120.0	26.5	17.0	81.0	47.8	24.4	93.4	53.4	47.7	105.4	53.0	73.5
Level of Service	F	C	B	F	D	C	F	D	D	F	D	E
Approach Delay (s)		36.9			43.3			75.6			86.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	49.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	141.1	Sum of lost time (s)	15.2
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



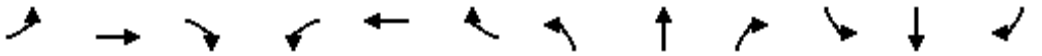
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	318	694	541	107	983	99	669	673	157	100	492	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	342	746	582	115	1057	106	719	724	169	108	529	218
RTOR Reduction (vph)	0	0	379	0	0	69	0	0	107	0	0	177
Lane Group Flow (vph)	342	746	203	115	1057	37	719	724	62	108	529	41
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	16.7	45.7	45.7	8.4	37.4	37.4	31.6	47.6	47.6	8.3	24.3	24.3
Effective Green, g (s)	16.7	45.7	45.7	8.4	37.4	37.4	31.6	47.6	47.6	8.3	24.3	24.3
Actuated g/C Ratio	0.13	0.35	0.35	0.06	0.29	0.29	0.24	0.36	0.36	0.06	0.19	0.19
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	439	1778	974	221	1455	453	830	1852	577	218	945	518
v/s Ratio Prot	c0.10	0.15		0.03	c0.21		c0.21	0.14		0.03	c0.10	
v/s Ratio Perm			0.07			0.02			0.04			0.01
v/c Ratio	0.78	0.42	0.21	0.52	0.73	0.08	0.87	0.39	0.11	0.50	0.56	0.08
Uniform Delay, d1	55.2	32.4	29.8	59.2	42.0	34.1	47.5	30.8	27.5	59.2	48.3	43.9
Progression 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
Incremental Delay, d2	8.2	0.4	0.2	1.7	2.3	0.2	9.3	0.2	0.1	1.3	1.0	0.1
Delay (s)	63.4	32.8	30.1	60.9	44.4	34.3	56.9	31.0	27.6	60.5	49.4	44.1
Level of Service	E	C	C	E	D	C	E	C	C	E	D	D
Approach Delay (s)		38.1			45.0			42.2			49.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.7	Sum of lost time (s)	20.7
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



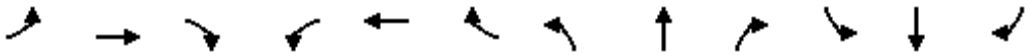
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	72	73	18	120	283	88	1012	24	164	827	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1722		1770	1863	1583	1770	5068		1770	4958	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1722		1770	1863	1583	1770	5068		1770	4958	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	236	82	83	20	136	322	100	1150	27	186	940	188
RTOR Reduction (vph)	0	29	0	0	0	193	0	2	0	0	25	0
Lane Group Flow (vph)	236	136	0	20	136	129	100	1175	0	186	1103	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	18.8	50.6		2.2	34.5	34.5	9.3	32.3		15.4	38.5	
Effective Green, g (s)	18.8	50.6		2.2	34.5	34.5	9.3	32.3		15.4	38.5	
Actuated g/C Ratio	0.16	0.42		0.02	0.29	0.29	0.08	0.27		0.13	0.32	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	277	726		32	536	455	137	1364		227	1591	
v/s Ratio Prot	c0.13	0.08		0.01	0.07		0.06	c0.23		c0.11	0.22	
v/s Ratio Perm						c0.08						
v/c Ratio	0.85	0.19		0.62	0.25	0.28	0.73	0.86		0.82	0.69	
Uniform Delay, d1	49.2	21.8		58.5	32.9	33.2	54.1	41.7		50.9	35.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.09	1.04		1.00	1.00	
Incremental Delay, d2	21.5	0.6		24.3	0.5	0.7	11.3	4.7		19.6	1.7	
Delay (s)	70.7	22.4		82.8	33.4	33.9	70.1	48.2		70.6	37.3	
Level of Service	E	C		F	C	C	E	D		E	D	
Approach Delay (s)		50.8			35.8			49.9			42.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	169	79	56	115	503	90	556	63	457	398	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3369		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3369		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	71	219	103	73	149	653	117	722	82	594	517	58
RTOR Reduction (vph)	0	47	0	0	0	324	0	0	65	0	0	40
Lane Group Flow (vph)	71	275	0	73	149	329	117	722	17	594	517	18
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	6.8	46.1		5.0	44.0	44.0	11.9	25.4	25.4	24.1	37.6	37.6
Effective Green, g (s)	6.8	46.1		5.0	44.0	44.0	11.9	25.4	25.4	24.1	37.6	37.6
Actuated g/C Ratio	0.06	0.38		0.04	0.37	0.37	0.10	0.21	0.21	0.20	0.31	0.31
Clearance Time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	100	1294		143	1298	580	176	1076	335	689	1593	496
v/s Ratio Prot	c0.04	0.08		0.02	0.04		0.07	c0.14		c0.17	0.10	
v/s Ratio Perm						c0.21			0.01			0.01
v/c Ratio	0.71	0.21		0.51	0.11	0.57	0.66	0.67	0.05	0.86	0.32	0.04
Uniform Delay, d1	55.6	24.8		56.3	25.1	30.4	52.1	43.5	37.7	46.3	31.5	28.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.60	4.09
Incremental Delay, d2	17.1	0.4		1.3	0.1	2.4	7.1	2.3	0.1	8.8	0.2	0.1
Delay (s)	72.8	25.2		57.6	25.2	32.7	59.3	45.7	37.9	52.3	50.5	117.1
Level of Service	E	C		E	C	C	E	D	D	D	D	F
Approach Delay (s)		33.8			33.5			46.8			54.7	
Approach LOS		C			C			D			D	

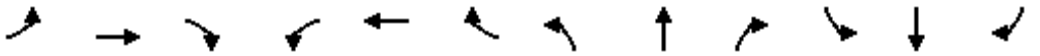
Intersection Summary			
HCM Average Control Delay	44.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	823	90	0	510	78	0	0	0	128	15	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.87	
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1535	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1535	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	946	103	0	586	90	0	0	0	147	17	209
RTOR Reduction (vph)	0	0	69	0	0	56	0	0	0	0	182	0
Lane Group Flow (vph)	0	946	34	0	586	34	0	0	0	132	59	0
Turn Type			Perm			Perm				Perm		
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		37.3	37.3		42.8	42.8				14.7	14.7	
Effective Green, g (s)		37.3	37.3		42.8	42.8				14.7	14.7	
Actuated g/C Ratio		0.33	0.33		0.38	0.38				0.13	0.13	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Vehicle Extension (s)		5.0	5.0		5.0	5.0				3.2	3.2	
Lane Grp Cap (vph)		1695	528		1945	605				221	202	
v/s Ratio Prot		c0.19			c0.12							
v/s Ratio Perm			0.02			0.02				c0.08	0.04	
v/c Ratio		0.56	0.07		0.30	0.06				0.60	0.29	
Uniform Delay, d1		30.6	25.4		24.1	21.8				45.8	43.9	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		0.7	0.1		0.4	0.2				4.4	0.9	
Delay (s)		31.2	25.5		24.5	22.0				50.2	44.8	
Level of Service		C	C		C	C				D	D	
Approach Delay (s)		30.7			24.2			0.0			46.7	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	17.1
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



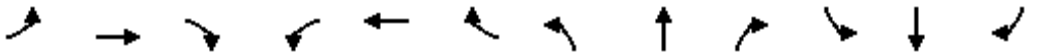
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	669	282	0	557	179	31	4	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.93				
Flt Protected		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (prot)		5085	1583		5085	1583		3215				
Flt Permitted		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (perm)		5085	1583		5085	1583		3215				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	727	307	0	605	195	34	4	33	0	0	0
RTOR Reduction (vph)	0	0	42	0	0	27	0	31	0	0	0	0
Lane Group Flow (vph)	0	727	265	0	605	168	0	40	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		110.3	110.3		110.3	110.3		6.1				
Effective Green, g (s)		110.3	110.3		110.3	110.3		6.1				
Actuated g/C Ratio		0.86	0.86		0.86	0.86		0.05				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		4392	1367		4392	1367		154				
v/s Ratio Prot		0.14			0.12							
v/s Ratio Perm			c0.17			0.11		0.01				
v/c Ratio		0.17	0.19		0.14	0.12		0.26				
Uniform Delay, d1		1.4	1.4		1.3	1.3		58.6				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.3		0.1	0.2		1.0				
Delay (s)		1.5	1.7		1.4	1.5		59.6				
Level of Service		A	A		A	A		E				
Approach Delay (s)		1.5			1.4			59.6			0.0	
Approach LOS		A			A			E			A	

Intersection Summary			
HCM Average Control Delay	3.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	11.3
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



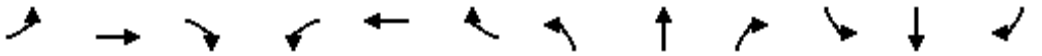
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	536	168	0	462	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1583	1863		1770	1863
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1583	1863		1770	1863
Peak-hour factor, PHF	0.58	0.58	0.58	0.58	0.58	0.58
Adj. Flow (vph)	0	924	290	0	797	105
RTOR Reduction (vph)	0	645	0	0	0	0
Lane Group Flow (vph)	0	279	290	0	797	105
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)		18.1	16.2		40.8	61.0
Effective Green, g (s)		18.1	16.2		40.8	61.0
Actuated g/C Ratio		0.21	0.19		0.47	0.70
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		329	347		829	1305
v/s Ratio Prot			c0.16		c0.45	0.06
v/s Ratio Perm		c0.18				
v/c Ratio		0.85	0.84		0.96	0.08
Uniform Delay, d1		33.2	34.2		22.4	4.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		18.0	15.8		22.2	0.0
Delay (s)		51.2	50.0		44.6	4.2
Level of Service		D	D		D	A
Approach Delay (s)	51.2		50.0			39.9
Approach LOS	D		D			D

Intersection Summary			
HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	650	387	297	517	0	0	0	0	410	1	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	747	445	341	594	0	0	0	0	471	1	443
RTOR Reduction (vph)	0	0	299	0	0	0	0	0	0	0	0	177
Lane Group Flow (vph)	0	747	146	341	594	0	0	0	0	235	237	266
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		21.7	21.7	12.6	38.3					19.7	19.7	19.7
Effective Green, g (s)		21.7	21.7	12.6	38.3					19.7	19.7	19.7
Actuated g/C Ratio		0.33	0.33	0.19	0.58					0.30	0.30	0.30
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1672	520	655	2054					502	503	473
v/s Ratio Prot		c0.15		c0.10	0.17							
v/s Ratio Perm			0.09							0.14	0.14	c0.17
v/c Ratio		0.45	0.28	0.52	0.29					0.47	0.47	0.56
Uniform Delay, d1		17.4	16.4	24.0	7.0					18.9	18.9	19.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.2	0.3	0.7	0.1					0.7	0.7	1.5
Delay (s)		17.6	16.7	24.7	7.1					19.6	19.6	21.0
Level of Service		B	B	C	A					B	B	C
Approach Delay (s)		17.3			13.5			0.0			20.3	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	355	692	0	0	549	344	281	1	303	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1774	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1774	2787			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	399	778	0	0	617	387	316	1	340	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	293	0	0	245	0	0	0
Lane Group Flow (vph)	399	778	0	0	617	94	0	317	95	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	22.1	43.4			17.3	17.3		19.9	19.9			
Effective Green, g (s)	22.1	43.4			17.3	17.3		19.9	19.9			
Actuated g/C Ratio	0.31	0.61			0.24	0.24		0.28	0.28			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	549	2154			1234	676		495	778			
v/s Ratio Prot	c0.23	0.22			c0.12							
v/s Ratio Perm						0.03		0.18	0.03			
v/c Ratio	0.73	0.36			0.50	0.14		0.64	0.12			
Uniform Delay, d1	21.9	7.0			23.3	21.2		22.6	19.2			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	4.8	0.1			0.3	0.1		2.8	0.1			
Delay (s)	26.7	7.1			23.6	21.3		25.4	19.3			
Level of Service	C	A			C	C		C	B			
Approach Delay (s)		13.7			22.7			22.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	991	352	908	718	0	0	0	0	566	5	365
Future Volume (vph)	0	991	352	908	718	0	0	0	0	566	5	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1077	383	987	780	0	0	0	0	615	5	397
RTOR Reduction (vph)	0	0	218	0	0	0	0	0	0	0	0	200
Lane Group Flow (vph)	0	1077	165	987	780	0	0	0	0	307	313	197
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		43.9	43.9	37.1	84.8					25.3	25.3	25.3
Effective Green, g (s)		43.9	43.9	37.1	84.8					25.3	25.3	25.3
Actuated g/C Ratio		0.37	0.37	0.31	0.71					0.21	0.21	0.21
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1294	579	1061	2500					354	355	333
v/s Ratio Prot		c0.30		c0.29	0.22							
v/s Ratio Perm			0.10							0.18	0.19	0.12
v/c Ratio		0.83	0.29	0.93	0.31					0.87	0.88	0.59
Uniform Delay, d1		34.7	26.9	40.2	6.6					45.7	45.9	42.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		6.4	1.2	13.9	0.1					19.4	21.7	2.8
Delay (s)		41.1	28.2	54.1	6.7					65.2	67.6	45.5
Level of Service		D	C	D	A					E	E	D
Approach Delay (s)		37.7			33.2			0.0			58.2	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	521	1015	0	0	1431	1198	195	2	798	0	0	0
Future Volume (vph)	521	1015	0	0	1431	1198	195	2	798	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.97	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3280	1441	1681	1451	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3280	1441	1681	1451	1504			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	560	1091	0	0	1539	1288	210	2	858	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	293	0	116	116	0	0	0
Lane Group Flow (vph)	560	1091	0	0	1944	570	189	327	322	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	17.8	85.7			63.7	63.7	24.4	24.4	24.4			
Effective Green, g (s)	17.8	85.7			63.7	63.7	24.4	24.4	24.4			
Actuated g/C Ratio	0.15	0.71			0.53	0.53	0.20	0.20	0.20			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	509	2527			1741	764	341	295	305			
v/s Ratio Prot	c0.16	0.31			c0.59							
v/s Ratio Perm						0.40	0.11	0.23	0.21			
v/c Ratio	1.10	0.43			1.12	0.75	0.55	1.11	1.05			
Uniform Delay, d1	51.1	7.1			28.1	21.9	42.9	47.8	47.8			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	70.1	0.1			61.1	4.0	2.0	84.4	66.6			
Delay (s)	121.2	7.2			89.2	25.8	44.9	132.2	114.4			
Level of Service	F	A			F	C	D	F	F			
Approach Delay (s)		45.9			69.9			109.5			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1534	23	349	1956	201	36	122	402	153	211	269
Future Volume (vph)	141	1534	23	349	1956	201	36	122	402	153	211	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5074		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	147	1598	24	364	2038	209	38	127	419	159	220	280
RTOR Reduction (vph)	0	1	0	0	0	64	0	0	327	0	0	196
Lane Group Flow (vph)	147	1621	0	364	2038	145	38	127	92	159	220	84
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	16.3	63.4		34.8	81.5	81.5	6.2	18.2	18.2	15.0	27.0	27.0
Effective Green, g (s)	16.3	63.4		34.8	81.5	81.5	6.2	18.2	18.2	15.0	27.0	27.0
Actuated g/C Ratio	0.11	0.42		0.23	0.54	0.54	0.04	0.12	0.12	0.10	0.18	0.18
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	192	2144		410	2762	860	73	226	192	177	335	284
v/s Ratio Prot	0.08	0.32		c0.21	c0.40		0.02	0.07		c0.09	c0.12	
v/s Ratio Perm						0.09			0.06			0.05
v/c Ratio	0.77	0.76		0.89	0.74	0.17	0.52	0.56	0.48	0.90	0.66	0.30
Uniform Delay, d1	65.0	36.7		55.7	26.1	17.2	70.4	62.1	61.5	66.7	57.2	53.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.9	2.5		20.0	1.4	0.2	3.1	3.2	1.9	38.9	4.6	0.6
Delay (s)	80.9	39.3		75.7	27.5	17.4	73.5	65.3	63.4	105.7	61.8	53.9
Level of Service	F	D		E	C	B	E	E	E	F	E	D
Approach Delay (s)		42.7			33.4			64.5			69.0	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

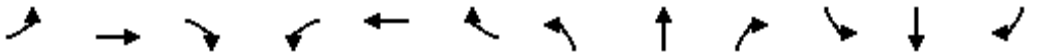
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	536	53	0	462	53
Future Volume (vph)	0	536	53	0	462	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1583	1863		1770	1863
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1583	1863		1770	1863
Peak-hour factor, PHF	0.58	0.58	0.58	0.58	0.58	0.58
Adj. Flow (vph)	0	924	91	0	797	91
RTOR Reduction (vph)	0	764	0	0	0	0
Lane Group Flow (vph)	0	160	91	0	797	91
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)		12.7	9.1		39.4	52.5
Effective Green, g (s)		12.7	9.1		39.4	52.5
Actuated g/C Ratio		0.17	0.12		0.54	0.72
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		274	231		952	1336
v/s Ratio Prot			c0.05		c0.45	0.05
v/s Ratio Perm		c0.10				
v/c Ratio		0.59	0.39		0.84	0.07
Uniform Delay, d1		27.8	29.5		14.2	3.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.2	1.1		6.5	0.0
Delay (s)		31.0	30.6		20.7	3.1
Level of Service		C	C		C	A
Approach Delay (s)	31.0		30.6			18.9
Approach LOS	C		C			B

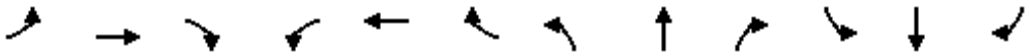
Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



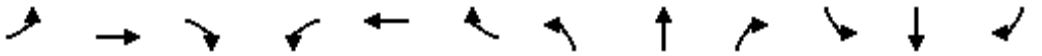
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	942	361	692	806	0	0	0	0	1261	1	798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1685	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1685	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	961	368	706	822	0	0	0	0	1287	1	814
RTOR Reduction (vph)	0	0	240	0	0	0	0	0	0	0	0	70
Lane Group Flow (vph)	0	961	128	706	822	0	0	0	0	643	645	744
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		32.1	32.1	23.4	59.3					50.8	50.8	50.8
Effective Green, g (s)		32.1	32.1	23.4	59.3					50.8	50.8	50.8
Actuated g/C Ratio		0.27	0.27	0.19	0.49					0.42	0.42	0.42
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		946	423	669	1748					711	713	670
v/s Ratio Prot		c0.27		c0.21	0.23							
v/s Ratio Perm			0.08							0.38	0.38	c0.47
v/c Ratio		1.02	0.30	1.06	0.47					0.90	0.90	1.11
Uniform Delay, d1		44.0	35.0	48.3	20.0					32.3	32.3	34.6
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		33.3	0.4	50.3	0.2					14.9	14.9	69.2
Delay (s)		77.2	35.4	98.6	20.2					47.3	47.3	103.8
Level of Service		E	D	F	C					D	D	F
Approach Delay (s)		65.7			56.4			0.0			69.2	
Approach LOS		E			E			A			E	

Intersection Summary			
HCM 2000 Control Delay	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



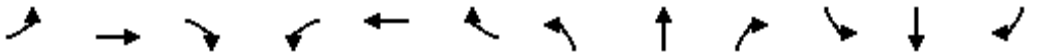
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	405	1820	0	0	1224	640	262	2	853	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3360	1441	1681	1453	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3360	1441	1681	1453	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	413	1857	0	0	1249	653	267	2	870	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	291	0	11	40	0	0	0
Lane Group Flow (vph)	413	1857	0	0	1324	284	240	444	404	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	15.8	71.7			51.7	51.7	38.0	38.0	38.0			
Effective Green, g (s)	15.8	71.7			51.7	51.7	38.0	38.0	38.0			
Actuated g/C Ratio	0.13	0.60			0.43	0.43	0.32	0.32	0.32			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	453	2121			1452	622	534	461	477			
v/s Ratio Prot	0.12	c0.52			0.39							
v/s Ratio Perm						0.20	0.14	0.31	0.27			
v/c Ratio	0.91	0.88			0.91	0.46	0.45	0.96	0.85			
Uniform Delay, d1	51.2	20.2			31.8	24.0	32.5	40.1	38.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	22.4	4.4			8.9	0.5	0.6	32.4	13.0			
Delay (s)	73.7	24.6			40.7	24.6	33.1	72.5	51.1			
Level of Service	E	C			D	C	C	E	D			
Approach Delay (s)		33.5			35.8			55.9			0.0	
Approach LOS		C			D			E			A	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	14.1
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



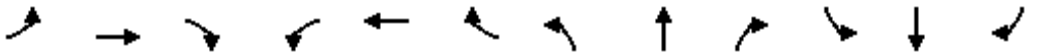
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	2058	45	274	1331	109	29	207	507	71	193	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	292	2144	47	285	1386	114	30	216	528	74	201	277
RTOR Reduction (vph)	0	1	0	0	0	56	0	0	313	0	0	213
Lane Group Flow (vph)	292	2190	0	285	1386	58	30	216	215	74	201	64
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	32.1	61.2		30.9	59.6	59.6	4.8	29.0	29.0	10.7	34.9	34.9
Effective Green, g (s)	32.1	61.2		30.9	59.6	59.6	4.8	29.0	29.0	10.7	34.9	34.9
Actuated g/C Ratio	0.21	0.41		0.21	0.40	0.40	0.03	0.19	0.19	0.07	0.23	0.23
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	377	2062		363	2015	627	56	359	305	125	432	367
v/s Ratio Prot	c0.17	c0.43		0.16	0.27		0.02	0.12		c0.04	0.11	
v/s Ratio Perm						0.04			c0.14			0.04
v/c Ratio	0.77	1.06		0.79	0.69	0.09	0.54	0.60	0.70	0.59	0.47	0.18
Uniform Delay, d1	55.7	44.6		56.6	37.7	28.4	71.7	55.4	56.7	67.7	49.7	46.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	38.7		10.4	1.4	0.2	4.9	2.8	7.2	4.9	0.8	0.2
Delay (s)	64.9	83.3		67.0	39.1	28.6	76.6	58.3	63.9	72.7	50.5	46.5
Level of Service	E	F		E	D	C	E	E	E	E	D	D
Approach Delay (s)		81.1			42.9			62.8			51.4	
Approach LOS		F			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	63.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



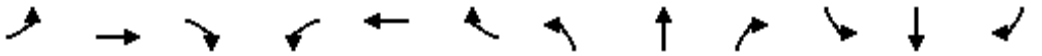
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	2221	90	7	1413	323	53	23	14	392	37	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	1770	5085	2787	1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	2314	94	7	1472	336	55	24	15	408	39	275
RTOR Reduction (vph)	0	0	35	0	0	132	0	0	14	0	0	194
Lane Group Flow (vph)	333	2314	59	7	1472	204	55	24	1	408	39	81
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.1	75.5	75.5	0.7	61.1	61.1	6.6	5.3	5.3	18.3	17.0	17.0
Effective Green, g (s)	15.1	75.5	75.5	0.7	61.1	61.1	6.6	5.3	5.3	18.3	17.0	17.0
Actuated g/C Ratio	0.13	0.63	0.63	0.01	0.51	0.51	0.05	0.04	0.04	0.15	0.14	0.14
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	5.2	2.0	3.5	3.5	2.0	3.5	3.5
Lane Grp Cap (vph)	431	3199	995	10	2589	1419	97	82	69	523	263	224
v/s Ratio Prot	c0.10	c0.46		0.00	0.29		0.03	0.01		c0.12	0.02	
v/s Ratio Perm			0.04			0.07			0.00			c0.05
v/c Ratio	0.77	0.72	0.06	0.70	0.57	0.14	0.57	0.29	0.01	0.78	0.15	0.36
Uniform Delay, d1	50.8	15.1	8.6	59.5	20.3	15.6	55.3	55.5	54.8	48.9	45.2	46.6
Progression 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
Incremental Delay, d2	7.7	1.1	0.1	101.3	0.5	0.1	4.5	2.3	0.1	6.9	0.3	1.2
Delay (s)	58.4	16.2	8.6	160.8	20.8	15.7	59.8	57.9	54.9	55.8	45.5	47.8
Level of Service	E	B	A	F	C	B	E	E	D	E	D	D
Approach Delay (s)		21.1			20.4			58.5			52.2	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



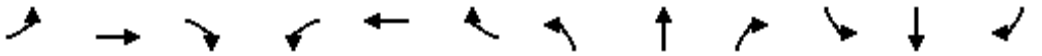
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	1433	558	104	957	99	366	282	72	140	338	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	256	1493	581	108	997	103	381	294	75	146	352	202
RTOR Reduction (vph)	0	0	241	0	0	58	0	0	59	0	0	174
Lane Group Flow (vph)	256	1493	340	108	997	45	381	294	16	146	352	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.8	59.6	59.6	8.2	54.0	54.0	18.4	25.9	25.9	9.6	17.1	17.1
Effective Green, g (s)	13.8	59.6	59.6	8.2	54.0	54.0	18.4	25.9	25.9	9.6	17.1	17.1
Actuated g/C Ratio	0.11	0.48	0.48	0.07	0.44	0.44	0.15	0.21	0.21	0.08	0.14	0.14
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	382	2444	1339	227	2214	689	509	1062	330	265	701	384
v/s Ratio Prot	c0.07	c0.29		0.03	0.20		c0.11	0.06		0.04	c0.07	
v/s Ratio Perm			0.12			0.03			0.01			0.01
v/c Ratio	0.67	0.61	0.25	0.48	0.45	0.07	0.75	0.28	0.05	0.55	0.50	0.07
Uniform Delay, d1	52.9	23.7	19.0	55.8	24.6	20.3	50.6	41.2	39.2	55.1	49.5	46.5
Progression 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
Incremental Delay, d2	4.2	0.7	0.2	1.1	0.3	0.1	5.7	0.2	0.1	2.0	0.9	0.1
Delay (s)	57.1	24.4	19.3	57.0	24.9	20.4	56.2	41.4	39.3	57.1	50.4	46.7
Level of Service	E	C	B	E	C	C	E	D	D	E	D	D
Approach Delay (s)		26.7			27.4			48.7			50.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



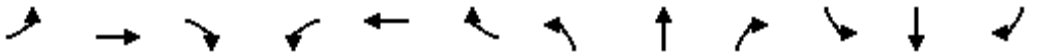
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	104	106	5	42	131	38	565	3	127	848	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1721		1770	1863	1583	1770	5081		1770	5044	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1721		1770	1863	1583	1770	5081		1770	5044	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	109	112	5	44	138	40	595	3	134	893	51
RTOR Reduction (vph)	0	38	0	0	0	112	0	1	0	0	5	0
Lane Group Flow (vph)	29	183	0	5	44	26	40	597	0	134	939	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	2.3	13.6		0.7	12.5	12.5	3.6	23.8		8.4	28.7	
Effective Green, g (s)	2.3	13.6		0.7	12.5	12.5	3.6	23.8		8.4	28.7	
Actuated g/C Ratio	0.03	0.21		0.01	0.19	0.19	0.05	0.36		0.13	0.43	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	61	354		18	352	299	96	1832		225	2193	
v/s Ratio Prot	c0.02	c0.11		0.00	0.02		0.02	0.12		c0.08	c0.19	
v/s Ratio Perm						0.02						
v/c Ratio	0.48	0.52		0.28	0.12	0.09	0.42	0.33		0.60	0.43	
Uniform Delay, d1	31.3	23.3		32.4	22.2	22.0	30.2	15.3		27.2	13.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	0.5		3.0	0.3	0.3	1.1	0.2		3.5	0.3	
Delay (s)	37.0	23.8		35.4	22.5	22.3	31.3	15.5		30.7	13.2	
Level of Service	D	C		D	C	C	C	B		C	B	
Approach Delay (s)		25.3			22.7			16.5			15.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



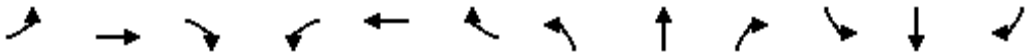
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	89	17	25	123	361	20	204	15	600	320	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3454		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3454		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	43	100	19	28	138	406	22	229	17	674	360	35
RTOR Reduction (vph)	0	15	0	0	0	324	0	0	14	0	0	18
Lane Group Flow (vph)	43	104	0	28	138	82	22	229	3	674	360	17
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	2.8	16.8		1.4	15.1	15.1	0.9	14.8	14.8	22.0	35.9	35.9
Effective Green, g (s)	2.8	16.8		1.4	15.1	15.1	0.9	14.8	14.8	22.0	35.9	35.9
Actuated g/C Ratio	0.04	0.23		0.02	0.20	0.20	0.01	0.20	0.20	0.30	0.48	0.48
Clearance Time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	66	779		64	718	321	21	1011	314	1015	2453	763
v/s Ratio Prot	c0.02	0.03		0.01	0.04		0.01	c0.05		c0.20	0.07	
v/s Ratio Perm						c0.05			0.00			0.01
v/c Ratio	0.65	0.13		0.44	0.19	0.26	1.05	0.23	0.01	0.66	0.15	0.02
Uniform Delay, d1	35.3	23.0		36.1	24.6	24.9	36.8	25.0	23.9	23.0	10.7	10.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.2	0.0		1.7	0.3	1.0	212.0	0.3	0.0	1.3	0.1	0.0
Delay (s)	51.5	23.0		37.8	24.9	26.0	248.8	25.3	24.0	24.2	10.8	10.1
Level of Service	D	C		D	C	C	F	C	C	C	B	B
Approach Delay (s)		30.6			26.3			43.5			19.2	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	19.7
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	
Volume (vph)	0	741	12	0	621	25	0	0	0	176	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.87	
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1534	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1534	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	788	13	0	661	27	0	0	0	187	1	127
RTOR Reduction (vph)	0	0	10	0	0	15	0	0	0	0	108	0
Lane Group Flow (vph)	0	788	3	0	661	12	0	0	0	165	42	0
Turn Type		NA	Perm		NA	Perm				Perm	NA	
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		29.1	29.1		46.7	46.7				16.6	16.6	
Effective Green, g (s)		29.1	29.1		46.7	46.7				16.6	16.6	
Actuated g/C Ratio		0.27	0.27		0.43	0.43				0.15	0.15	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Vehicle Extension (s)		5.0	5.0		5.0	5.0				3.2	3.2	
Lane Grp Cap (vph)		1351	420		2168	675				254	232	
v/s Ratio Prot		c0.15			c0.13							
v/s Ratio Perm			0.00			0.01				c0.10	0.03	
v/c Ratio		0.58	0.01		0.30	0.02				0.65	0.18	
Uniform Delay, d1		34.9	29.6		20.7	18.1				43.7	40.5	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		1.0	0.0		0.4	0.0				5.7	0.4	
Delay (s)		35.9	29.6		21.1	18.2				49.4	40.9	
Level of Service		D	C		C	B				D	D	
Approach Delay (s)		35.8			21.0			0.0			45.4	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	17.1
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



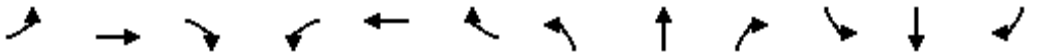
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	840	69	0	603	100	41	7	97	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.90				
Flt Protected		1.00	1.00		1.00	1.00		0.99				
Satd. Flow (prot)		5085	1583		5085	1583		3141				
Flt Permitted		1.00	1.00		1.00	1.00		0.99				
Satd. Flow (perm)		5085	1583		5085	1583		3141				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	903	74	0	648	108	44	8	104	0	0	0
RTOR Reduction (vph)	0	0	12	0	0	17	0	97	0	0	0	0
Lane Group Flow (vph)	0	903	62	0	648	91	0	59	0	0	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		100.8	100.8		100.8	100.8		7.9				
Effective Green, g (s)		100.8	100.8		100.8	100.8		7.9				
Actuated g/C Ratio		0.84	0.84		0.84	0.84		0.07				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		4271	1329		4271	1329		206				
v/s Ratio Prot		c0.18			0.13							
v/s Ratio Perm			0.04			0.06		0.02				
v/c Ratio		0.21	0.05		0.15	0.07		0.29				
Uniform Delay, d1		1.9	1.6		1.8	1.6		53.4				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.1		0.1	0.1		0.8				
Delay (s)		2.0	1.7		1.8	1.7		54.2				
Level of Service		A	A		A	A		D				
Approach Delay (s)		2.0			1.8			54.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



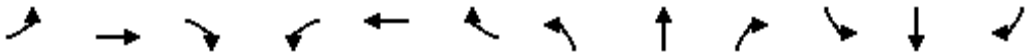
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	153	98	0	161	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1583	1863		1770	1863
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1583	1863		1770	1863
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	0	212	136	0	224	278
RTOR Reduction (vph)	0	179	0	0	0	0
Lane Group Flow (vph)	0	33	136	0	224	278
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)		5.6	8.4		10.0	22.4
Effective Green, g (s)		5.6	8.4		10.0	22.4
Actuated g/C Ratio		0.16	0.23		0.28	0.62
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		246	434		491	1159
v/s Ratio Prot			c0.07		c0.13	0.15
v/s Ratio Perm		c0.02				
v/c Ratio		0.13	0.31		0.46	0.24
Uniform Delay, d1		13.1	11.4		10.8	3.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.4		0.7	0.1
Delay (s)		13.4	11.8		11.4	3.1
Level of Service		B	B		B	A
Approach Delay (s)	13.4		11.8			6.8
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	804	532	524	813	0	0	0	0	394	5	437
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	855	566	557	865	0	0	0	0	419	5	465
RTOR Reduction (vph)	0	0	388	0	0	0	0	0	0	0	0	90
Lane Group Flow (vph)	0	855	178	557	865	0	0	0	0	214	210	375
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		25.6	25.6	17.8	47.4					26.1	26.1	26.1
Effective Green, g (s)		25.6	25.6	17.8	47.4					26.1	26.1	26.1
Actuated g/C Ratio		0.31	0.31	0.22	0.58					0.32	0.32	0.32
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1597	497	749	2058					538	540	506
v/s Ratio Prot		c0.17		c0.16	0.24							
v/s Ratio Perm			0.11							0.13	0.12	c0.24
v/c Ratio		0.54	0.36	0.74	0.42					0.40	0.39	0.74
Uniform Delay, d1		23.0	21.6	29.7	9.4					21.6	21.5	24.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.4	4.0	0.1					0.5	0.5	5.8
Delay (s)		23.4	22.0	33.7	9.6					22.1	22.0	30.5
Level of Service		C	C	C	A					C	C	C
Approach Delay (s)		22.9			19.0			0.0			26.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	426	771	0	0	931	609	406	1	508	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1774	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1774	2787			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	444	803	0	0	970	634	423	1	529	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	467	0	0	224	0	0	0
Lane Group Flow (vph)	444	803	0	0	970	167	0	424	305	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	26.3	53.6			23.3	23.3		27.1	27.1			
Effective Green, g (s)	26.3	53.6			23.3	23.3		27.1	27.1			
Actuated g/C Ratio	0.30	0.60			0.26	0.26		0.31	0.31			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	524	2138			1335	732		542	851			
v/s Ratio Prot	c0.25	0.23			c0.19							
v/s Ratio Perm						0.06		0.24	0.11			
v/c Ratio	0.85	0.38			0.73	0.23		0.78	0.36			
Uniform Delay, d1	29.3	9.0			29.8	25.6		28.1	24.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	12.1	0.1			2.0	0.2		7.2	0.3			
Delay (s)	41.4	9.1			31.8	25.8		35.4	24.3			
Level of Service	D	A			C	C		D	C			
Approach Delay (s)		20.6			29.4			29.2			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	942	361	692	806	0	0	0	0	1262	1	798
Future Volume (vph)	0	942	361	692	806	0	0	0	0	1262	1	798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1685	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1685	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	961	368	706	822	0	0	0	0	1288	1	814
RTOR Reduction (vph)	0	0	240	0	0	0	0	0	0	0	0	70
Lane Group Flow (vph)	0	961	128	706	822	0	0	0	0	644	645	744
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		32.1	32.1	23.4	59.3					50.8	50.8	50.8
Effective Green, g (s)		32.1	32.1	23.4	59.3					50.8	50.8	50.8
Actuated g/C Ratio		0.27	0.27	0.19	0.49					0.42	0.42	0.42
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		946	423	669	1748					711	713	670
v/s Ratio Prot		c0.27		c0.21	0.23							
v/s Ratio Perm			0.08							0.38	0.38	c0.47
v/c Ratio		1.02	0.30	1.06	0.47					0.91	0.90	1.11
Uniform Delay, d1		44.0	35.0	48.3	20.0					32.4	32.3	34.6
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		33.3	0.4	50.3	0.2					15.1	14.9	69.2
Delay (s)		77.2	35.4	98.6	20.2					47.4	47.3	103.8
Level of Service		E	D	F	C					D	D	F
Approach Delay (s)		65.7			56.4			0.0			69.2	
Approach LOS		E			E			A			E	

Intersection Summary			
HCM 2000 Control Delay	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	1821	0	0	1224	640	262	2	854	0	0	0
Future Volume (vph)	405	1821	0	0	1224	640	262	2	854	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3360	1441	1681	1453	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3360	1441	1681	1453	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	413	1858	0	0	1249	653	267	2	871	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	291	0	11	40	0	0	0
Lane Group Flow (vph)	413	1858	0	0	1324	284	240	445	404	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	15.8	71.7			51.7	51.7	38.1	38.1	38.1			
Effective Green, g (s)	15.8	71.7			51.7	51.7	38.1	38.1	38.1			
Actuated g/C Ratio	0.13	0.60			0.43	0.43	0.32	0.32	0.32			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	453	2119			1451	622	535	462	478			
v/s Ratio Prot	0.12	c0.52			0.39							
v/s Ratio Perm						0.20	0.14	0.31	0.27			
v/c Ratio	0.91	0.88			0.91	0.46	0.45	0.96	0.84			
Uniform Delay, d1	51.3	20.3			31.9	24.1	32.4	40.1	38.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	22.4	4.4			9.0	0.5	0.6	32.4	12.9			
Delay (s)	73.7	24.7			40.9	24.6	33.0	72.5	50.9			
Level of Service	E	C			D	C	C	E	D			
Approach Delay (s)		33.6			35.9			55.8			0.0	
Approach LOS		C			D			E			A	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	14.1
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	2035	45	274	1321	109	29	207	507	71	193	266
Future Volume (vph)	280	2035	45	274	1321	109	29	207	507	71	193	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5069		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	292	2120	47	285	1376	114	30	216	528	74	201	277
RTOR Reduction (vph)	0	1	0	0	0	56	0	0	313	0	0	213
Lane Group Flow (vph)	292	2166	0	285	1376	58	30	216	215	74	201	64
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	32.1	61.2		30.9	59.6	59.6	4.8	29.0	29.0	10.7	34.9	34.9
Effective Green, g (s)	32.1	61.2		30.9	59.6	59.6	4.8	29.0	29.0	10.7	34.9	34.9
Actuated g/C Ratio	0.21	0.41		0.21	0.40	0.40	0.03	0.19	0.19	0.07	0.23	0.23
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	377	2062		363	2015	627	56	359	305	125	432	367
v/s Ratio Prot	c0.17	c0.43		0.16	0.27		0.02	0.12		c0.04	0.11	
v/s Ratio Perm						0.04			c0.14			0.04
v/c Ratio	0.77	1.05		0.79	0.68	0.09	0.54	0.60	0.70	0.59	0.47	0.18
Uniform Delay, d1	55.7	44.6		56.6	37.6	28.4	71.7	55.4	56.7	67.7	49.7	46.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	34.6		10.4	1.4	0.2	4.9	2.8	7.2	4.9	0.8	0.2
Delay (s)	64.9	79.2		67.0	38.9	28.6	76.6	58.3	63.9	72.7	50.5	46.5
Level of Service	E	E		E	D	C	E	E	E	E	D	D
Approach Delay (s)		77.5			42.8			62.8			51.4	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

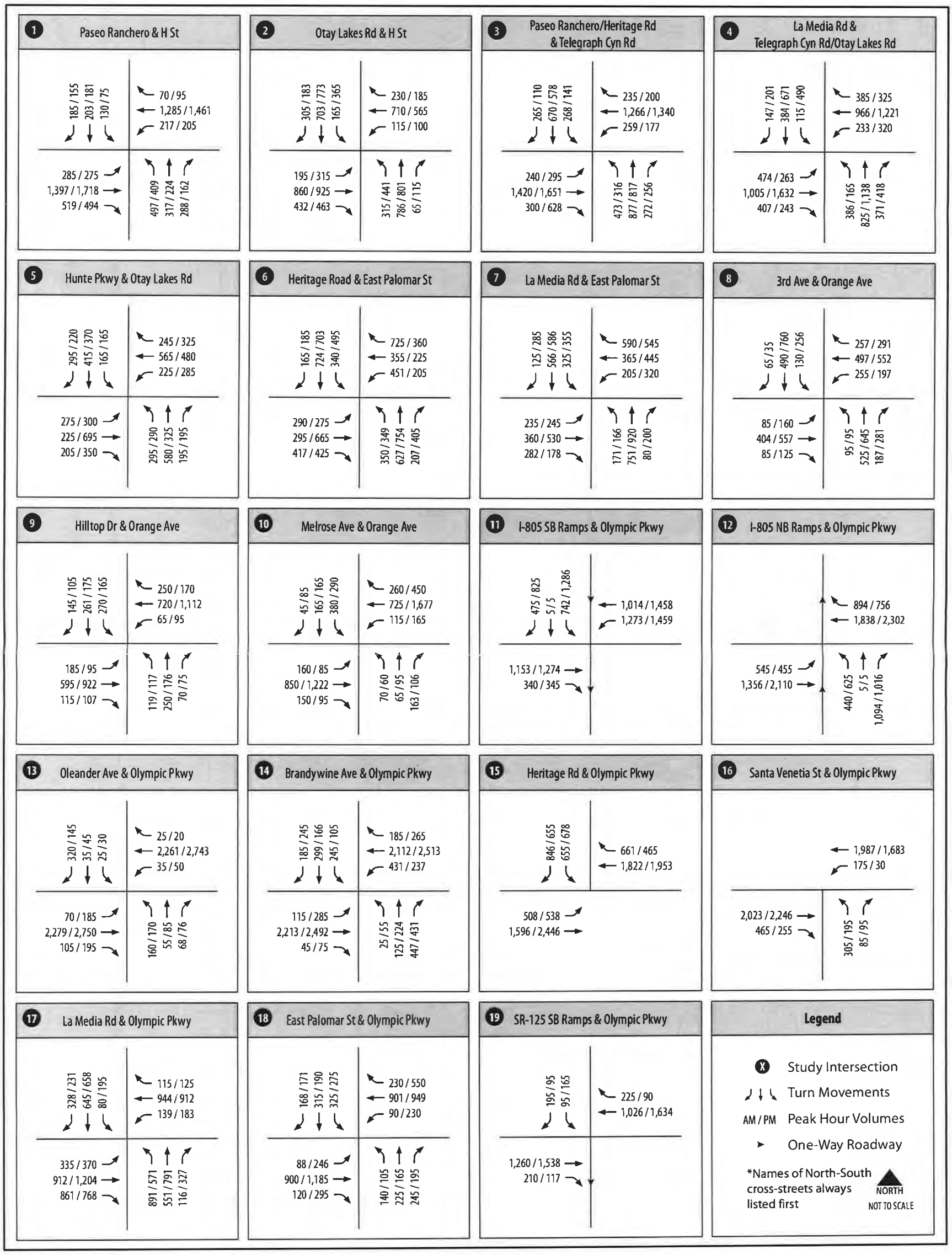


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	153	89	0	161	207
Future Volume (vph)	0	153	89	0	161	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1583	1863		1770	1863
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1583	1863		1770	1863
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	0	212	124	0	224	288
RTOR Reduction (vph)	0	179	0	0	0	0
Lane Group Flow (vph)	0	34	124	0	224	288
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)		5.6	8.0		10.0	22.0
Effective Green, g (s)		5.6	8.0		10.0	22.0
Actuated g/C Ratio		0.16	0.22		0.28	0.62
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		249	418		497	1151
v/s Ratio Prot			0.07		c0.13	c0.15
v/s Ratio Perm		c0.02				
v/c Ratio		0.13	0.30		0.45	0.25
Uniform Delay, d1		12.9	11.5		10.5	3.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.4		0.7	0.1
Delay (s)		13.2	11.9		11.2	3.2
Level of Service		B	B		B	A
Approach Delay (s)	13.2		11.9			6.7
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX C: YEAR 2020 BACKGROUND INFORMATION (CHEN RYAN STUDY, 2014)

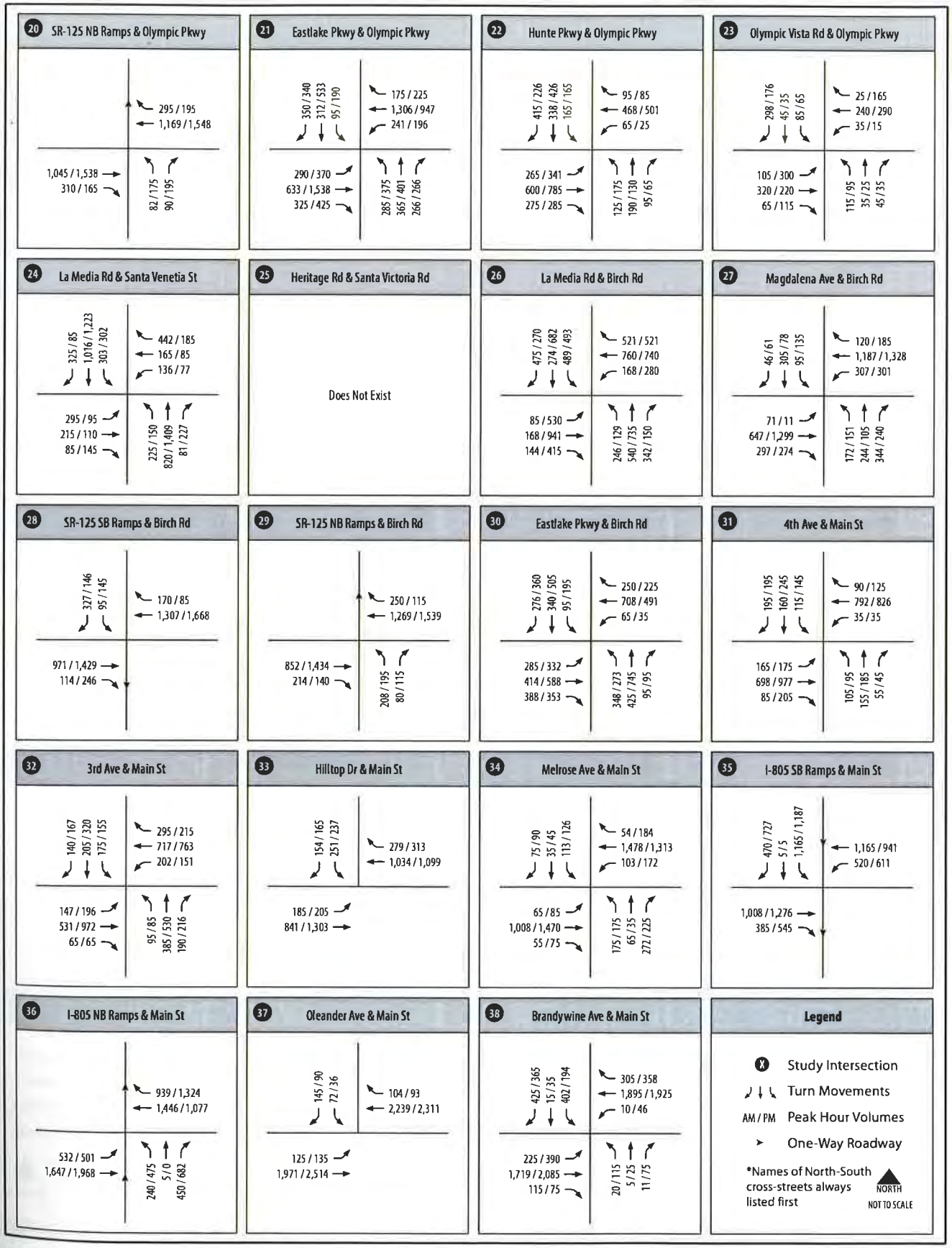


University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10

CHEN RYAN

Figure 7-2A

Intersection Peak Hour Traffic Volumes -
Year 2020 Base Plus Project Conditions (Study Intersections 1-19)

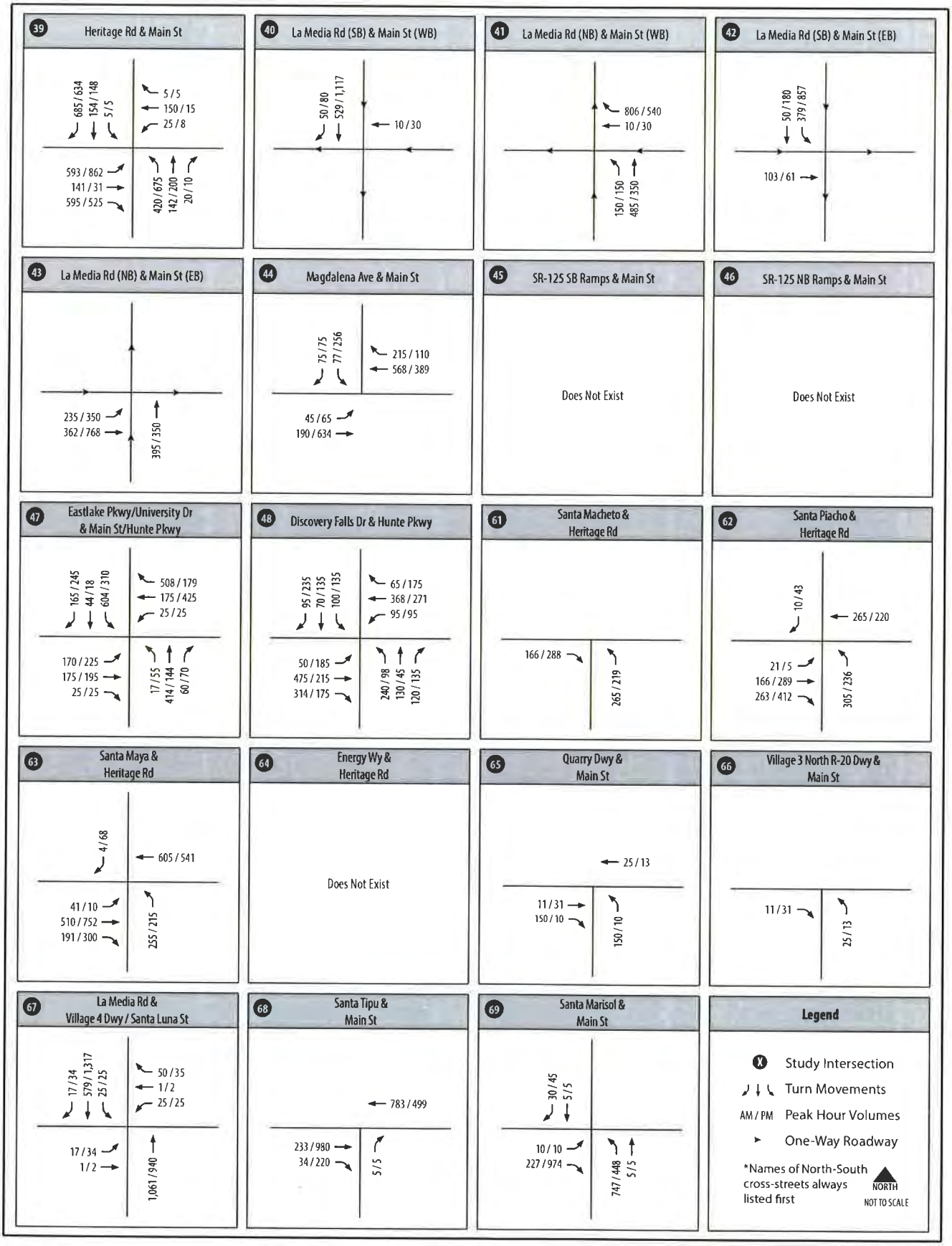


University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10

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Figure 7-2A

Intersection Peak Hour Traffic Volumes -
Year 2020 Base Plus Project Conditions (Study Intersections 20-38)



University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10
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Figure 7-2A
Intersection Peak Hour Traffic Volumes - Year 2020 Base Plus Project Conditions (Study Intersections 39-48 & 61-69)

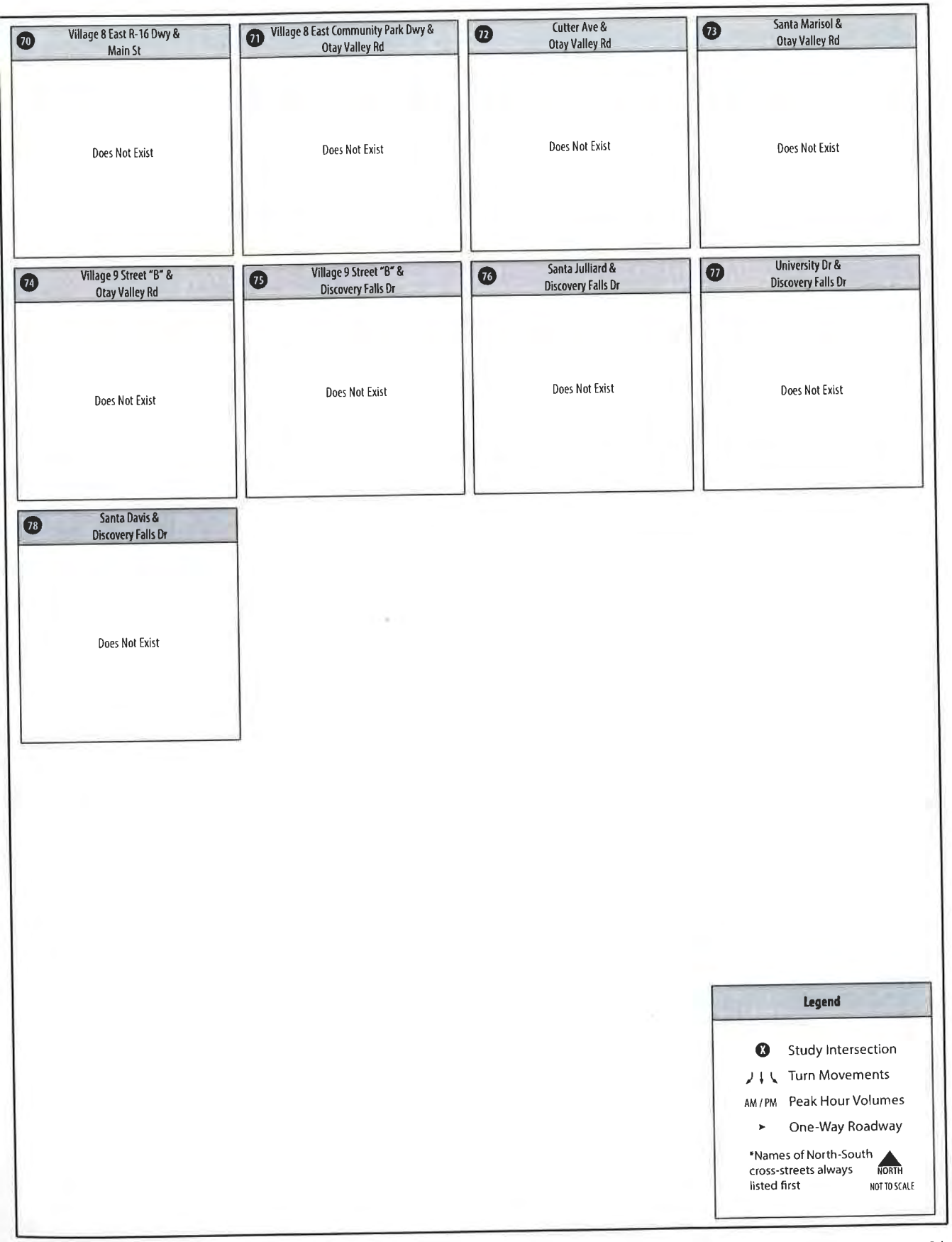


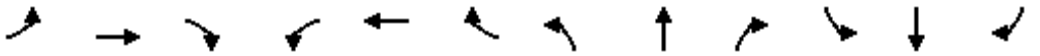
Figure 7-2A

University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10

CHEN RYAN

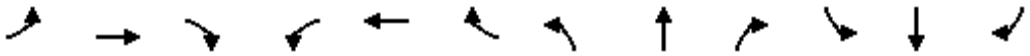
Intersection Peak Hour Traffic Volumes -
Year 2020 Base Plus Project Conditions (Study Intersections 70-78)

APPENDIX D: YEAR 2020 LEVEL OF SERVICE WORKSHEET



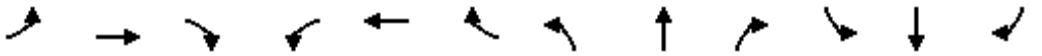
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1153	340	1273	1014	0	0	0	0	742	5	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1253	370	1384	1102	0	0	0	0	807	5	516
RTOR Reduction (vph)	0	0	118	0	0	0	0	0	0	0	0	110
Lane Group Flow (vph)	0	1253	252	1384	1102	0	0	0	0	403	409	406
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		40.1	40.1	40.8	84.7					25.4	25.4	25.4
Effective Green, g (s)		40.1	40.1	40.8	84.7					25.4	25.4	25.4
Actuated g/C Ratio		0.33	0.33	0.34	0.71					0.21	0.21	0.21
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1182	528	1167	2497					355	356	335
v/s Ratio Prot		c0.35		c0.40	0.31							
v/s Ratio Perm			0.16							0.24	0.24	c0.26
v/c Ratio		1.06	0.48	1.19	0.44					1.14	1.15	1.21
Uniform Delay, d1		40.0	31.7	39.6	7.5					47.3	47.3	47.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		43.7	0.7	92.6	0.1					89.7	94.6	120.3
Delay (s)		83.6	32.3	132.2	7.7					137.0	141.9	167.6
Level of Service		F	C	F	A					F	F	F
Approach Delay (s)		71.9			77.0			0.0			150.4	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	93.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



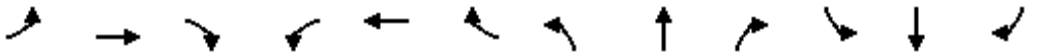
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	545	1356	0	0	1838	894	440	5	1094	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.99	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3367	1441	1681	1457	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3367	1441	1681	1457	1504			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	586	1458	0	0	1976	961	473	5	1176	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	274	0	33	42	0	0	0
Lane Group Flow (vph)	586	1458	0	0	2069	591	426	583	570	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	14.8	74.7			55.7	55.7	35.4	35.4	35.4			
Effective Green, g (s)	14.8	74.7			55.7	55.7	35.4	35.4	35.4			
Actuated g/C Ratio	0.12	0.62			0.46	0.46	0.29	0.29	0.29			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	423	2203			1562	668	495	429	443			
v/s Ratio Prot	c0.17	0.41			c0.61							
v/s Ratio Perm						0.41	0.25	0.40	0.38			
v/c Ratio	1.39	0.66			1.32	0.89	0.86	1.36	1.29			
Uniform Delay, d1	52.6	14.5			32.1	29.2	40.0	42.3	42.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	187.5	0.8			150.7	13.3	14.2	176.0	145.6			
Delay (s)	240.1	15.3			182.9	42.6	54.2	218.3	187.9			
Level of Service	F	B			F	D	D	F	F			
Approach Delay (s)		79.8			141.5			164.8			0.0	
Approach LOS		E			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	128.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



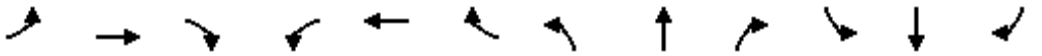
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	2213	45	431	2112	185	25	125	447	245	299	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5070		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5070		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	120	2305	47	449	2200	193	26	130	466	255	311	193
RTOR Reduction (vph)	0	1	0	0	0	45	0	0	242	0	0	105
Lane Group Flow (vph)	120	2351	0	449	2200	148	26	130	224	255	311	88
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	12.3	57.0		32.8	77.1	77.1	3.3	25.1	25.1	16.5	38.3	38.3
Effective Green, g (s)	12.3	57.0		32.8	77.1	77.1	3.3	25.1	25.1	16.5	38.3	38.3
Actuated g/C Ratio	0.08	0.38		0.22	0.51	0.51	0.02	0.17	0.17	0.11	0.26	0.26
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	145	1926		387	2613	813	38	311	264	194	475	404
v/s Ratio Prot	0.07	c0.46		c0.25	0.43		0.01	0.07		c0.14	0.17	
v/s Ratio Perm						0.09			c0.14			0.06
v/c Ratio	0.83	1.22		1.16	0.84	0.18	0.68	0.42	0.85	1.31	0.65	0.22
Uniform Delay, d1	67.8	46.5		58.6	31.2	19.5	72.8	55.9	60.6	66.8	49.9	44.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.9	104.2		97.1	3.5	0.5	33.5	0.9	21.5	173.2	3.2	0.3
Delay (s)	97.7	150.7		155.7	34.7	20.0	106.4	56.8	82.0	239.9	53.2	44.3
Level of Service	F	F		F	C	C	F	E	F	F	D	D
Approach Delay (s)		148.1			52.8			77.8			113.7	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	97.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	508	1596	0	0	1822	661	0	0	0	655	0	846
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2			7.2	7.2				4.0		5.0
Lane Util. Factor	0.97	0.91			0.91	0.88				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	3433	5085			5085	2787				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	3433	5085			5085	2787				3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	552	1735	0	0	1980	718	0	0	0	712	0	920
RTOR Reduction (vph)	0	0	0	0	0	166	0	0	0	0	0	150
Lane Group Flow (vph)	552	1735	0	0	1980	552	0	0	0	712	0	770
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm		Perm	Prot		Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases			2			6	8		8			4
Actuated Green, G (s)	20.0	78.8			54.8	54.8				60.0		59.0
Effective Green, g (s)	20.0	78.8			54.8	54.8				60.0		59.0
Actuated g/C Ratio	0.13	0.53			0.37	0.37				0.40		0.39
Clearance Time (s)	4.0	7.2			7.2	7.2				4.0		5.0
Vehicle Extension (s)	2.0	5.2			5.2	5.2				2.0		3.5
Lane Grp Cap (vph)	457	2671			1857	1018				1373		622
v/s Ratio Prot	c0.16	0.34			c0.39					0.21		
v/s Ratio Perm						0.20						c0.49
v/c Ratio	1.21	0.65			1.07	0.54				0.52		1.24
Uniform Delay, d1	65.0	25.7			47.6	37.7				34.1		45.5
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	112.6	0.8			41.1	1.1				0.1		120.6
Delay (s)	177.6	26.4			88.7	38.8				34.2		166.1
Level of Service	F	C			F	D				C		F
Approach Delay (s)		62.9			75.4			0.0			108.5	
Approach LOS		E			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



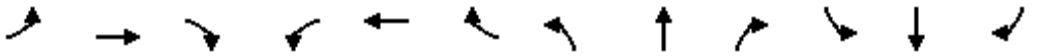
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	335	912	861	139	944	115	891	551	116	80	645	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	360	981	926	149	1015	124	958	592	125	86	694	353
RTOR Reduction (vph)	0	0	427	0	0	92	0	0	69	0	0	201
Lane Group Flow (vph)	360	981	499	149	1015	32	958	592	56	86	694	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.0	43.4	43.4	8.8	37.2	37.2	40.1	65.0	65.0	7.5	32.4	32.4
Effective Green, g (s)	15.0	43.4	43.4	8.8	37.2	37.2	40.1	65.0	65.0	7.5	32.4	32.4
Actuated g/C Ratio	0.10	0.30	0.30	0.06	0.26	0.26	0.28	0.45	0.45	0.05	0.22	0.22
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	354	1517	831	207	1300	405	946	2273	707	177	1133	621
v/s Ratio Prot	c0.10	0.19		0.04	c0.20		c0.28	0.12		0.03	c0.14	
v/s Ratio Perm			0.18			0.02			0.04			0.05
v/c Ratio	1.02	0.65	0.60	0.72	0.78	0.08	1.01	0.26	0.08	0.49	0.61	0.24
Uniform Delay, d1	65.2	44.3	43.6	67.1	50.3	41.1	52.7	25.2	23.0	67.1	50.9	46.4
Progression 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
Incremental Delay, d2	52.2	1.4	1.9	10.6	3.7	0.2	32.4	0.1	0.1	1.5	1.2	0.3
Delay (s)	117.4	45.7	45.5	77.7	54.0	41.3	85.1	25.2	23.1	68.6	52.1	46.8
Level of Service	F	D	D	E	D	D	F	C	C	E	D	D
Approach Delay (s)		57.0			55.5			59.3			51.7	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	20.7
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	215	85	136	165	442	225	820	81	303	1016	325
Future Volume (vph)	295	215	85	136	165	442	225	820	81	303	1016	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.0		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1784		1770	1863	1583	1770	5017		1770	4900	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1784		1770	1863	1583	1770	5017		1770	4900	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	226	89	143	174	465	237	863	85	319	1069	342
RTOR Reduction (vph)	0	12	0	0	0	320	0	9	0	0	42	0
Lane Group Flow (vph)	311	303	0	143	174	145	237	939	0	319	1369	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	23.4	33.1		13.0	23.2	23.2	21.8	37.7		27.2	42.7	
Effective Green, g (s)	23.4	33.1		13.0	23.2	23.2	21.8	37.7		27.2	42.7	
Actuated g/C Ratio	0.18	0.25		0.10	0.18	0.18	0.17	0.29		0.21	0.33	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.0		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	318	454		177	332	282	296	1454		370	1609	
v/s Ratio Prot	c0.18	c0.17		0.08	0.09		0.13	0.19		c0.18	c0.28	
v/s Ratio Perm						0.09						
v/c Ratio	0.98	0.67		0.81	0.52	0.52	0.80	0.65		0.86	0.85	
Uniform Delay, d1	53.0	43.5		57.3	48.4	48.3	52.0	40.3		49.6	40.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.0	7.6		21.9	5.8	6.6	13.6	1.4		18.1	5.0	
Delay (s)	97.0	51.1		79.1	54.2	54.9	65.6	41.7		67.7	45.7	
Level of Service	F	D		E	D	D	E	D		E	D	
Approach Delay (s)		73.9			59.2			46.5			49.7	
Approach LOS		E			E			D			D	

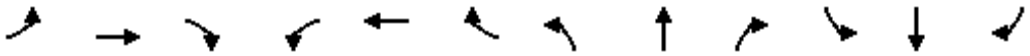
Intersection Summary			
HCM 2000 Control Delay	54.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



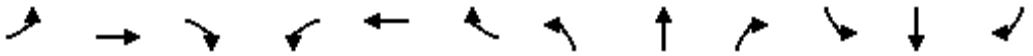
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	168	144	168	760	521	246	540	342	489	274	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.3
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3294		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3294		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	183	157	183	826	566	267	587	372	532	298	516
RTOR Reduction (vph)	0	103	0	0	0	287	0	0	278	0	0	347
Lane Group Flow (vph)	92	237	0	183	826	279	267	587	94	532	298	169
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			6
Actuated Green, G (s)	8.5	38.6		6.9	36.7	36.7	20.9	28.4	28.4	18.6	26.1	36.7
Effective Green, g (s)	8.5	38.6		6.9	36.7	36.7	20.9	28.4	28.4	18.6	26.1	36.7
Actuated g/C Ratio	0.08	0.34		0.06	0.33	0.33	0.19	0.25	0.25	0.17	0.23	0.33
Clearance Time (s)	4.5	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.3
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.5
Lane Grp Cap (vph)	134	1136		211	1160	519	330	1290	401	570	1186	519
v/s Ratio Prot	0.05	0.07		c0.05	c0.23		0.15	c0.12		c0.15	0.06	
v/s Ratio Perm						0.18			0.06			0.11
v/c Ratio	0.69	0.21		0.87	0.71	0.54	0.81	0.46	0.24	0.93	0.25	0.33
Uniform Delay, d1	50.4	25.9		52.0	33.0	30.7	43.6	35.2	33.1	46.0	34.9	28.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	0.0		28.3	2.8	2.3	12.9	0.6	0.7	22.2	0.3	0.9
Delay (s)	61.4	25.9		80.3	35.8	32.9	56.5	35.8	33.8	68.2	35.2	29.2
Level of Service	E	C		F	D	C	E	D	C	E	D	C
Approach Delay (s)		33.5			39.9			39.7			46.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	19.7
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	971	114	0	1307	170	0	0	0	95	327	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0	4.0	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	1.00	
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1767	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1055	124	0	1421	185	0	0	0	103	355	0
RTOR Reduction (vph)	0	0	52	0	0	59	0	0	0	0	0	0
Lane Group Flow (vph)	0	1055	72	0	1421	126	0	0	0	93	365	0
Turn Type		NA	Perm		NA	Perm				Perm	NA	
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		42.4	42.4		47.9	47.9				33.1	33.1	
Effective Green, g (s)		42.4	42.4		47.9	47.9				33.1	33.1	
Actuated g/C Ratio		0.31	0.31		0.35	0.35				0.24	0.24	
Clearance Time (s)		4.0	4.0		4.0	4.0				4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0	3.0	
Lane Grp Cap (vph)		1592	495		1798	560				410	431	
v/s Ratio Prot		c0.21			c0.28							
v/s Ratio Perm			0.05			0.08				0.06	0.21	
v/c Ratio		0.66	0.15		0.79	0.23				0.23	0.85	
Uniform Delay, d1		40.3	33.5		39.2	30.7				40.9	48.7	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		2.2	0.6		2.4	0.2				0.3	14.2	
Delay (s)		42.5	34.1		41.7	30.9				41.2	63.0	
Level of Service		D	C		D	C				D	E	
Approach Delay (s)		41.6			40.5			0.0			58.6	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	135.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

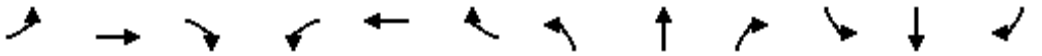


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	852	214	0	1269	250	208	0	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.96				
Flt Protected		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (prot)		5085	1583		5085	1583		3273				
Flt Permitted		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (perm)		5085	1583		5085	1583		3273				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	926	233	0	1379	272	226	0	87	0	0	0
RTOR Reduction (vph)	0	0	51	0	0	56	0	32	0	0	0	0
Lane Group Flow (vph)	0	926	182	0	1379	216	0	281	0	0	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA				
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		97.3	97.3		97.3	97.3		16.0				
Effective Green, g (s)		97.3	97.3		97.3	97.3		16.0				
Actuated g/C Ratio		0.78	0.78		0.78	0.78		0.13				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		3970	1236		3970	1236		420				
v/s Ratio Prot		0.18			c0.27							
v/s Ratio Perm			0.11			0.14		0.09				
v/c Ratio		0.23	0.15		0.35	0.17		0.87dl				
Uniform Delay, d1		3.7	3.4		4.1	3.5		51.8				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.3		0.1	0.1		4.1				
Delay (s)		3.8	3.6		4.2	3.6		55.8				
Level of Service		A	A		A	A		E				
Approach Delay (s)		3.8			4.1			55.8			0.0	
Approach LOS		A			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	124.6	Sum of lost time (s)	11.3
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

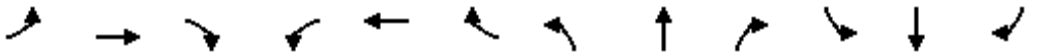
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1	0	25	1	50	0	1061	0	25	579	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.91		1.00	0.95	1.00
Frt	1.00	1.00		1.00	0.85			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863		1770	1588			5085		1770	3539	1583
Flt Permitted	0.72	1.00		0.76	1.00			1.00		0.21	1.00	1.00
Satd. Flow (perm)	1343	1863		1410	1588			5085		395	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	1	0	27	1	54	0	1153	0	27	629	18
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	0	0	0	6
Lane Group Flow (vph)	18	1	0	27	15	0	0	1153	0	27	629	12
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	23.0	23.0		23.0	23.0			59.0		59.0	59.0	59.0
Effective Green, g (s)	23.0	23.0		23.0	23.0			59.0		59.0	59.0	59.0
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.66		0.66	0.66	0.66
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	343	476		360	405			3333		258	2320	1037
v/s Ratio Prot		0.00			0.01			c0.23			0.18	
v/s Ratio Perm	0.01			c0.02						0.07		0.01
v/c Ratio	0.05	0.00		0.07	0.04			0.35		0.10	0.27	0.01
Uniform Delay, d1	25.3	25.0		25.4	25.2			6.9		5.7	6.5	5.4
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0		0.4	0.2			0.3		0.8	0.3	0.0
Delay (s)	25.6	25.0		25.8	25.3			7.2		6.5	6.8	5.4
Level of Service	C	C		C	C			A		A	A	A
Approach Delay (s)		25.5			25.5			7.2			6.7	
Approach LOS		C			C			A			A	

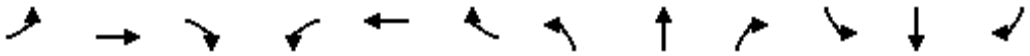
Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



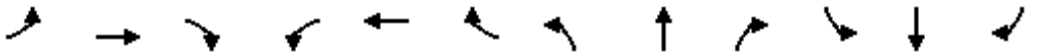
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	385	520	1165	0	0	0	0	1165	5	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1096	418	565	1266	0	0	0	0	1266	5	511
RTOR Reduction (vph)	0	0	260	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	1096	158	565	1266	0	0	0	0	633	638	480
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		24.1	24.1	18.9	47.0					41.9	41.9	41.9
Effective Green, g (s)		24.1	24.1	18.9	47.0					41.9	41.9	41.9
Actuated g/C Ratio		0.25	0.25	0.20	0.49					0.43	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1264	393	669	1716					726	729	684
v/s Ratio Prot		c0.22		c0.16	0.36							
v/s Ratio Perm			0.10							0.38	0.38	0.30
v/c Ratio		0.87	0.40	0.84	0.74					0.87	0.88	0.70
Uniform Delay, d1		34.9	30.4	37.6	20.0					25.1	25.1	22.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		6.5	0.7	9.6	1.7					11.2	11.4	3.3
Delay (s)		41.4	31.1	47.2	21.7					36.2	36.5	25.7
Level of Service		D	C	D	C					D	D	C
Approach Delay (s)		38.5			29.6			0.0			33.3	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	96.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	532	1647	0	0	1446	939	240	5	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1776	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1776	2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	578	1790	0	0	1572	1021	261	5	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	438	0	0	54	0	0	0
Lane Group Flow (vph)	578	1790	0	0	1572	583	0	266	435	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	33.8	70.0			32.2	32.2		18.6	18.6			
Effective Green, g (s)	33.8	70.0			32.2	32.2		18.6	18.6			
Actuated g/C Ratio	0.35	0.72			0.33	0.33		0.19	0.19			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	619	2564			1695	929		341	536			
v/s Ratio Prot	c0.33	0.51			c0.31							
v/s Ratio Perm						0.21		0.15	c0.16			
v/c Ratio	0.93	0.70			0.93	0.63		0.78	0.81			
Uniform Delay, d1	30.3	7.4			31.1	27.1		37.1	37.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	21.3	0.8			9.2	1.3		11.0	9.1			
Delay (s)	51.6	8.3			40.3	28.5		48.0	46.4			
Level of Service	D	A			D	C		D	D			
Approach Delay (s)		18.8			35.6			47.0			0.0	
Approach LOS		B			D			D			A	

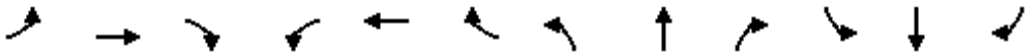
Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	593	141	595	25	150	5	420	142	20	5	154	685
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		0.95		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		1.00		1.00	0.98			1.00	0.85
Flt Protected	0.95	0.97	1.00		0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1715	1583		3501		1770	3473			3534	1583
Flt Permitted	0.63	0.69	1.00		0.89		0.64	1.00			0.95	1.00
Satd. Flow (perm)	1113	1222	1583		3121		1198	3473			3358	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	645	153	647	27	163	5	457	154	22	5	167	745
RTOR Reduction (vph)	0	0	386	0	3	0	0	13	0	0	0	387
Lane Group Flow (vph)	381	417	261	0	192	0	457	163	0	0	172	358
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)	15.7	15.7	15.7		15.7		16.0	16.0			16.0	16.0
Effective Green, g (s)	15.7	15.7	15.7		15.7		16.0	16.0			16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40		0.40		0.40	0.40			0.40	0.40
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	440	483	626		1234		482	1399			1353	637
v/s Ratio Prot								0.05				
v/s Ratio Perm	c0.34	0.34	0.16		0.06		c0.38				0.05	0.23
v/c Ratio	0.87	0.86	0.42		0.16		0.95	0.12			0.13	0.56
Uniform Delay, d1	11.0	11.0	8.7		7.7		11.4	7.4			7.5	9.1
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	16.2	14.7	0.5		0.1		28.0	0.0			0.0	1.1
Delay (s)	27.2	25.8	9.1		7.8		39.5	7.5			7.5	10.3
Level of Service	C	C	A		A		D	A			A	B
Approach Delay (s)		18.7			7.8			30.6			9.8	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	39.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

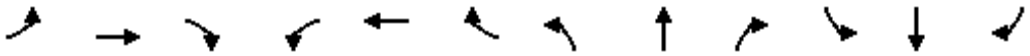
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	10	0	0	0	0	0	529	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frt					1.00						0.99	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					3539						3494	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					3539						3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	11	0	0	0	0	0	575	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	0	11	0	0	0	0	0	617	0
Turn Type					NA						NA	
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)					16.0						36.0	
Effective Green, g (s)					16.0						36.0	
Actuated g/C Ratio					0.27						0.60	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					943						2096	
v/s Ratio Prot					c0.00						c0.18	
v/s Ratio Perm												
v/c Ratio					0.01						0.29	
Uniform Delay, d1					16.2						5.8	
Progression Factor					1.32						1.00	
Incremental Delay, d2					0.0						0.4	
Delay (s)					21.3						6.2	
Level of Service					C						A	
Approach Delay (s)		0.0			21.3			0.0			6.2	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

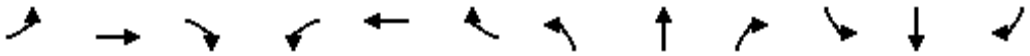


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	10	806	150	485	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.95				
Frt					0.85			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3015			3498				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3015			3498				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	11	876	163	527	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	103	0	0	49	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	784	0	0	641	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					28.0			24.0				
Effective Green, g (s)					28.0			24.0				
Actuated g/C Ratio					0.47			0.40				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1407			1399				
v/s Ratio Prot					c0.26							
v/s Ratio Perm								0.18				
v/c Ratio					1.02dr			0.46				
Uniform Delay, d1					11.5			13.2				
Progression Factor					1.00			0.66				
Incremental Delay, d2					1.6			1.0				
Delay (s)					13.1			9.7				
Level of Service					B			A				
Approach Delay (s)		0.0			13.1			9.7			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

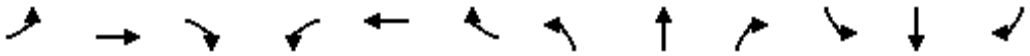
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	103	0	0	0	0	0	0	0	379	50	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									0.96	
Satd. Flow (prot)		3539									3389	
Flt Permitted		1.00									0.96	
Satd. Flow (perm)		3539									3389	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	112	0	0	0	0	0	0	0	412	54	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	192	0
Lane Group Flow (vph)	0	112	0	0	0	0	0	0	0	0	274	0
Turn Type		NA								Perm	NA	
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		20.0									32.0	
Effective Green, g (s)		20.0									32.0	
Actuated g/C Ratio		0.33									0.53	
Clearance Time (s)		4.0									4.0	
Lane Grp Cap (vph)		1179									1807	
v/s Ratio Prot		c0.03										
v/s Ratio Perm											0.08	
v/c Ratio		0.09									0.15	
Uniform Delay, d1		13.8									7.1	
Progression Factor		1.00									0.33	
Incremental Delay, d2		0.2									0.2	
Delay (s)		13.9									2.5	
Level of Service		B									A	
Approach Delay (s)		13.9			0.0			0.0			2.5	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	362	0	0	0	0	0	395	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3471						3539				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3471						3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	393	0	0	0	0	0	429	0	0	0	0
RTOR Reduction (vph)	0	145	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	504	0	0	0	0	0	429	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		26.0						26.0				
Effective Green, g (s)		26.0						26.0				
Actuated g/C Ratio		0.43						0.43				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1504						1533				
v/s Ratio Prot								c0.12				
v/s Ratio Perm		0.15										
v/c Ratio		0.33						0.28				
Uniform Delay, d1		11.3						11.0				
Progression Factor		0.60						1.00				
Incremental Delay, d2		0.6						0.5				
Delay (s)		7.3						11.4				
Level of Service		A						B				
Approach Delay (s)		7.3			0.0			11.4			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

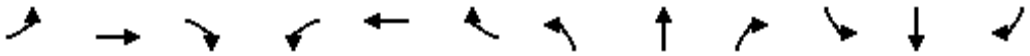
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Yield	Yield	
Volume (vph)	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0

Direction, Lane #	WB 1	NB 1
Volume Total (vph)	0	0
Volume Left (vph)	0	0
Volume Right (vph)	0	0
Hadj (s)	0.00	0.00
Departure Headway (s)	3.9	3.9
Degree Utilization, x	0.00	0.00
Capacity (veh/h)	917	917
Control Delay (s)	6.9	6.9
Approach Delay (s)	0.0	0.0
Approach LOS	A	A

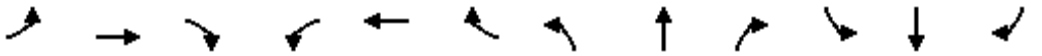
Intersection Summary				
Delay	0.0			
Level of Service	A			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			0	0	0	0	0	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			0	0	0	0	0	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1623			1623			1023	896	1085	1023	896	1085

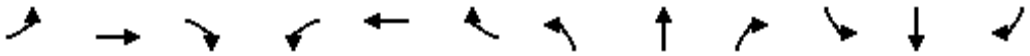
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	0	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							A	A
Approach Delay (s)	0.0			0.0			0.0	0.0
Approach LOS							A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	0.0%	ICU Level of Service		A
Analysis Period (min)	15			



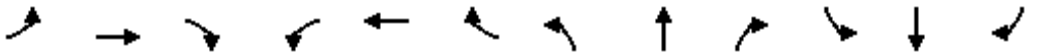
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1274	345	1459	1458	0	0	0	0	1286	5	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	5.3
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1300	352	1489	1488	0	0	0	0	1312	5	842
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	268
Lane Group Flow (vph)	0	1300	244	1489	1488	0	0	0	0	656	661	574
Turn Type			Perm	Prot						Perm		custom
Protected Phases		2		1	6						4	
Permitted Phases			2							4		6
Actuated Green, G (s)		38.1	38.1	33.8	75.7					34.4	34.4	75.7
Effective Green, g (s)		38.1	38.1	33.8	75.7					34.4	34.4	75.7
Actuated g/C Ratio		0.32	0.32	0.28	0.63					0.29	0.29	0.63
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	5.3
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1124	503	967	2233					482	483	999
v/s Ratio Prot		c0.37		c0.43	0.42							
v/s Ratio Perm			0.15							0.39	0.39	0.36
v/c Ratio		1.16	0.49	1.54	0.67					1.36	1.37	0.57
Uniform Delay, d1		41.0	33.0	43.1	14.1					42.8	42.8	12.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		80.8	0.7	248.1	0.8					175.5	178.7	0.8
Delay (s)		121.7	33.8	291.2	14.9					218.3	221.5	13.6
Level of Service		F	C	F	B					F	F	B
Approach Delay (s)		103.0			153.1			0.0			139.5	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM Average Control Delay	136.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	192.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



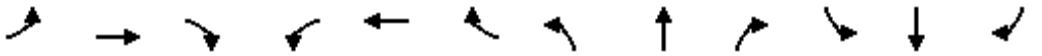
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	455	2110	0	0	2302	756	625	5	1016	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	3433	3539			3374	1441	1681	1464	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	3433	3539			3374	1441	1681	1464	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	464	2153	0	0	2349	771	638	5	1037	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	182	0	8	8	0	0	0
Lane Group Flow (vph)	464	2153	0	0	2424	512	574	548	542	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	11.8	77.7			61.7	61.7	32.4	32.4	32.4			
Effective Green, g (s)	11.8	77.7			61.7	61.7	32.4	32.4	32.4			
Actuated g/C Ratio	0.10	0.65			0.51	0.51	0.27	0.27	0.27			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	338	2292			1735	741	454	395	406			
v/s Ratio Prot	c0.14	0.61			c0.72							
v/s Ratio Perm						0.36	0.34	0.37	0.36			
v/c Ratio	1.37	0.94			1.40	0.69	1.26	1.39	1.33			
Uniform Delay, d1	54.1	19.0			29.1	22.0	43.8	43.8	43.8			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	185.5	8.3			182.3	2.8	135.6	189.3	166.7			
Delay (s)	239.6	27.3			211.4	24.7	179.4	233.1	210.5			
Level of Service	F	C			F	C	F	F	F			
Approach Delay (s)		65.0			169.9			207.3			0.0	
Approach LOS		E			F			F			A	

Intersection Summary			
HCM Average Control Delay	141.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	192.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



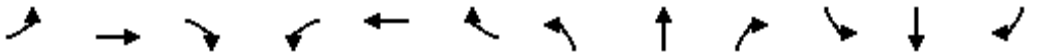
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	2492	75	237	2513	265	55	224	431	105	166	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5063		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5063		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	297	2596	78	247	2618	276	57	233	449	109	173	255
RTOR Reduction (vph)	0	2	0	0	0	49	0	0	180	0	0	201
Lane Group Flow (vph)	297	2672	0	247	2618	227	57	233	269	109	173	54
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	24.8	74.6		20.8	70.2	70.2	7.2	27.5	27.5	8.5	28.8	28.8
Effective Green, g (s)	24.8	74.6		20.8	70.2	70.2	7.2	27.5	27.5	8.5	28.8	28.8
Actuated g/C Ratio	0.17	0.50		0.14	0.47	0.47	0.05	0.18	0.18	0.06	0.19	0.19
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	293	2518		245	2380	741	85	342	290	100	358	304
v/s Ratio Prot	c0.17	c0.53		0.14	0.51		0.03	0.13		c0.06	0.09	
v/s Ratio Perm						0.14			c0.17			0.03
v/c Ratio	1.01	1.06		1.01	1.10	0.31	0.67	0.68	0.93	1.09	0.48	0.18
Uniform Delay, d1	62.6	37.7		64.6	39.9	24.8	70.2	57.2	60.2	70.8	54.0	50.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.1	36.8		59.6	52.2	1.1	15.1	5.5	33.7	116.4	1.0	0.3
Delay (s)	118.7	74.5		124.2	92.1	25.8	85.3	62.7	93.9	187.1	55.0	51.0
Level of Service	F	E		F	F	C	F	E	F	F	E	D
Approach Delay (s)		78.9			88.8			83.4			79.9	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	83.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



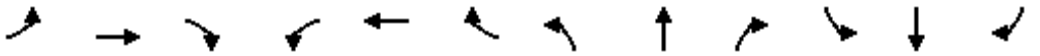
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	538	2446	0	0	1953	465	0	0	0	678	0	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2			7.2	7.2				4.0		5.0
Lane Util. Factor	0.97	0.91			0.91	0.88				0.97		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	3433	5085			5085	2787				3433		1583
Flt Permitted	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)	3433	5085			5085	2787				3433		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	560	2548	0	0	2034	484	0	0	0	706	0	682
RTOR Reduction (vph)	0	0	0	0	0	109	0	0	0	0	0	184
Lane Group Flow (vph)	560	2548	0	0	2034	375	0	0	0	706	0	498
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Prot		Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases			2			6	8		8			4
Actuated Green, G (s)	24.0	88.8			60.8	60.8				48.8		47.8
Effective Green, g (s)	24.0	88.8			60.8	60.8				48.8		47.8
Actuated g/C Ratio	0.16	0.60			0.41	0.41				0.33		0.32
Clearance Time (s)	4.0	7.2			7.2	7.2				4.0		5.0
Vehicle Extension (s)	2.0	5.2			5.2	5.2				2.0		3.5
Lane Grp Cap (vph)	554	3035			2078	1139				1126		509
v/s Ratio Prot	c0.16	0.50			c0.40					0.21		
v/s Ratio Perm						0.13						c0.31
v/c Ratio	1.01	0.84			0.98	0.33				0.63		0.98
Uniform Delay, d1	62.4	24.2			43.4	30.1				42.3		50.0
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	41.0	2.5			15.1	0.4				0.8		34.1
Delay (s)	103.4	26.7			58.4	30.4				43.1		84.1
Level of Service	F	C			E	C				D		F
Approach Delay (s)		40.5			53.1			0.0			63.2	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	148.8	Sum of lost time (s)	16.2
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1204	768	183	912	125	571	791	327	195	658	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	385	1254	800	191	950	130	595	824	341	203	685	241
RTOR Reduction (vph)	0	0	280	0	0	60	0	0	136	0	0	167
Lane Group Flow (vph)	385	1254	520	191	950	70	595	824	205	203	685	74
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.1	47.7	47.7	11.1	39.7	39.7	27.8	45.9	45.9	12.2	30.3	30.3
Effective Green, g (s)	19.1	47.7	47.7	11.1	39.7	39.7	27.8	45.9	45.9	12.2	30.3	30.3
Actuated g/C Ratio	0.14	0.35	0.35	0.08	0.29	0.29	0.20	0.33	0.33	0.09	0.22	0.22
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	3.5	2.5	4.4	4.4
Lane Grp Cap (vph)	477	1763	966	277	1467	457	694	1696	528	304	1120	614
v/s Ratio Prot	c0.11	c0.25		0.06	0.19		c0.17	0.16		0.06	c0.13	
v/s Ratio Perm			0.19			0.04			0.13			0.03
v/c Ratio	0.81	0.71	0.54	0.69	0.65	0.15	0.86	0.49	0.39	0.67	0.61	0.12
Uniform Delay, d1	57.5	39.0	36.1	61.6	42.8	36.4	53.0	36.5	35.1	60.7	48.3	43.0
Progression 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
Incremental Delay, d2	9.4	1.8	1.1	6.4	1.4	0.4	10.1	0.3	0.6	4.9	1.3	0.1
Delay (s)	66.9	40.7	37.2	68.0	44.2	36.8	63.1	36.7	35.7	65.7	49.6	43.1
Level of Service	E	D	D	E	D	D	E	D	D	E	D	D
Approach Delay (s)		43.7			47.0			45.4			51.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	137.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

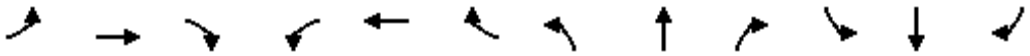


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	110	145	77	85	185	150	1409	227	302	1223	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1704		1770	1863	1583	1770	4979		1770	5036	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1704		1770	1863	1583	1770	4979		1770	5036	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	116	153	81	89	195	158	1483	239	318	1287	89
RTOR Reduction (vph)	0	46	0	0	0	164	0	17	0	0	5	0
Lane Group Flow (vph)	100	223	0	81	89	31	158	1705	0	318	1371	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	7.3	17.7		6.3	16.7	16.7	13.0	38.6		21.6	47.3	
Effective Green, g (s)	7.3	17.7		6.3	16.7	16.7	13.0	38.6		21.6	47.3	
Actuated g/C Ratio	0.07	0.17		0.06	0.16	0.16	0.13	0.37		0.21	0.46	
Clearance Time (s)	4.5	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	125	291		108	300	255	222	1853		369	2297	
v/s Ratio Prot	c0.06	c0.13		0.05	0.05		0.09	c0.34		c0.18	0.27	
v/s Ratio Perm						0.02						
v/c Ratio	0.80	0.77		0.75	0.30	0.12	0.71	0.92		0.86	0.60	
Uniform Delay, d1	47.5	41.0		47.9	38.3	37.2	43.6	31.1		39.6	21.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.5	10.4		22.5	1.2	0.5	8.6	8.4		18.1	0.6	
Delay (s)	77.0	51.4		70.4	39.5	37.7	52.2	39.4		57.7	21.7	
Level of Service	E	D		E	D	D	D	D		E	C	
Approach Delay (s)		58.4			45.4			40.5			28.5	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	941	415	280	740	521	129	735	150	493	682	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total 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
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3377		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3377		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	991	437	295	779	548	136	774	158	519	718	284
RTOR Reduction (vph)	0	39	0	0	0	43	0	0	129	0	0	201
Lane Group Flow (vph)	453	1389	0	295	779	505	136	774	29	519	718	83
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	32.4	56.4		12.4	36.4	56.2	13.6	23.4	23.4	19.8	29.6	29.6
Effective Green, g (s)	32.4	56.4		12.4	36.4	56.2	13.6	23.4	23.4	19.8	29.6	29.6
Actuated g/C Ratio	0.25	0.44		0.10	0.28	0.44	0.11	0.18	0.18	0.15	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	5.5	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	448	1487		332	1006	744	188	929	289	531	1175	366
v/s Ratio Prot	c0.26	c0.41		0.09	0.22	0.10	0.08	c0.15		c0.15	0.14	
v/s Ratio Perm						0.21			0.02			0.05
v/c Ratio	1.01	0.93		0.89	0.77	0.68	0.72	0.83	0.10	0.98	0.61	0.23
Uniform Delay, d1	47.8	34.0		57.1	42.0	28.7	55.4	50.4	43.5	53.9	44.0	39.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.3	10.9		23.2	4.6	2.0	11.0	7.3	0.4	32.8	1.5	0.7
Delay (s)	93.1	45.0		80.3	46.6	30.6	66.4	57.7	43.9	86.7	45.5	40.6
Level of Service	F	D		F	D	C	E	E	D	F	D	D
Approach Delay (s)		56.6			47.4			56.8			58.6	
Approach LOS		E			D			E			E	

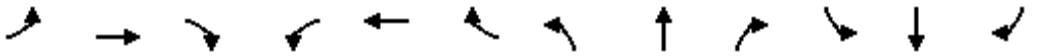
Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1429	246	0	1668	85	0	0	0	145	146	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	1.00	
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1762	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1762	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1520	262	0	1774	90	0	0	0	154	155	0
RTOR Reduction (vph)	0	0	79	0	0	23	0	0	0	0	0	0
Lane Group Flow (vph)	0	1520	183	0	1774	67	0	0	0	139	170	0
Turn Type			Perm			Perm				Perm		
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		53.2	53.2		59.2	59.2				20.5	20.5	
Effective Green, g (s)		53.2	53.2		59.2	59.2				20.5	20.5	
Actuated g/C Ratio		0.35	0.35		0.39	0.39				0.14	0.14	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Grp Cap (vph)		1803	561		2007	625				230	241	
v/s Ratio Prot		c0.30			c0.35							
v/s Ratio Perm			0.12			0.04				0.08	0.10	
v/c Ratio		0.84	0.33		0.88	0.11				0.60	0.71	
Uniform Delay, d1		44.6	35.3		42.2	28.7				60.9	61.9	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		5.0	1.5		6.1	0.3				11.2	16.0	
Delay (s)		49.6	36.9		48.3	29.0				72.2	77.8	
Level of Service		D	D		D	C				E	E	
Approach Delay (s)		47.7			47.4			0.0			75.3	
Approach LOS		D			D			A			E	

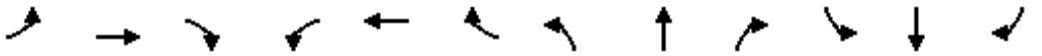
Intersection Summary			
HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1434	140	0	1539	115	195	0	115	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.94				
Flt Protected		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (prot)		5085	1583		5085	1583		3240				
Flt Permitted		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (perm)		5085	1583		5085	1583		3240				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1542	151	0	1655	124	210	0	124	0	0	0
RTOR Reduction (vph)	0	0	30	0	0	23	0	44	0	0	0	0
Lane Group Flow (vph)	0	1542	121	0	1655	101	0	290	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		101.3	101.3		101.3	101.3		16.8				
Effective Green, g (s)		101.3	101.3		101.3	101.3		16.8				
Actuated g/C Ratio		0.78	0.78		0.78	0.78		0.13				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Vehicle Extension (s)		5.0	5.0		5.0	5.0		3.2				
Lane Grp Cap (vph)		3981	1239		3981	1239		421				
v/s Ratio Prot		0.30			c0.33							
v/s Ratio Perm			0.08			0.06		0.09				
v/c Ratio		0.39	0.10		0.42	0.08		0.69				
Uniform Delay, d1		4.4	3.3		4.5	3.3		53.8				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.3	0.2		0.1	0.1		4.7				
Delay (s)		4.7	3.5		4.7	3.3		58.5				
Level of Service		A	A		A	A		E				
Approach Delay (s)		4.6			4.6			58.5			0.0	
Approach LOS		A			A			E			A	

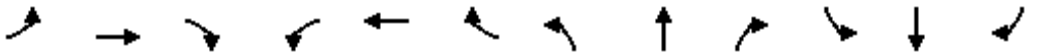
Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	129.4	Sum of lost time (s)	11.3
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	2	0	25	2	35	0	940	0	25	1317	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.91		1.00	0.95	1.00
Frt	1.00	1.00		1.00	0.86			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863		1770	1597			5085		1770	3539	1583
Flt Permitted	0.73	1.00		0.76	1.00			1.00		0.25	1.00	1.00
Satd. Flow (perm)	1362	1863		1409	1597			5085		468	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	2	0	27	2	38	0	1022	0	27	1432	37
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	0	0	0	15
Lane Group Flow (vph)	37	2	0	27	12	0	0	1022	0	27	1432	22
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.0	16.0		16.0	16.0			36.0		36.0	36.0	36.0
Effective Green, g (s)	16.0	16.0		16.0	16.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.27	0.27		0.27	0.27			0.60		0.60	0.60	0.60
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	363	497		376	426			3051		281	2123	950
v/s Ratio Prot		0.00			0.01			0.20			c0.40	
v/s Ratio Perm	c0.03			0.02						0.06		0.01
v/c Ratio	0.10	0.00		0.07	0.03			0.33		0.10	0.67	0.02
Uniform Delay, d1	16.6	16.2		16.4	16.3			6.0		5.1	8.1	4.9
Progression Factor	1.00	1.00		1.00	1.00			0.82		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0		0.4	0.1			0.3		0.7	1.7	0.0
Delay (s)	17.1	16.2		16.8	16.4			5.2		5.8	9.8	4.9
Level of Service	B	B		B	B			A		A	A	A
Approach Delay (s)		17.1			16.6			5.2			9.6	
Approach LOS		B			B			A			A	

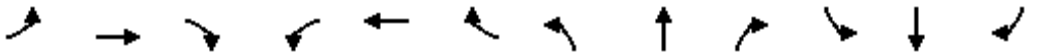
Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



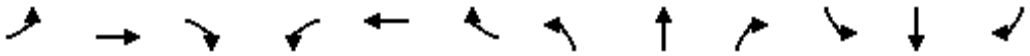
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1276	545	611	941	0	0	0	0	1187	5	727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1357	580	650	1001	0	0	0	0	1263	5	773
RTOR Reduction (vph)	0	0	294	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1357	286	650	1001	0	0	0	0	631	637	732
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		26.0	26.0	19.0	49.0					43.0	43.0	43.0
Effective Green, g (s)		26.0	26.0	19.0	49.0					43.0	43.0	43.0
Actuated g/C Ratio		0.26	0.26	0.19	0.49					0.43	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1322	412	652	1734					723	725	681
v/s Ratio Prot		c0.27		c0.19	0.28							
v/s Ratio Perm			0.18							0.38	0.38	c0.46
v/c Ratio		1.03	0.69	1.00	0.58					0.87	0.88	1.07
Uniform Delay, d1		37.0	33.4	40.5	18.1					26.0	26.1	28.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		31.7	5.0	34.2	0.5					11.3	11.7	56.4
Delay (s)		68.7	38.4	74.7	18.6					37.3	37.8	84.9
Level of Service		E	D	E	B					D	D	F
Approach Delay (s)		59.7			40.7			0.0			55.5	
Approach LOS		E			D			A			E	

Intersection Summary			
HCM Average Control Delay	52.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	148.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	501	1968	0	0	1077	1324	475	0	682	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1770	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1770	2787			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	522	2050	0	0	1122	1379	495	0	710	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	797	0	0	12	0	0	0
Lane Group Flow (vph)	522	2050	0	0	1122	582	0	495	698	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	30.4	60.1			25.7	25.7		30.9	30.9			
Effective Green, g (s)	30.4	60.1			25.7	25.7		30.9	30.9			
Actuated g/C Ratio	0.31	0.61			0.26	0.26		0.31	0.31			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	544	2148			1320	723		552	870			
v/s Ratio Prot	0.29	c0.58			0.22							
v/s Ratio Perm						0.21		0.28	0.25			
v/c Ratio	0.96	0.95			0.85	0.80		0.90	0.80			
Uniform Delay, d1	33.7	18.2			34.8	34.3		32.5	31.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	28.3	10.6			5.3	6.5		17.1	5.4			
Delay (s)	62.0	28.8			40.1	40.8		49.6	36.6			
Level of Service	E	C			D	D		D	D			
Approach Delay (s)		35.5			40.5			42.0			0.0	
Approach LOS		D			D			D			A	

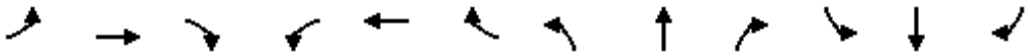
Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	148.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	30	0	0	0	0	0	1117	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frt					1.00						0.99	
Flt Protected					1.00						1.00	
Satd. Flow (prot)					3539						3504	
Flt Permitted					1.00						1.00	
Satd. Flow (perm)					3539						3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	33	0	0	0	0	0	1214	87
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	0	33	0	0	0	0	0	1292	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)					16.0						36.0	
Effective Green, g (s)					16.0						36.0	
Actuated g/C Ratio					0.27						0.60	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					944						2102	
v/s Ratio Prot					c0.01						c0.37	
v/s Ratio Perm												
v/c Ratio					0.03						0.61	
Uniform Delay, d1					16.3						7.6	
Progression Factor					1.20						0.15	
Incremental Delay, d2					0.1						1.0	
Delay (s)					19.6						2.1	
Level of Service					B						A	
Approach Delay (s)		0.0			19.6			0.0			2.1	
Approach LOS		A			B			A			A	

Intersection Summary					
HCM Average Control Delay	2.6	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.44				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	43.4%	ICU Level of Service		A	
Analysis Period (min)	15				

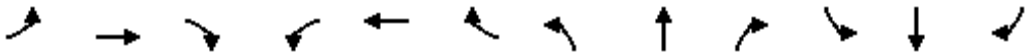
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	30	540	150	350	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.95				
Frt					0.86			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					3037			3487				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					3037			3487				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	33	587	163	380	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	184	0	0	79	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	436	0	0	464	0	0	0	0
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Actuated Green, G (s)					27.0			25.0				
Effective Green, g (s)					27.0			25.0				
Actuated g/C Ratio					0.45			0.42				
Clearance Time (s)					4.0			4.0				
Lane Grp Cap (vph)					1367			1453				
v/s Ratio Prot					c0.14							
v/s Ratio Perm								0.13				
v/c Ratio					0.32			0.32				
Uniform Delay, d1					10.6			11.8				
Progression Factor					1.00			0.73				
Incremental Delay, d2					0.6			0.5				
Delay (s)					11.2			9.1				
Level of Service					B			A				
Approach Delay (s)		0.0			11.2			9.1			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

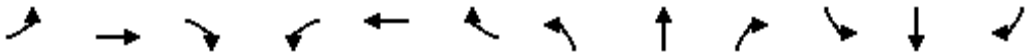
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	61	0	0	0	0	0	0	0	857	180	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									0.96	
Satd. Flow (prot)		3539									3399	
Flt Permitted		1.00									0.96	
Satd. Flow (perm)		3539									3399	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	66	0	0	0	0	0	0	0	932	196	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	319	0
Lane Group Flow (vph)	0	66	0	0	0	0	0	0	0	0	809	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		16.0									36.0	
Effective Green, g (s)		16.0									36.0	
Actuated g/C Ratio		0.27									0.60	
Clearance Time (s)		4.0									4.0	
Lane Grp Cap (vph)		944									2039	
v/s Ratio Prot		c0.02										
v/s Ratio Perm											0.24	
v/c Ratio		0.07									0.40	
Uniform Delay, d1		16.4									6.3	
Progression Factor		1.00									0.22	
Incremental Delay, d2		0.1									0.5	
Delay (s)		16.6									1.9	
Level of Service		B									A	
Approach Delay (s)		16.6			0.0			0.0			1.9	
Approach LOS		B			A			A			A	

Intersection Summary				
HCM Average Control Delay	2.7	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.30			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

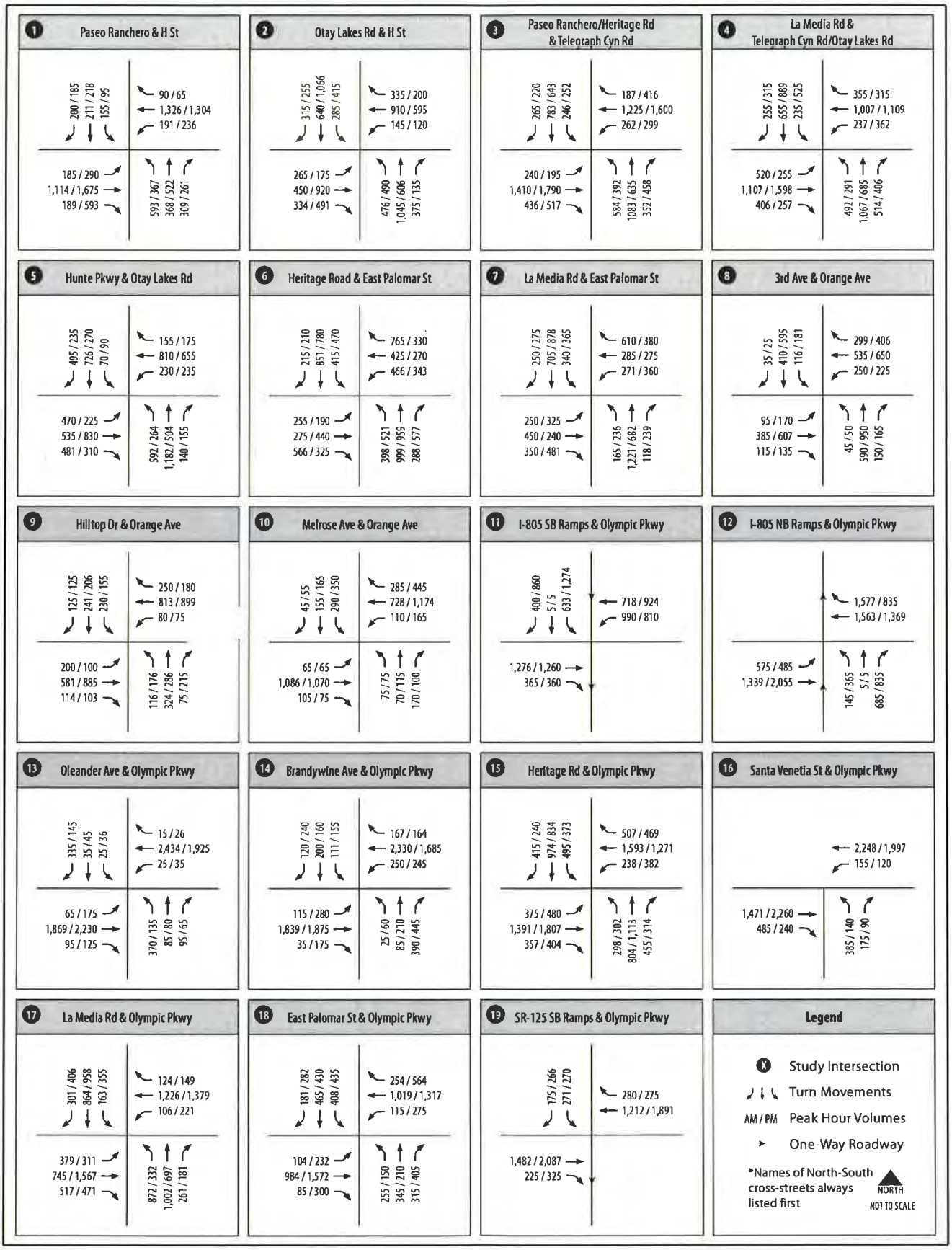


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	768	0	0	0	0	0	350	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frt		1.00						1.00				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3485						3539				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3485						3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	835	0	0	0	0	0	380	0	0	0	0
RTOR Reduction (vph)	0	88	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1127	0	0	0	0	0	380	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		32.0						20.0				
Effective Green, g (s)		32.0						20.0				
Actuated g/C Ratio		0.53						0.33				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1859						1180				
v/s Ratio Prot								c0.11				
v/s Ratio Perm		0.32										
v/c Ratio		0.61						0.32				
Uniform Delay, d1		9.7						14.9				
Progression Factor		0.33						1.00				
Incremental Delay, d2		1.4						0.7				
Delay (s)		4.5						15.7				
Level of Service		A						B				
Approach Delay (s)		4.5			0.0			15.7			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

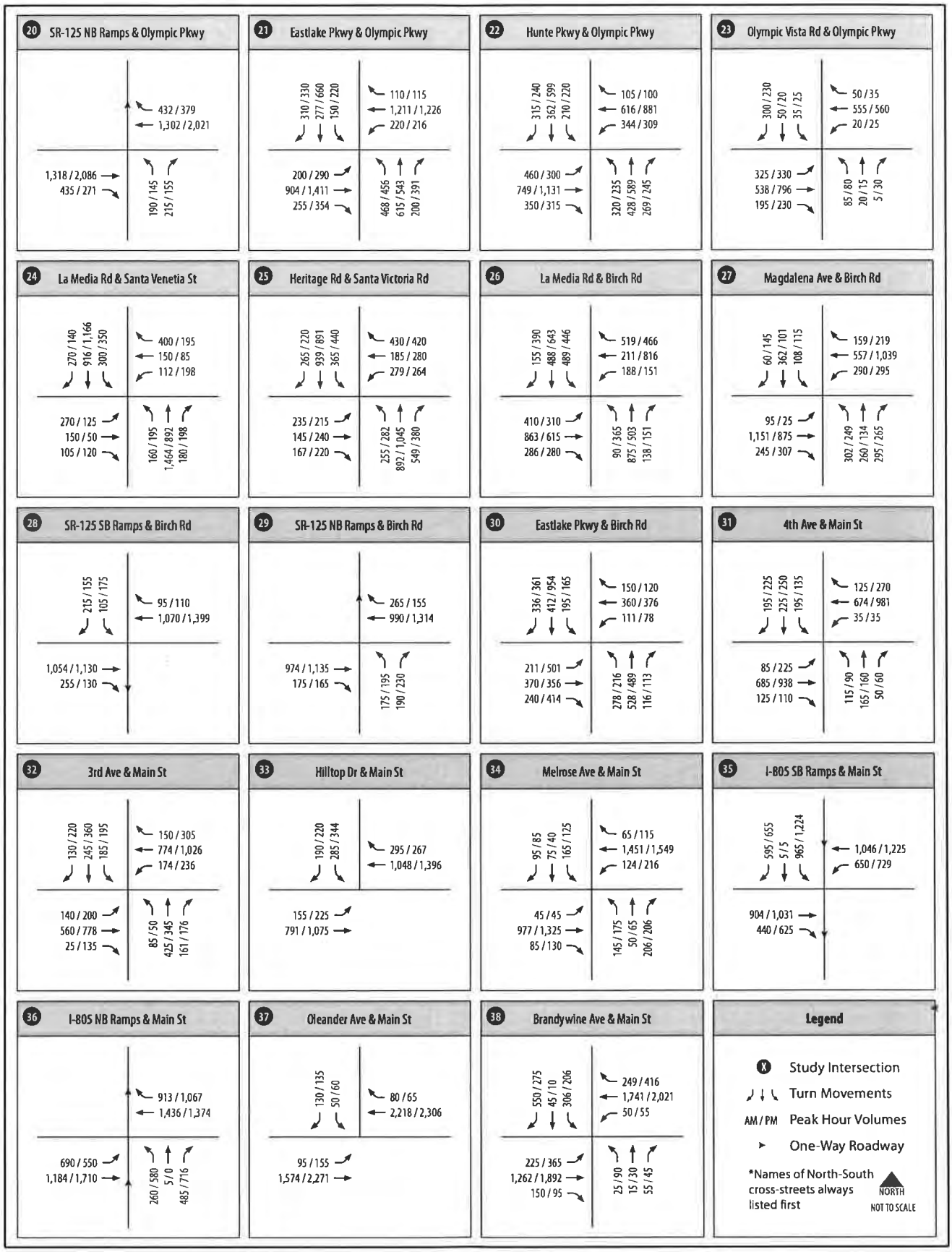
APPENDIX E: YEAR 2030 BACKGROUND INFORMATION (CHEN RYAN STUDY, 2014)



University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10
CHEN RYAN

Figure 9-2A

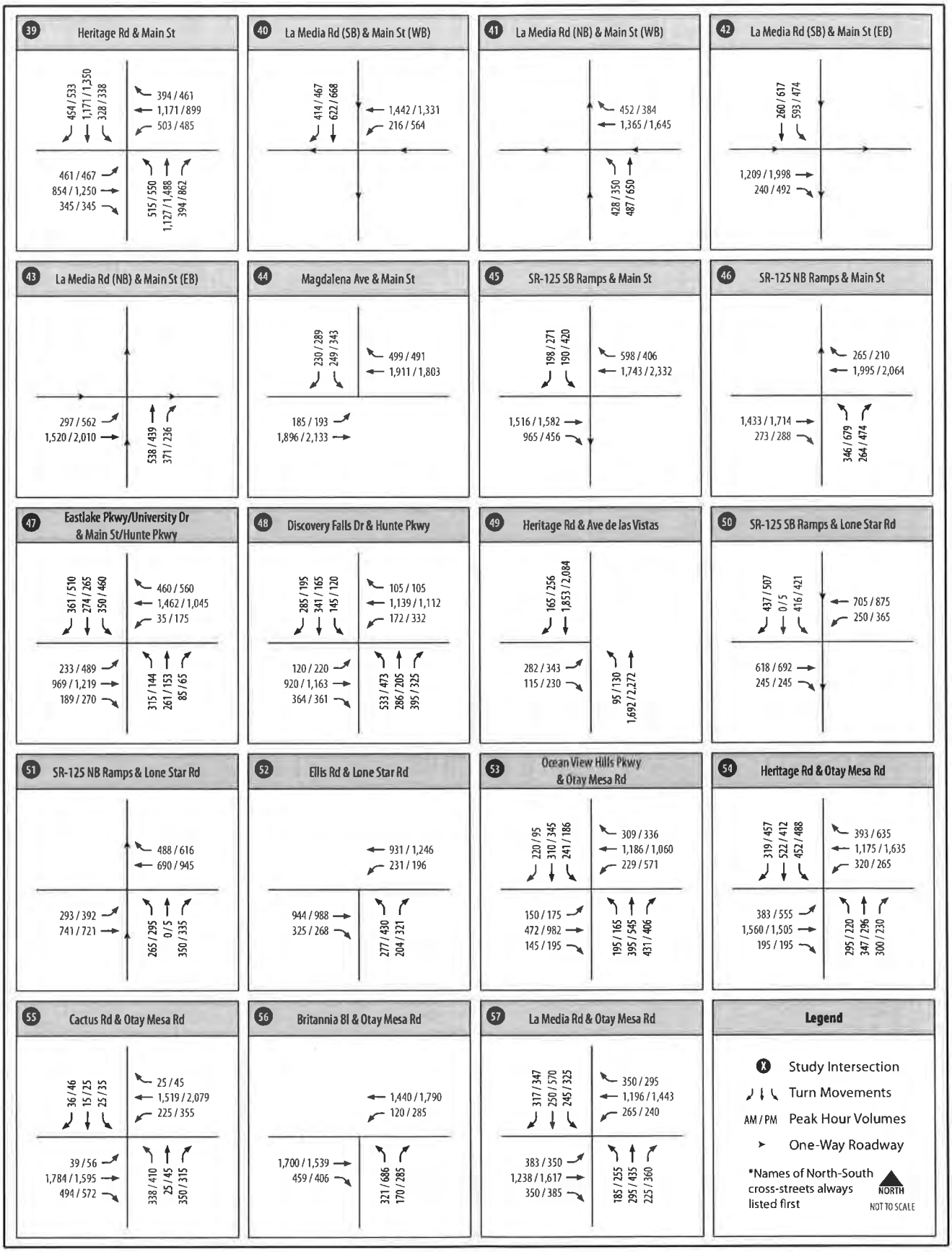
Intersection Peak Hour Traffic Volumes - Year 2030 Base Plus Project Conditions (Study Intersections 1-19)



University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10
CHEN RYAN

Figure 9-2A

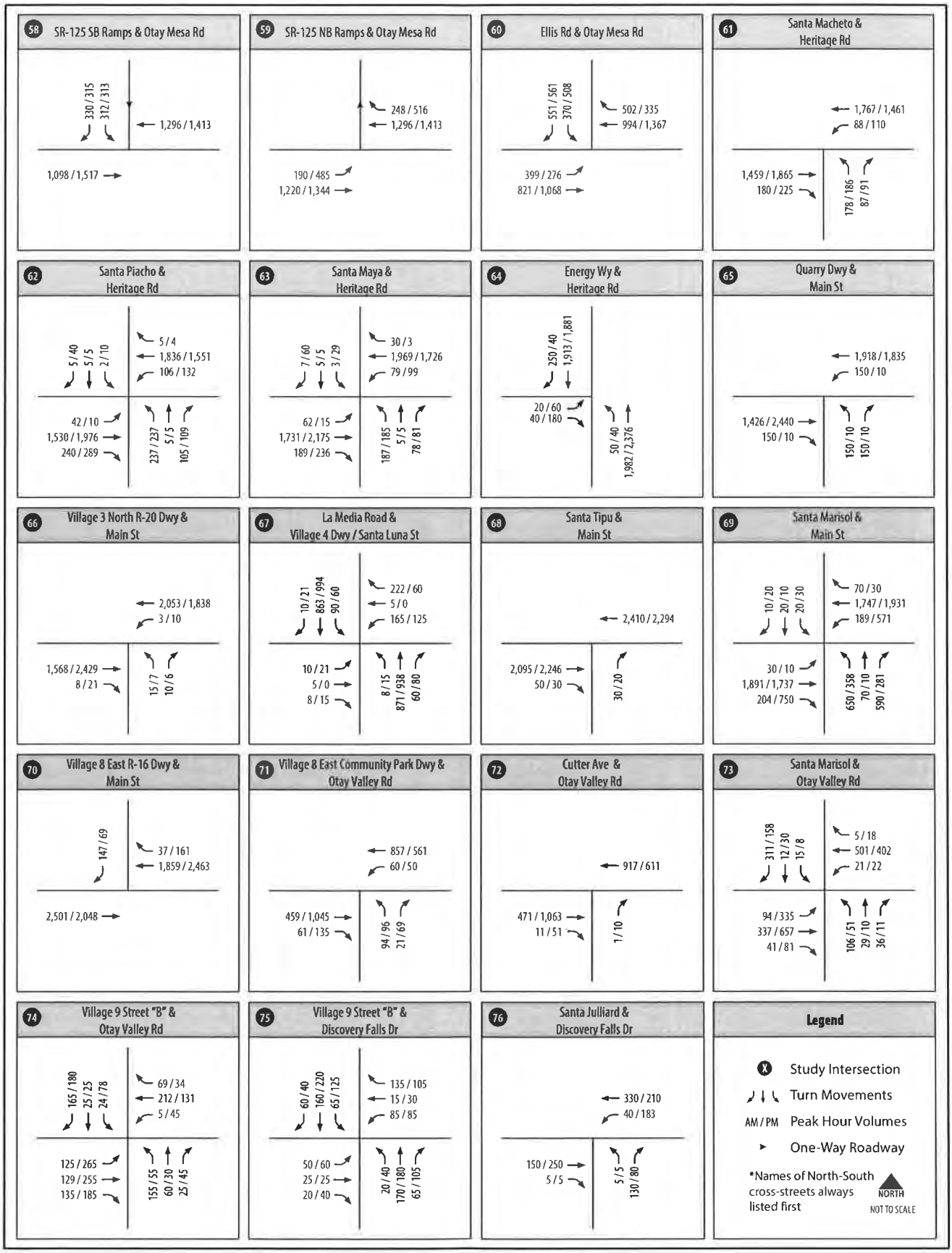
Intersection Peak Hour Traffic Volumes -
Year 2030 Base Plus Project Conditions (Study Intersections 20-38)



University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10
CHEN RYAN

Figure 9-2A

Intersection Peak Hour Traffic Volumes - Year 2030 Base Plus Project Conditions (Study Intersections 39-57)

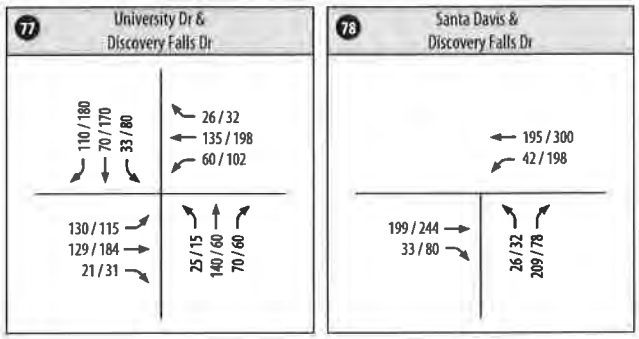


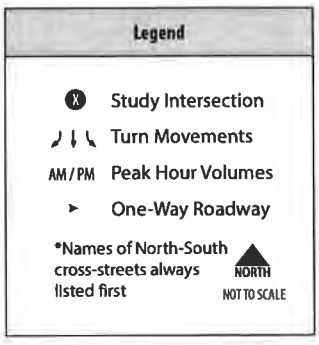
University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10

CHEN RYAN

Figure 9-2A

Intersection Peak Hour Traffic Volumes - Year 2030 Base Plus Project Conditions (Study Intersections 58-76)

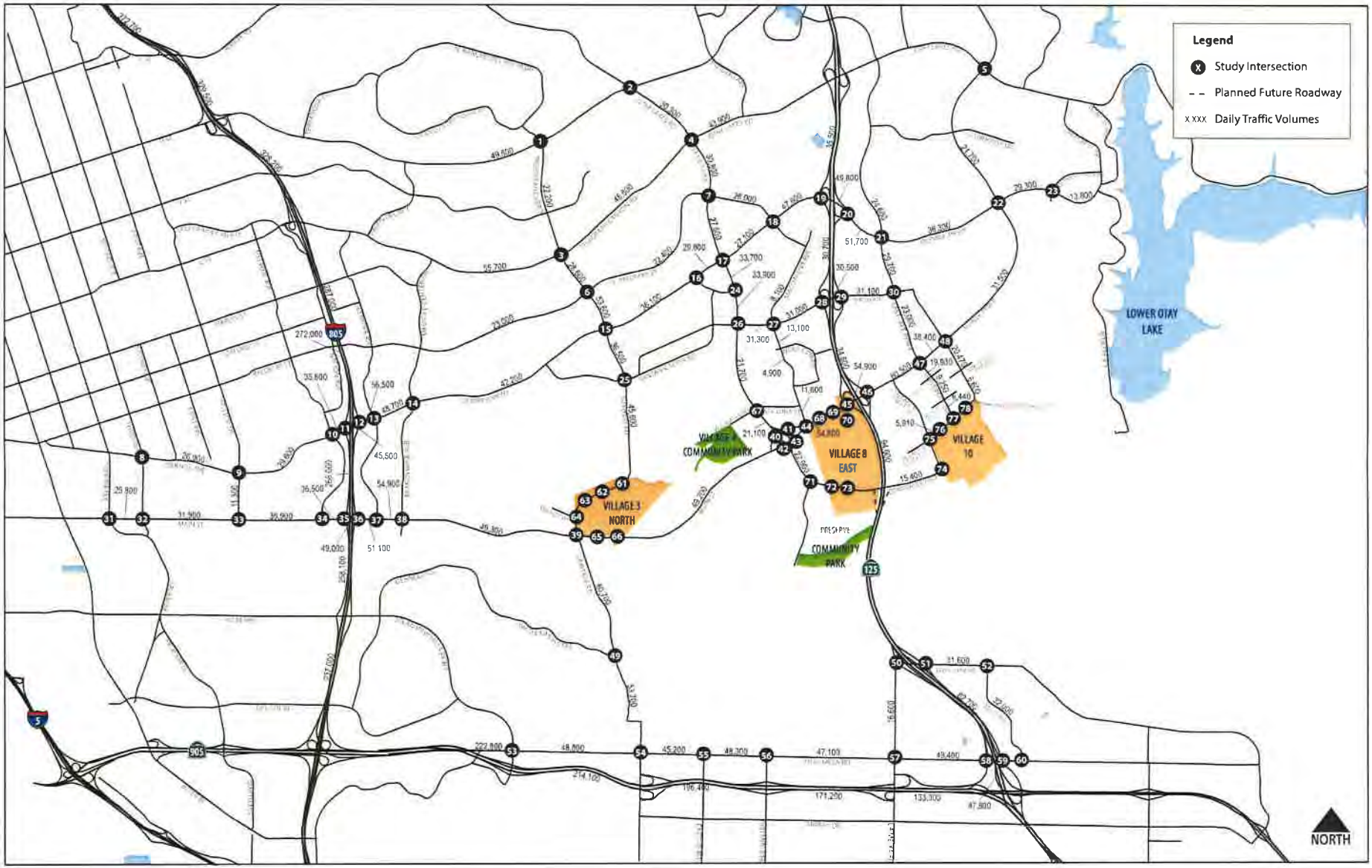




University Villages TIA,
Otay Ranch Villages 3 North, 8 East and 10
CHEN RYAN

Figure 9-2A

Intersection Peak Hour Traffic Volumes -
Year 2030 Base Plus Project Conditions (Study Intersections 77-78)



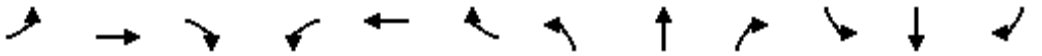
University Villages TIA, Otay Ranch Villages 3 North, 8 East and 10

Figure 9-2B

Roadway Average Daily Traffic Volumes - Future Year 2030 Base + Project Conditions

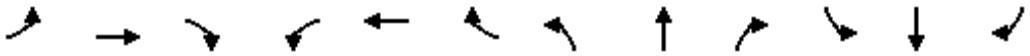
CHEN RYAN

APPENDIX F: YEAR 2030 LEVEL OF SERVICE WORKSHEETS



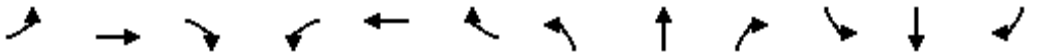
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1276	365	990	718	0	0	0	0	633	5	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1302	372	1010	733	0	0	0	0	646	5	408
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	0	0	0	229
Lane Group Flow (vph)	0	1302	258	1010	733	0	0	0	0	323	328	179
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		46.1	46.1	35.8	85.7					24.4	24.4	24.4
Effective Green, g (s)		46.1	46.1	35.8	85.7					24.4	24.4	24.4
Actuated g/C Ratio		0.38	0.38	0.30	0.71					0.20	0.20	0.20
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1360	608	1024	2527					342	343	322
v/s Ratio Prot		c0.37		c0.29	0.21							
v/s Ratio Perm			0.16							0.19	0.19	0.11
v/c Ratio		0.96	0.42	0.99	0.29					0.94	0.96	0.56
Uniform Delay, d1		36.0	27.2	41.9	6.2					47.1	47.3	42.9
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		15.2	0.5	24.6	0.1					34.2	36.8	2.1
Delay (s)		51.2	27.7	66.4	6.2					81.3	84.1	45.0
Level of Service		D	C	E	A					F	F	D
Approach Delay (s)		46.0			41.1			0.0			68.2	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



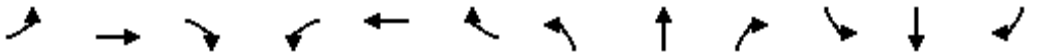
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	575	1339	0	0	1563	1577	145	5	685	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	5.3			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.96	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3247	1441	1681	1452	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3247	1441	1681	1452	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	587	1366	0	0	1595	1609	148	5	699	0	0	0
RTOR Reduction (vph)	0	0	0	0	32	247	0	81	90	0	0	0
Lane Group Flow (vph)	587	1366	0	0	2191	734	133	282	266	0	0	0
Turn Type	Prot					Perm	Perm		custom			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		2			
Actuated Green, G (s)	16.8	89.7			68.7	68.7	20.4	20.4	89.7			
Effective Green, g (s)	16.8	89.7			68.7	68.7	20.4	20.4	89.7			
Actuated g/C Ratio	0.14	0.75			0.57	0.57	0.17	0.17	0.75			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	5.3			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	481	2645			1859	825	286	247	1124			
v/s Ratio Prot	c0.17	0.39			c0.67							
v/s Ratio Perm						0.51	0.08	0.19	0.18			
v/c Ratio	1.22	0.52			1.18	0.89	0.47	1.14	0.24			
Uniform Delay, d1	51.6	6.2			25.6	22.3	44.9	49.8	4.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	116.8	0.2			86.4	11.5	1.2	101.6	0.1			
Delay (s)	168.4	6.4			112.0	33.9	46.1	151.4	4.8			
Level of Service	F	A			F	C	D	F	A			
Approach Delay (s)		55.1			88.1			73.7			0.0	
Approach LOS		E			F			E			A	

Intersection Summary			
HCM Average Control Delay	75.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



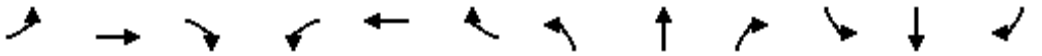
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	1839	35	250	2330	167	25	85	390	111	200	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5071		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5071		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	117	1877	36	255	2378	170	26	87	398	113	204	122
RTOR Reduction (vph)	0	1	0	0	0	30	0	0	253	0	0	98
Lane Group Flow (vph)	117	1912	0	255	2378	140	26	87	145	113	204	24
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	11.8	67.4		23.3	78.5	78.5	3.1	18.6	18.6	11.4	26.9	26.9
Effective Green, g (s)	11.8	67.4		23.3	78.5	78.5	3.1	18.6	18.6	11.4	26.9	26.9
Actuated g/C Ratio	0.08	0.48		0.17	0.56	0.56	0.02	0.13	0.13	0.08	0.19	0.19
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	5.3
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	150	2454		296	2866	892	39	249	211	145	360	306
v/s Ratio Prot	0.07	0.38		c0.14	c0.47		0.01	0.05		c0.06	0.11	
v/s Ratio Perm						0.09			c0.09			0.01
v/c Ratio	0.78	0.78		0.86	0.83	0.16	0.67	0.35	0.69	0.78	0.57	0.08
Uniform Delay, d1	62.5	29.8		56.4	24.9	14.6	67.6	54.9	57.6	62.7	50.9	46.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	2.0		21.6	2.4	0.2	28.5	0.9	8.9	21.0	2.0	0.1
Delay (s)	84.4	31.8		78.0	27.4	14.8	96.1	55.7	66.5	83.7	53.0	46.1
Level of Service	F	C		E	C	B	F	E	E	F	D	D
Approach Delay (s)		34.8			31.2			66.2			59.0	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	139.3	Sum of lost time (s)	12.3
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



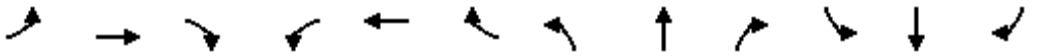
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	1391	357	238	1493	507	298	804	455	495	974	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	7.2	7.2	4.0	7.2	5.0	4.0	5.0	5.0	4.0	5.0	7.2
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	383	1419	364	243	1523	517	304	820	464	505	994	423
RTOR Reduction (vph)	0	0	125	0	0	168	0	0	130	0	0	208
Lane Group Flow (vph)	383	1419	239	243	1523	349	304	820	334	505	994	215
Turn Type	Prot		Perm	Prot		custom	Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			8			8			6
Actuated Green, G (s)	15.0	49.5	49.5	11.7	46.2	36.0	16.2	36.0	36.0	21.5	41.3	46.2
Effective Green, g (s)	15.0	49.5	49.5	11.7	46.2	36.0	16.2	36.0	36.0	21.5	41.3	46.2
Actuated g/C Ratio	0.11	0.36	0.36	0.08	0.33	0.26	0.12	0.26	0.26	0.15	0.30	0.33
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	5.0	4.0	5.0	5.0	4.0	5.0	7.2
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	3.5	2.0	3.5	3.5	2.0	3.5	5.2
Lane Grp Cap (vph)	371	1812	993	289	1691	722	400	1318	410	531	1512	527
v/s Ratio Prot	c0.11	c0.28		0.07	c0.30		0.09	0.16		c0.15	0.20	
v/s Ratio Perm			0.09			0.13			c0.21			0.14
v/c Ratio	1.03	0.78	0.24	0.84	0.90	0.48	0.76	0.62	0.82	0.95	0.66	0.41
Uniform Delay, d1	62.0	39.9	31.5	62.7	44.2	43.6	59.5	45.4	48.3	58.2	42.6	35.8
Progression 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
Incremental Delay, d2	55.3	2.7	0.3	18.6	7.5	0.6	7.5	1.0	12.1	27.0	1.1	1.2
Delay (s)	117.3	42.6	31.8	81.3	51.7	44.2	66.9	46.4	60.5	85.1	43.7	36.9
Level of Service	F	D	C	F	D	D	E	D	E	F	D	D
Approach Delay (s)		54.0			53.1			54.4			53.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	53.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	138.9	Sum of lost time (s)	27.4
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



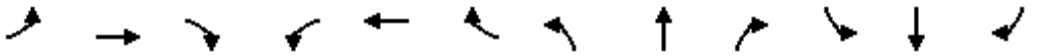
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	379	745	517	106	1226	124	772	1002	261	163	864	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.7	4.0	6.0	6.7
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	387	760	528	108	1251	127	788	1022	266	166	882	307
RTOR Reduction (vph)	0	0	312	0	0	46	0	0	117	0	0	158
Lane Group Flow (vph)	387	760	216	108	1251	81	788	1022	149	166	882	149
Turn Type	Prot		Perm	Prot		Perm	Prot		custom	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			2			6
Actuated Green, G (s)	17.0	46.1	46.1	8.4	37.5	37.5	35.7	59.0	46.1	10.9	34.2	37.5
Effective Green, g (s)	17.0	46.1	46.1	8.4	37.5	37.5	35.7	59.0	46.1	10.9	34.2	37.5
Actuated g/C Ratio	0.12	0.32	0.32	0.06	0.26	0.26	0.25	0.41	0.32	0.08	0.24	0.26
Clearance Time (s)	4.0	6.7	6.7	4.0	6.7	6.7	4.0	6.0	6.7	4.0	6.0	6.7
Vehicle Extension (s)	2.5	5.2	5.2	2.5	5.2	5.2	2.5	3.5	5.2	2.5	4.4	5.2
Lane Grp Cap (vph)	402	1616	885	199	1314	409	845	2068	503	258	1199	720
v/s Ratio Prot	c0.11	0.15		0.03	c0.25		c0.23	0.20		0.05	c0.17	
v/s Ratio Perm			0.08			0.05			0.09			0.05
v/c Ratio	0.96	0.47	0.24	0.54	0.95	0.20	0.93	0.49	0.30	0.64	0.74	0.21
Uniform Delay, d1	63.7	39.7	36.6	66.5	52.9	42.0	53.5	32.0	37.3	65.2	51.3	42.2
Progression 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
Incremental Delay, d2	35.0	0.5	0.3	2.4	15.2	0.5	16.8	0.2	0.7	4.8	2.7	0.3
Delay (s)	98.8	40.2	36.9	68.9	68.1	42.6	70.3	32.2	38.0	70.0	53.9	42.5
Level of Service	F	D	D	E	E	D	E	C	D	E	D	D
Approach Delay (s)		52.7			66.0			47.4			53.3	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	54.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	145.1	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



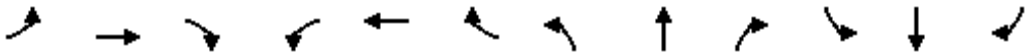
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	150	105	112	150	400	160	1364	180	300	916	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1748		1770	1863	1583	1770	4996		1770	4911	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1748		1770	1863	1583	1770	4996		1770	4911	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	276	153	107	114	153	408	163	1392	184	306	935	276
RTOR Reduction (vph)	0	18	0	0	0	247	0	11	0	0	32	0
Lane Group Flow (vph)	276	242	0	114	153	161	163	1565	0	306	1179	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	23.1	32.5		12.9	22.8	22.8	16.6	48.6		25.6	57.7	
Effective Green, g (s)	23.1	32.5		12.9	22.8	22.8	16.6	48.6		25.6	57.7	
Actuated g/C Ratio	0.17	0.23		0.09	0.16	0.16	0.12	0.35		0.18	0.41	
Clearance Time (s)	4.0	5.0		4.5	5.0	5.0	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	294	408		164	305	259	211	1746		326	2037	
v/s Ratio Prot	c0.16	c0.14		0.06	0.08		0.09	c0.31		c0.17	0.24	
v/s Ratio Perm						0.10						
v/c Ratio	0.94	0.59		0.70	0.50	0.62	0.77	0.90		0.94	0.58	
Uniform Delay, d1	57.3	47.4		61.2	53.0	54.1	59.4	42.9		56.0	31.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.1	1.5		9.9	2.7	6.3	14.7	6.9		33.8	0.6	
Delay (s)	93.4	49.0		71.0	55.7	60.4	74.1	49.8		89.7	32.0	
Level of Service	F	D		E	E	E	E	D		F	C	
Approach Delay (s)		71.8			61.1			52.0			43.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	139.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



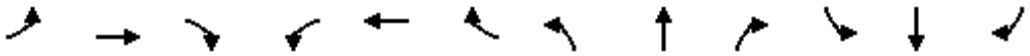
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	410	763	286	188	211	519	90	875	138	389	488	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.3	4.5	4.5	5.4	5.4	4.5	5.4	5.4
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3394		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3394		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	418	779	292	192	215	530	92	893	141	397	498	158
RTOR Reduction (vph)	0	29	0	0	0	375	0	0	70	0	0	108
Lane Group Flow (vph)	418	1042	0	192	215	155	92	893	71	397	498	50
Turn Type	Prot			Prot		Over	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	34.5	46.3		11.2	22.7	17.7	10.8	34.1	34.1	17.7	41.0	41.0
Effective Green, g (s)	34.5	46.3		11.2	22.7	17.7	10.8	34.1	34.1	17.7	41.0	41.0
Actuated g/C Ratio	0.27	0.36		0.09	0.18	0.14	0.08	0.26	0.26	0.14	0.32	0.32
Clearance Time (s)	4.5	5.0		4.5	5.3	4.5	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	2.0	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	474	1221		299	624	218	149	1347	419	472	1620	504
v/s Ratio Prot	c0.24	c0.31		0.06	0.06	0.10	0.05	c0.18		c0.12	0.10	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.88	0.85		0.64	0.34	0.71	0.62	0.66	0.17	0.84	0.31	0.10
Uniform Delay, d1	45.1	38.1		56.8	46.5	53.0	57.0	42.2	36.4	54.1	33.1	30.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	5.8		3.5	0.8	8.7	5.3	1.7	0.4	12.3	0.3	0.2
Delay (s)	62.0	43.8		60.3	47.3	61.8	62.2	43.9	36.9	66.4	33.4	31.1
Level of Service	E	D		E	D	E	E	D	D	E	C	C
Approach Delay (s)		48.9			58.2			44.5			45.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	128.7	Sum of lost time (s)	14.4
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱				↰	✣	
Volume (vph)	0	1054	255	0	1070	95	0	0	0	105	0	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.86	
Flt Protected		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1513	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	1.00	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1513	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1076	260	0	1092	97	0	0	0	107	0	219
RTOR Reduction (vph)	0	0	100	0	0	41	0	0	0	0	197	0
Lane Group Flow (vph)	0	1076	160	0	1092	56	0	0	0	96	33	0
Turn Type			Perm			Perm				Perm		
Protected Phases		2			6						4	
Permitted Phases			2			6				4		
Actuated Green, G (s)		53.6	53.6		44.1	44.1				13.1	13.1	
Effective Green, g (s)		53.6	53.6		44.1	44.1				13.1	13.1	
Actuated g/C Ratio		0.42	0.42		0.34	0.34				0.10	0.10	
Clearance Time (s)		5.8	5.8		5.8	5.8				5.5	5.5	
Vehicle Extension (s)		5.0	5.0		5.0	5.0				3.2	3.2	
Lane Grp Cap (vph)		2131	663		1753	546				172	155	
v/s Ratio Prot		c0.21			c0.21							
v/s Ratio Perm			0.10			0.04				c0.06	0.02	
v/c Ratio		0.50	0.24		0.62	0.10				0.56	0.22	
Uniform Delay, d1		27.4	24.0		35.0	28.5				54.6	52.7	
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	
Incremental Delay, d2		0.9	0.9		1.0	0.2				4.0	0.8	
Delay (s)		28.2	24.9		35.9	28.6				58.7	53.4	
Level of Service		C	C		D	C				E	D	
Approach Delay (s)		27.6			35.4			0.0			55.0	
Approach LOS		C			D			A			D	

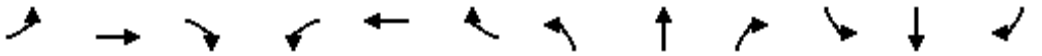
Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	127.9	Sum of lost time (s)	17.1
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↕↑				
Volume (vph)	0	974	175	0	990	265	175	0	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.92				
Flt Protected		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (prot)		5085	1583		5085	1583		3187				
Flt Permitted		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (perm)		5085	1583		5085	1583		3187				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	994	179	0	1010	270	179	0	194	0	0	0
RTOR Reduction (vph)	0	0	77	0	0	117	0	69	0	0	0	0
Lane Group Flow (vph)	0	994	102	0	1010	153	0	304	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		2			6			8				
Permitted Phases			2			6	8					
Actuated Green, G (s)		85.2	85.2		85.2	85.2		53.5				
Effective Green, g (s)		85.2	85.2		85.2	85.2		53.5				
Actuated g/C Ratio		0.57	0.57		0.57	0.57		0.36				
Clearance Time (s)		5.8	5.8		5.8	5.8		5.5				
Lane Grp Cap (vph)		2888	899		2888	899		1137				
v/s Ratio Prot		0.20			c0.20							
v/s Ratio Perm			0.06			0.10		0.10				
v/c Ratio		0.34	0.11		0.35	0.17		0.27				
Uniform Delay, d1		17.4	15.0		17.5	15.5		34.3				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.3	0.3		0.3	0.4		0.6				
Delay (s)		17.7	15.2		17.8	15.9		34.9				
Level of Service		B	B		B	B		C				
Approach Delay (s)		17.3			17.4			34.9			0.0	
Approach LOS		B			B			C			A	

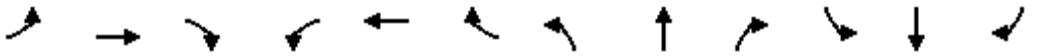
Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.3
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



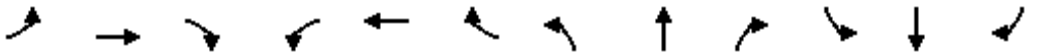
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	8	165	5	222	8	871	60	90	863	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.85		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1691		1770	1589		1770	5036		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1691		1770	1589		1770	5036		1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	5	8	168	5	227	8	889	61	92	881	10
RTOR Reduction (vph)	0	8	0	0	180	0	0	6	0	0	0	5
Lane Group Flow (vph)	10	5	0	168	52	0	8	944	0	92	881	5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	0.5	0.9		12.0	12.4		0.5	23.5		7.2	30.2	30.2
Effective Green, g (s)	0.5	0.9		12.0	12.4		0.5	23.5		7.2	30.2	30.2
Actuated g/C Ratio	0.01	0.02		0.20	0.21		0.01	0.39		0.12	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	15	26		356	331		15	1986		214	1793	802
v/s Ratio Prot	0.01	0.00		c0.09	c0.03		0.00	0.19		c0.05	c0.25	
v/s Ratio Perm												0.00
v/c Ratio	0.67	0.20		0.47	0.16		0.53	0.48		0.43	0.49	0.01
Uniform Delay, d1	29.5	29.0		21.0	19.3		29.4	13.5		24.3	9.7	7.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.9	3.7		1.0	0.2		31.9	0.2		1.4	0.2	0.0
Delay (s)	105.3	32.7		22.0	19.5		61.3	13.6		25.7	9.9	7.3
Level of Service	F	C		C	B		E	B		C	A	A
Approach Delay (s)		64.3			20.6			14.0			11.3	
Approach LOS		E			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



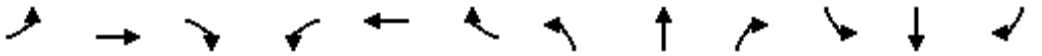
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	904	440	650	1046	0	0	0	0	965	5	595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	922	449	663	1067	0	0	0	0	985	5	607
RTOR Reduction (vph)	0	0	331	0	0	0	0	0	0	0	0	32
Lane Group Flow (vph)	0	922	118	663	1067	0	0	0	0	492	498	575
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		21.0	21.0	21.5	46.5					40.8	40.8	40.8
Effective Green, g (s)		21.0	21.0	21.5	46.5					40.8	40.8	40.8
Actuated g/C Ratio		0.22	0.22	0.23	0.49					0.43	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1121	349	774	1727					720	722	678
v/s Ratio Prot		c0.18		c0.19	0.30							
v/s Ratio Perm			0.07							0.29	0.30	c0.36
v/c Ratio		0.82	0.34	0.86	0.62					0.68	0.69	0.85
Uniform Delay, d1		35.4	31.3	35.4	17.9					22.0	22.1	24.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		5.0	0.6	9.2	0.7					2.7	2.8	9.7
Delay (s)		40.4	31.9	44.7	18.6					24.7	24.9	34.1
Level of Service		D	C	D	B					C	C	C
Approach Delay (s)		37.6			28.6			0.0			28.3	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



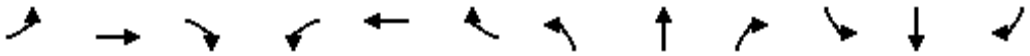
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	690	1184	0	0	1436	913	260	5	485	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1776	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1776	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	704	1208	0	0	1465	932	265	5	495	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	436	0	0	190	0	0	0
Lane Group Flow (vph)	704	1208	0	0	1465	496	0	270	305	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	40.4	74.4			30.0	30.0		16.7	16.7			
Effective Green, g (s)	40.4	74.4			30.0	30.0		16.7	16.7			
Actuated g/C Ratio	0.41	0.75			0.30	0.30		0.17	0.17			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	722	2657			1539	844		299	470			
v/s Ratio Prot	c0.40	0.34			c0.29							
v/s Ratio Perm						0.18		0.15	0.11			
v/c Ratio	0.98	0.45			0.95	0.59		0.90	0.65			
Uniform Delay, d1	28.9	4.7			33.8	29.3		40.4	38.5			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	27.1	0.1			13.2	1.1		28.5	3.1			
Delay (s)	56.0	4.8			47.1	30.4		68.9	41.5			
Level of Service	E	A			D	C		E	D			
Approach Delay (s)		23.7			40.6			51.2			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	461	854	345	503	1171	394	515	1127	394	328	1171	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total 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
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	470	871	352	513	1195	402	526	1150	402	335	1195	463
RTOR Reduction (vph)	0	0	229	0	0	183	0	0	200	0	0	221
Lane Group Flow (vph)	470	871	123	513	1195	219	526	1150	202	335	1195	242
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.5	28.6	28.6	20.9	31.0	31.0	20.4	39.0	39.0	14.5	33.1	33.1
Effective Green, g (s)	18.5	28.6	28.6	20.9	31.0	31.0	20.4	39.0	39.0	14.5	33.1	33.1
Actuated g/C Ratio	0.16	0.24	0.24	0.18	0.26	0.26	0.17	0.33	0.33	0.12	0.28	0.28
Clearance 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
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	1222	670	603	1325	412	589	1667	519	418	1414	440
v/s Ratio Prot	0.14	0.17		c0.15	c0.23		c0.15	0.23		0.10	c0.23	
v/s Ratio Perm			0.04			0.14			0.13			0.15
v/c Ratio	0.88	0.71	0.18	0.85	0.90	0.53	0.89	0.69	0.39	0.80	0.85	0.55
Uniform Delay, d1	49.2	41.4	35.9	47.5	42.5	37.8	48.2	34.7	30.8	50.8	40.5	36.6
Progression 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
Incremental Delay, d2	15.5	2.0	0.1	11.1	8.8	1.3	15.8	1.2	0.5	10.6	4.8	1.5
Delay (s)	64.7	43.4	36.0	58.6	51.3	39.1	64.1	36.0	31.3	61.4	45.4	38.1
Level of Service	E	D	D	E	D	D	E	D	C	E	D	D
Approach Delay (s)		47.8			50.8			42.2			46.4	
Approach LOS		D			D			D			D	

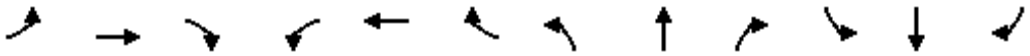
Intersection Summary			
HCM Average Control Delay	46.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	216	1442	0	0	0	0	0	622	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frt					1.00						0.94	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3516						3327	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3516						3327	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	220	1471	0	0	0	0	0	635	422
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	1672	0	0	0	0	0	1044	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)					30.0						22.0	
Effective Green, g (s)					30.0						22.0	
Actuated g/C Ratio					0.50						0.37	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1758						1220	
v/s Ratio Prot											c0.31	
v/s Ratio Perm					0.48							
v/c Ratio					0.95						0.86	
Uniform Delay, d1					14.3						17.5	
Progression Factor					0.59						1.00	
Incremental Delay, d2					9.1						7.8	
Delay (s)					17.6						25.4	
Level of Service					B						C	
Approach Delay (s)		0.0			17.6			0.0			25.4	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

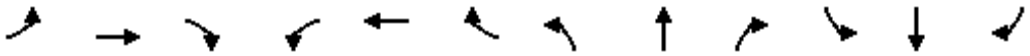
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1365	452	428	487	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0				
Lane Util. Factor					0.95	1.00		0.95				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.98				
Satd. Flow (prot)					3539	1583		3458				
Flt Permitted					1.00	1.00		0.98				
Satd. Flow (perm)					3539	1583		3458				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	1393	461	437	497	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	62	0	25	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1393	399	0	909	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					33.0	33.0		19.0				
Effective Green, g (s)					33.0	33.0		19.0				
Actuated g/C Ratio					0.55	0.55		0.32				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1946	871		1095				
v/s Ratio Prot					c0.39							
v/s Ratio Perm						0.25		0.26				
v/c Ratio					0.72	0.46		0.83				
Uniform Delay, d1					10.0	8.1		19.0				
Progression Factor					1.00	1.00		0.91				
Incremental Delay, d2					2.3	1.7		4.2				
Delay (s)					12.3	9.9		21.4				
Level of Service					B	A		C				
Approach Delay (s)		0.0			11.7			21.4			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

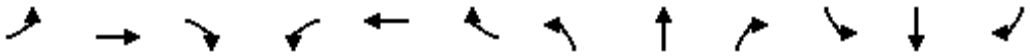


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1209	240	0	0	0	0	0	0	593	260	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.95	
Frt		0.98									1.00	
Flt Protected		1.00									0.97	
Satd. Flow (prot)		3451									3420	
Flt Permitted		1.00									0.97	
Satd. Flow (perm)		3451									3420	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1234	245	0	0	0	0	0	0	605	265	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	1451	0	0	0	0	0	0	0	0	841	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		31.0									21.0	
Effective Green, g (s)		31.0									21.0	
Actuated g/C Ratio		0.52									0.35	
Clearance Time (s)		4.0									4.0	
Lane Grp Cap (vph)		1783									1197	
v/s Ratio Prot		c0.42										
v/s Ratio Perm											0.25	
v/c Ratio		0.81									0.93dl	
Uniform Delay, d1		12.1									16.8	
Progression Factor		1.00									0.86	
Incremental Delay, d2		4.2									1.7	
Delay (s)		16.3									16.1	
Level of Service		B									B	
Approach Delay (s)		16.3			0.0			0.0			16.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

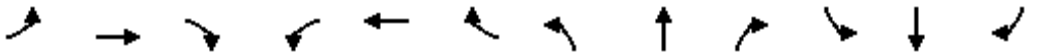
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	1520	0	0	0	0	0	538	371	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frt		1.00						0.94				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3511						3322				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3511						3322				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	303	1551	0	0	0	0	0	549	379	0	0	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	1827	0	0	0	0	0	912	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		33.0						19.0				
Effective Green, g (s)		33.0						19.0				
Actuated g/C Ratio		0.55						0.32				
Clearance Time (s)		4.0						4.0				
Lane Grp Cap (vph)		1931						1052				
v/s Ratio Prot								c0.27				
v/s Ratio Perm		0.52										
v/c Ratio		0.95						0.87				
Uniform Delay, d1		12.7						19.3				
Progression Factor		0.68						1.00				
Incremental Delay, d2		7.6						9.6				
Delay (s)		16.2						28.9				
Level of Service		B						C				
Approach Delay (s)		16.2			0.0			28.9			0.0	
Approach LOS		B			A			C			A	

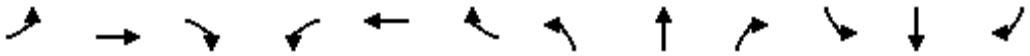
Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



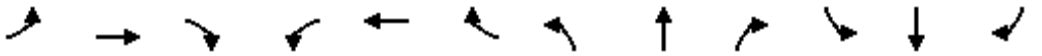
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1516	965	0	1743	598	0	0	0	190	0	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	0.88		0.91	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	2787		5085	1583				3433		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	2787		5085	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1547	985	0	1779	610	0	0	0	194	0	202
RTOR Reduction (vph)	0	0	379	0	0	211	0	0	0	0	0	17
Lane Group Flow (vph)	0	1547	606	0	1779	399	0	0	0	194	0	185
Turn Type			Perm			Perm				custom		custom
Protected Phases		4			8							
Permitted Phases			4			8				6		6
Actuated Green, G (s)		69.5	69.5		69.5	69.5				35.4		35.4
Effective Green, g (s)		69.5	69.5		69.5	69.5				35.4		35.4
Actuated g/C Ratio		0.62	0.62		0.62	0.62				0.31		0.31
Clearance Time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		3130	1716		3130	974				1076		496
v/s Ratio Prot		0.30			c0.35							
v/s Ratio Perm			0.22			0.25				0.06		c0.12
v/c Ratio		0.49	0.35		0.57	0.41				0.18		0.37
Uniform Delay, d1		12.0	10.7		12.8	11.2				28.2		30.1
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.1	0.1		0.2	0.3				0.4		2.1
Delay (s)		12.1	10.8		13.1	11.4				28.6		32.3
Level of Service		B	B		B	B				C		C
Approach Delay (s)		11.6			12.7			0.0			30.4	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



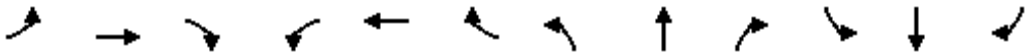
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1433	273	0	1995	265	0	346	264	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0				
Lane Util. Factor		0.91	1.00		0.91	0.88		0.95				
Frt		1.00	0.85		1.00	0.85		0.94				
Flt Protected		1.00	1.00		1.00	1.00		1.00				
Satd. Flow (prot)		5085	1583		5085	2787		3310				
Flt Permitted		1.00	1.00		1.00	1.00		1.00				
Satd. Flow (perm)		5085	1583		5085	2787		3310				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1462	279	0	2036	270	0	353	269	0	0	0
RTOR Reduction (vph)	0	0	114	0	0	80	0	28	0	0	0	0
Lane Group Flow (vph)	0	1462	165	0	2036	190	0	594	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		4			8			2				
Permitted Phases			4			8	2					
Actuated Green, G (s)		67.9	67.9		67.9	67.9		39.2				
Effective Green, g (s)		67.9	67.9		67.9	67.9		39.2				
Actuated g/C Ratio		0.59	0.59		0.59	0.59		0.34				
Clearance Time (s)		4.0	4.0		4.0	4.0		4.0				
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0				
Lane Grp Cap (vph)		3000	934		3000	1644		1127				
v/s Ratio Prot		0.29			c0.40			c0.18				
v/s Ratio Perm			0.10			0.07						
v/c Ratio		0.49	0.18		0.68	0.12		0.53				
Uniform Delay, d1		13.6	10.8		16.1	10.4		30.5				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.1	0.1		0.6	0.0		1.8				
Delay (s)		13.7	10.9		16.8	10.4		32.3				
Level of Service		B	B		B	B		C				
Approach Delay (s)		13.3			16.0			32.3			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



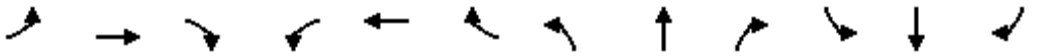
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1260	360	810	824	0	0	0	0	1274	5	860
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1286	367	827	841	0	0	0	0	1300	5	878
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	1286	253	827	841	0	0	0	0	650	655	795
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		36.1	36.1	23.8	63.7					46.4	46.4	46.4
Effective Green, g (s)		36.1	36.1	23.8	63.7					46.4	46.4	46.4
Actuated g/C Ratio		0.30	0.30	0.20	0.53					0.39	0.39	0.39
Clearance Time (s)		4.9	4.9	4.2	5.3					4.6	4.6	4.6
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1065	476	681	1879					650	652	612
v/s Ratio Prot		c0.36		c0.24	0.24							
v/s Ratio Perm			0.16							0.39	0.39	c0.50
v/c Ratio		1.21	0.53	1.21	0.45					1.00	1.00	1.30
Uniform Delay, d1		42.0	34.9	48.1	17.3					36.8	36.8	36.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		102.4	1.1	109.6	0.2					35.3	36.4	146.4
Delay (s)		144.3	36.1	157.7	17.5					72.1	73.2	183.2
Level of Service		F	D	F	B					E	E	F
Approach Delay (s)		120.3			87.0			0.0			117.1	
Approach LOS		F			F			A			F	

Intersection Summary			
HCM Average Control Delay	109.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	161.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



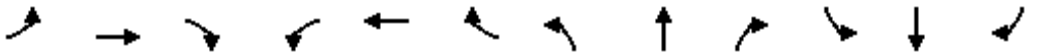
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	2055	0	0	1369	835	365	5	835	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.98	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3433	3539			3335	1441	1681	1459	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3433	3539			3335	1441	1681	1459	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	495	2097	0	0	1397	852	372	5	852	0	0	0
RTOR Reduction (vph)	0	0	0	0	8	326	0	9	9	0	0	0
Lane Group Flow (vph)	495	2097	0	0	1559	356	335	442	434	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	17.2	76.5			55.1	55.1	33.6	33.6	33.6			
Effective Green, g (s)	17.2	76.5			55.1	55.1	33.6	33.6	33.6			
Actuated g/C Ratio	0.14	0.64			0.46	0.46	0.28	0.28	0.28			
Clearance Time (s)	4.2	5.3			5.3	5.3	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	492	2256			1531	662	471	409	421			
v/s Ratio Prot	0.14	c0.59			c0.47							
v/s Ratio Perm						0.25	0.20	0.30	0.29			
v/c Ratio	1.01	0.93			1.02	0.54	0.71	1.08	1.03			
Uniform Delay, d1	51.4	19.4			32.5	23.3	38.8	43.2	43.2			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	42.1	7.4			27.8	0.8	5.0	68.1	52.3			
Delay (s)	93.5	26.8			60.2	24.2	43.9	111.3	95.5			
Level of Service	F	C			E	C	D	F	F			
Approach Delay (s)		39.5			49.3			87.2			0.0	
Approach LOS		D			D			F			A	

Intersection Summary			
HCM Average Control Delay	52.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	161.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1875	175	245	1685	164	60	210	445	155	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	6.7
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5020		1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5020		1770	5085	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	286	1913	179	250	1719	167	61	214	454	158	163	245
RTOR Reduction (vph)	0	7	0	0	0	42	0	0	216	0	0	140
Lane Group Flow (vph)	286	2085	0	250	1719	125	61	214	238	158	163	105
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			6
Actuated Green, G (s)	26.7	68.8		22.7	64.4	64.4	8.0	25.5	25.5	14.4	31.9	64.4
Effective Green, g (s)	26.7	68.8		22.7	64.4	64.4	8.0	25.5	25.5	14.4	31.9	64.4
Actuated g/C Ratio	0.18	0.46		0.15	0.43	0.43	0.05	0.17	0.17	0.10	0.21	0.43
Clearance Time (s)	3.5	6.3		3.5	6.7	6.7	3.5	5.3	5.3	3.5	5.3	6.7
Vehicle Extension (s)	2.5	5.5		2.6	5.5	5.5	2.0	3.0	3.0	2.0	3.0	5.5
Lane Grp Cap (vph)	315	2303		268	2183	680	94	317	269	170	396	680
v/s Ratio Prot	c0.16	c0.42		0.14	0.34		0.03	0.11		c0.09	0.09	
v/s Ratio Perm						0.08			c0.15			0.07
v/c Ratio	0.91	0.91		0.93	0.79	0.18	0.65	0.68	0.89	0.93	0.41	0.15
Uniform Delay, d1	60.4	37.6		62.9	36.9	26.5	69.6	58.4	60.8	67.3	51.0	26.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.2	6.5		37.2	2.3	0.3	11.0	5.6	27.3	47.7	0.7	0.3
Delay (s)	88.6	44.1		100.1	39.2	26.8	80.6	64.0	88.1	115.0	51.6	26.4
Level of Service	F	D		F	D	C	F	E	F	F	D	C
Approach Delay (s)		49.4			45.4			80.4			58.4	
Approach LOS		D			D			F			E	

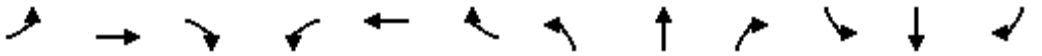
Intersection Summary			
HCM Average Control Delay	52.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	1700	404	382	1271	469	302	1113	214	373	834	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.2	6.2	4.0	6.2	6.2	4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	388	1735	412	390	1297	479	308	1136	218	381	851	245
RTOR Reduction (vph)	0	0	109	0	0	167	0	0	88	0	0	131
Lane Group Flow (vph)	388	1735	303	390	1297	312	308	1136	130	381	851	114
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.7	56.8	56.8	18.0	55.1	55.1	15.5	37.0	37.0	17.9	39.4	39.4
Effective Green, g (s)	19.7	57.8	57.8	18.0	56.1	56.1	15.5	37.5	37.5	17.9	39.9	39.9
Actuated g/C Ratio	0.13	0.39	0.39	0.12	0.37	0.37	0.10	0.25	0.25	0.12	0.27	0.27
Clearance Time (s)	4.0	7.2	7.2	4.0	7.2	7.2	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	5.2	5.2	2.0	5.2	5.2	2.0	3.5	3.5	2.0	3.5	3.5
Lane Grp Cap (vph)	451	1961	1075	412	1903	1043	355	1272	396	410	1354	421
v/s Ratio Prot	0.11	c0.34		c0.11	0.26		0.09	c0.22		c0.11	0.17	
v/s Ratio Perm			0.11			0.11			0.08			0.07
v/c Ratio	0.86	0.88	0.28	0.95	0.68	0.30	0.87	0.89	0.33	0.93	0.63	0.27
Uniform Delay, d1	63.8	42.9	31.7	65.5	39.4	33.0	66.2	54.3	45.9	65.4	48.5	43.5
Progression 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
Incremental Delay, d2	14.9	5.6	0.3	30.5	1.4	0.4	18.9	8.5	0.6	26.8	1.0	0.4
Delay (s)	78.6	48.6	32.1	95.9	40.8	33.4	85.1	62.7	46.5	92.2	49.4	43.9
Level of Service	E	D	C	F	D	C	F	E	D	F	D	D
Approach Delay (s)		50.5			49.1			64.8			59.5	
Approach LOS		D			D			E			E	

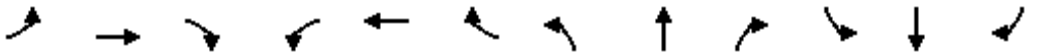
Intersection Summary			
HCM Average Control Delay	54.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	149.9	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



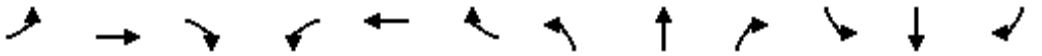
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1567	471	221	1379	149	332	697	181	355	958	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7	6.0	4.0	6.7	6.0	4.0	6.0	6.7	4.0	6.0	6.7
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	317	1599	481	226	1407	152	339	711	185	362	978	414
RTOR Reduction (vph)	0	0	137	0	0	49	0	0	112	0	0	190
Lane Group Flow (vph)	317	1599	344	226	1407	103	339	711	73	362	978	224
Turn Type	Prot		custom	Prot		custom	Prot		custom	Prot		custom
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.2	58.4	37.0	13.0	54.2	35.4	18.1	35.4	58.4	19.7	37.0	54.2
Effective Green, g (s)	17.2	58.4	37.0	13.0	54.2	35.4	18.1	35.4	58.4	19.7	37.0	54.2
Actuated g/C Ratio	0.12	0.40	0.25	0.09	0.37	0.24	0.12	0.24	0.40	0.13	0.25	0.37
Clearance Time (s)	4.0	6.7	6.0	4.0	6.7	6.0	4.0	6.0	6.7	4.0	6.0	6.7
Vehicle Extension (s)	2.5	5.2	4.4	2.5	5.2	3.5	2.5	3.5	5.2	2.5	4.4	5.2
Lane Grp Cap (vph)	401	2017	701	303	1872	381	422	1223	628	459	1278	1026
v/s Ratio Prot	c0.09	c0.31		0.07	0.28		0.10	0.14		c0.11	c0.19	
v/s Ratio Perm			0.12			0.07			0.05			0.08
v/c Ratio	0.79	0.79	0.49	0.75	0.75	0.27	0.80	0.58	0.12	0.79	0.77	0.22
Uniform Delay, d1	63.2	39.1	47.1	65.5	40.6	45.4	62.8	49.4	28.1	61.7	51.1	31.9
Progression 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
Incremental Delay, d2	9.9	2.6	0.9	9.1	2.1	0.5	10.3	0.8	0.2	8.4	3.1	0.2
Delay (s)	73.1	41.7	48.0	74.6	42.7	45.9	73.1	50.1	28.3	70.2	54.2	32.2
Level of Service	E	D	D	E	D	D	E	D	C	E	D	C
Approach Delay (s)		47.1			47.0			53.2			52.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	49.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	147.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



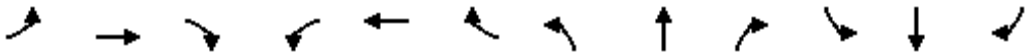
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	50	120	198	85	195	195	892	198	350	1166	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		4.5	5.0	5.5	4.5	5.5		4.5	5.4	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1666		1770	1863	1583	1770	4947		1770	5003	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1666		1770	1863	1583	1770	4947		1770	5003	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	51	122	202	87	199	199	910	202	357	1190	143
RTOR Reduction (vph)	0	67	0	0	0	134	0	21	0	0	9	0
Lane Group Flow (vph)	128	106	0	202	87	65	199	1091	0	357	1324	0
Turn Type	Prot			Prot		custom	Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						8						
Actuated Green, G (s)	13.8	12.1		17.7	16.0	37.8	17.6	37.8		28.5	48.8	
Effective Green, g (s)	13.8	12.1		17.7	16.0	37.8	17.6	37.8		28.5	48.8	
Actuated g/C Ratio	0.12	0.10		0.15	0.14	0.33	0.15	0.33		0.25	0.42	
Clearance Time (s)	4.5	5.0		4.5	5.0	5.5	4.5	5.5		4.5	5.4	
Vehicle Extension (s)	3.0	2.0		2.0	5.0	5.0	2.0	5.0		2.5	5.0	
Lane Grp Cap (vph)	211	174		271	258	518	269	1618		436	2112	
v/s Ratio Prot	0.07	c0.06		c0.11	c0.05		0.11	c0.22		c0.20	0.26	
v/s Ratio Perm						0.04						
v/c Ratio	0.61	0.61		0.75	0.34	0.13	0.74	0.67		0.82	0.63	
Uniform Delay, d1	48.3	49.5		46.8	45.0	27.3	46.8	33.6		41.1	26.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	4.1		9.3	1.6	0.2	8.8	1.5		11.1	0.8	
Delay (s)	53.2	53.6		56.1	46.6	27.5	55.7	35.1		52.2	27.1	
Level of Service	D	D		E	D	C	E	D		D	C	
Approach Delay (s)		53.4			42.8			38.2			32.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	115.6	Sum of lost time (s)	24.5
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	615	280	151	816	366	365	503	151	446	643	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		4.5	4.3	4.3	4.5	4.4	4.4	4.0	4.9	4.9
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3373		3433	3539	1583	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3373		3433	3539	1583	1770	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	306	628	286	154	833	373	372	513	154	455	656	398
RTOR Reduction (vph)	0	35	0	0	0	222	0	0	116	0	0	275
Lane Group Flow (vph)	306	879	0	154	833	151	372	513	38	455	656	123
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			4
Actuated Green, G (s)	27.5	57.5		10.1	41.3	41.3	32.6	33.8	33.8	21.1	22.3	22.3
Effective Green, g (s)	27.5	58.0		10.1	42.3	42.3	32.6	34.8	34.8	21.6	22.8	22.8
Actuated g/C Ratio	0.19	0.41		0.07	0.30	0.30	0.23	0.25	0.25	0.15	0.16	0.16
Clearance Time (s)	3.0	5.0		4.5	5.3	5.3	4.5	5.4	5.4	4.5	5.4	5.4
Vehicle Extension (s)	2.0	2.0		2.0	5.5	5.5	2.0	5.3	5.3	2.0	5.3	5.3
Lane Grp Cap (vph)	343	1379		244	1055	472	407	1247	388	523	817	254
v/s Ratio Prot	c0.17	0.26		0.04	c0.24		c0.21	0.10		0.13	c0.13	
v/s Ratio Perm						0.10			0.02			0.08
v/c Ratio	0.89	0.64		0.63	0.79	0.32	0.91	0.41	0.10	0.87	0.80	0.48
Uniform Delay, d1	55.8	33.5		64.1	45.7	38.6	53.3	45.0	41.4	58.8	57.4	54.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.5	0.7		3.9	4.8	1.0	24.2	0.5	0.3	13.9	6.6	3.3
Delay (s)	79.2	34.3		68.0	50.5	39.6	77.5	45.5	41.7	72.7	64.0	57.5
Level of Service	E	C		E	D	D	E	D	D	E	E	E
Approach Delay (s)		45.5			49.5			56.4			64.9	
Approach LOS		D			D			E			E	

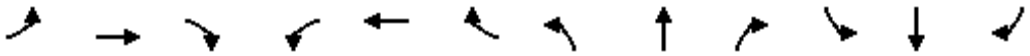
Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	141.9	Sum of lost time (s)	16.7
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1130	130	0	1399	110	0	0	0	175	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0	4.0	
Lane Util. Factor		0.91	1.00		0.91	1.00				0.95	0.95	
Frt		1.00	0.85		1.00	0.85				1.00	0.87	
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (prot)		5085	1583		5085	1583				1681	1524	
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.99	
Satd. Flow (perm)		5085	1583		5085	1583				1681	1524	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1153	133	0	1428	112	0	0	0	179	0	158
RTOR Reduction (vph)	0	0	80	0	0	67	0	0	0	0	5	0
Lane Group Flow (vph)	0	1153	53	0	1428	45	0	0	0	161	171	0
Turn Type			Perm			Perm				Perm		
Protected Phases		4			8						6	
Permitted Phases			4			8				6		
Actuated Green, G (s)		16.0	16.0		16.0	16.0				16.0	16.0	
Effective Green, g (s)		16.0	16.0		16.0	16.0				16.0	16.0	
Actuated g/C Ratio		0.40	0.40		0.40	0.40				0.40	0.40	
Clearance Time (s)		4.0	4.0		4.0	4.0				4.0	4.0	
Lane Grp Cap (vph)		2034	633		2034	633				672	610	
v/s Ratio Prot		0.23			c0.28							
v/s Ratio Perm			0.03			0.03				0.10	0.11	
v/c Ratio		0.57	0.08		0.70	0.07				0.24	0.28	
Uniform Delay, d1		9.3	7.5		10.0	7.4				8.0	8.1	
Progression Factor		1.00	1.00		1.79	3.75				1.00	1.00	
Incremental Delay, d2		1.2	0.3		1.6	0.2				0.8	1.1	
Delay (s)		10.5	7.7		19.5	28.0				8.8	9.3	
Level of Service		B	A		B	C				A	A	
Approach Delay (s)		10.2			20.2			0.0			9.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

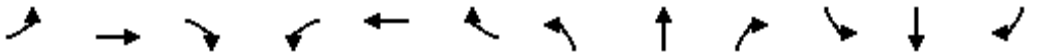
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↕↑				
Volume (vph)	0	1135	165	0	1314	155	195	0	230	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0				
Lane Util. Factor		0.91	1.00		0.91	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.92				
Flt Protected		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (prot)		5085	1583		5085	1583		3179				
Flt Permitted		1.00	1.00		1.00	1.00		0.98				
Satd. Flow (perm)		5085	1583		5085	1583		3179				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1158	168	0	1341	158	199	0	235	0	0	0
RTOR Reduction (vph)	0	0	101	0	0	95	0	13	0	0	0	0
Lane Group Flow (vph)	0	1158	67	0	1341	63	0	421	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		4			8			2				
Permitted Phases			4			8	2					
Actuated Green, G (s)		16.0	16.0		16.0	16.0		16.0				
Effective Green, g (s)		16.0	16.0		16.0	16.0		16.0				
Actuated g/C Ratio		0.40	0.40		0.40	0.40		0.40				
Clearance Time (s)		4.0	4.0		4.0	4.0		4.0				
Lane Grp Cap (vph)		2034	633		2034	633		1272				
v/s Ratio Prot		0.23			c0.26							
v/s Ratio Perm			0.04			0.04		0.13				
v/c Ratio		0.57	0.11		0.66	0.10		0.33				
Uniform Delay, d1		9.3	7.5		9.8	7.5		8.3				
Progression Factor		1.86	4.52		1.00	1.00		1.00				
Incremental Delay, d2		1.0	0.3		1.7	0.3		0.7				
Delay (s)		18.3	34.3		11.5	7.8		9.0				
Level of Service		B	C		B	A		A				
Approach Delay (s)		20.3			11.1			9.0			0.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

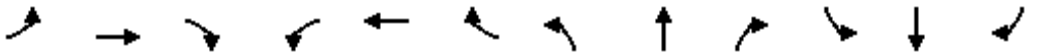
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	0	15	125	0	60	15	938	80	60	994	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.85		1.00	0.85		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		1770	1583		1770	5025		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1583		1770	1583		1770	5025		1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	0	15	128	0	61	15	957	82	61	1014	21
RTOR Reduction (vph)	0	13	0	0	46	0	0	8	0	0	0	11
Lane Group Flow (vph)	21	2	0	128	15	0	15	1031	0	61	1014	11
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	7.0	16.0		21.0	30.0		7.0	55.0		12.0	60.0	60.0
Effective Green, g (s)	7.0	16.0		21.0	30.0		7.0	55.0		12.0	60.0	60.0
Actuated g/C Ratio	0.06	0.13		0.18	0.25		0.06	0.46		0.10	0.50	0.50
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	103	211		310	396		103	2303		177	1770	792
v/s Ratio Prot	0.01	0.00		c0.07	c0.01		0.01	0.21		c0.03	c0.29	
v/s Ratio Perm												0.01
v/c Ratio	0.20	0.01		0.41	0.04		0.15	0.45		0.34	0.57	0.01
Uniform Delay, d1	53.8	45.1		44.0	34.1		53.7	22.1		50.3	21.0	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.14	1.33		1.00	1.00	1.00
Incremental Delay, d2	4.4	0.1		4.0	0.2		2.1	0.4		5.3	1.4	0.0
Delay (s)	58.3	45.2		48.0	34.3		63.1	29.9		55.6	22.4	15.1
Level of Service	E	D		D	C		E	C		E	C	B
Approach Delay (s)		52.8			43.6			30.4			24.1	
Approach LOS		D			D			C			C	

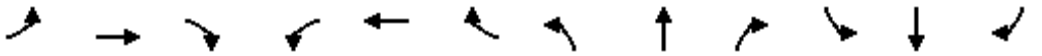
Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



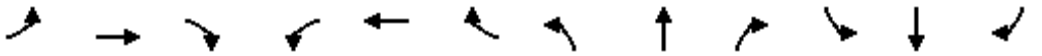
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1031	625	729	1225	0	0	0	0	1224	5	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1686	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1052	638	744	1250	0	0	0	0	1249	5	668
RTOR Reduction (vph)	0	0	417	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	1052	221	744	1250	0	0	0	0	624	630	648
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Actuated Green, G (s)		22.0	22.0	23.0	49.0					43.0	43.0	43.0
Effective Green, g (s)		22.0	22.0	23.0	49.0					43.0	43.0	43.0
Actuated g/C Ratio		0.22	0.22	0.23	0.49					0.43	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1119	348	790	1734					723	725	681
v/s Ratio Prot		c0.21		c0.22	0.35							
v/s Ratio Perm			0.14							0.37	0.37	c0.41
v/c Ratio		0.94	0.63	0.94	0.72					0.86	0.87	0.95
Uniform Delay, d1		38.4	35.4	37.8	20.1					25.8	25.9	27.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		14.8	3.8	19.2	1.5					10.4	10.8	23.2
Delay (s)		53.1	39.1	57.1	21.6					36.2	36.7	50.7
Level of Service		D	D	E	C					D	D	D
Approach Delay (s)		47.8			34.8			0.0			41.4	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	146.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



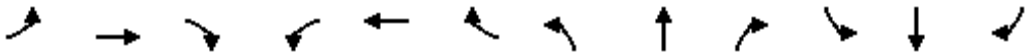
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	550	1710	0	0	1374	1067	580	0	716	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95			0.91	0.88		1.00	0.88			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	2787		1770	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	2787		1770	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	561	1745	0	0	1402	1089	592	0	731	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	534	0	0	25	0	0	0
Lane Group Flow (vph)	561	1745	0	0	1402	555	0	592	706	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	30.0	60.0			26.0	26.0		32.0	32.0			
Effective Green, g (s)	30.0	60.0			26.0	26.0		32.0	32.0			
Actuated g/C Ratio	0.30	0.60			0.26	0.26		0.32	0.32			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	531	2123			1322	725		566	892			
v/s Ratio Prot	c0.32	0.49			c0.28							
v/s Ratio Perm						0.20		0.33	0.25			
v/c Ratio	1.06	0.82			1.06	0.77		1.05	0.79			
Uniform Delay, d1	35.0	15.8			37.0	34.2		34.0	31.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	54.8	2.7			42.5	4.9		50.4	4.8			
Delay (s)	89.8	18.5			79.5	39.0		84.4	35.8			
Level of Service	F	B			E	D		F	D			
Approach Delay (s)		35.8			61.8			57.5			0.0	
Approach LOS		D			E			E			A	

Intersection Summary			
HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	146.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	467	1250	345	385	899	461	450	1288	462	338	1250	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.5	4.5	4.5	3.5	4.5
Lane Util. Factor	0.97	0.91	0.88	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	2787	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	477	1276	352	393	917	470	459	1314	471	345	1276	544
RTOR Reduction (vph)	0	0	121	0	0	161	0	0	161	0	0	192
Lane Group Flow (vph)	477	1276	231	393	917	309	459	1314	310	345	1276	352
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	23.1	40.9	40.9	21.6	39.4	39.4	21.1	45.9	45.9	16.2	41.0	41.0
Effective Green, g (s)	23.1	41.4	41.4	21.6	39.9	39.9	21.1	47.4	46.4	16.2	42.5	41.5
Actuated g/C Ratio	0.16	0.29	0.29	0.15	0.28	0.28	0.15	0.33	0.32	0.11	0.30	0.29
Clearance Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	552	1466	803	516	1413	440	504	1678	511	387	1505	457
v/s Ratio Prot	c0.14	c0.25		0.11	0.18		c0.13	0.26		0.10	c0.25	
v/s Ratio Perm			0.08			0.20			0.20			0.22
v/c Ratio	0.86	0.87	0.29	0.76	0.65	0.70	0.91	0.78	0.61	0.89	0.85	0.77
Uniform Delay, d1	58.7	48.6	39.7	58.5	45.7	46.5	60.3	43.5	40.9	62.8	47.5	46.7
Progression 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
Incremental Delay, d2	13.2	5.9	0.2	6.6	1.0	5.0	20.6	2.5	2.0	21.8	4.6	7.8
Delay (s)	72.0	54.5	39.9	65.1	46.7	51.5	80.9	45.9	43.0	84.6	52.2	54.5
Level of Service	E	D	D	E	D	D	F	D	D	F	D	D
Approach Delay (s)		56.0			52.0			52.5			57.9	
Approach LOS		E			D			D			E	

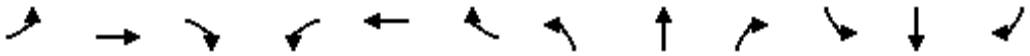
Intersection Summary			
HCM Average Control Delay	54.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	143.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	564	1331	0	0	0	0	0	668	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frt					1.00						0.94	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3487						3321	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3487						3321	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	576	1358	0	0	0	0	0	682	477
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	1894	0	0	0	0	0	1139	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)					31.0						21.0	
Effective Green, g (s)					31.0						21.0	
Actuated g/C Ratio					0.52						0.35	
Clearance Time (s)					4.0						4.0	
Lane Grp Cap (vph)					1802						1162	
v/s Ratio Prot											c0.34	
v/s Ratio Perm					0.54							
v/c Ratio					1.05						0.98	
Uniform Delay, d1					14.5						19.3	
Progression Factor					0.59						1.18	
Incremental Delay, d2					29.6						20.0	
Delay (s)					38.2						42.8	
Level of Service					D						D	
Approach Delay (s)		0.0			38.2			0.0			42.8	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

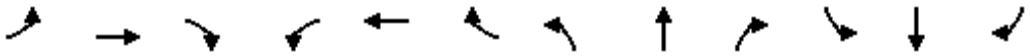
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1645	384	350	650	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0				
Lane Util. Factor					0.95	1.00		0.95				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.98				
Satd. Flow (prot)					3539	1583		3478				
Flt Permitted					1.00	1.00		0.98				
Satd. Flow (perm)					3539	1583		3478				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	1679	392	357	663	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	43	0	8	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1679	349	0	1012	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					31.0	31.0		21.0				
Effective Green, g (s)					31.0	31.0		21.0				
Actuated g/C Ratio					0.52	0.52		0.35				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1828	818		1217				
v/s Ratio Prot					c0.47							
v/s Ratio Perm						0.22		0.29				
v/c Ratio					0.92	0.43		0.83				
Uniform Delay, d1					13.3	9.0		17.9				
Progression Factor					1.00	1.00		0.74				
Incremental Delay, d2					8.9	1.6		5.3				
Delay (s)					22.3	10.6		18.5				
Level of Service					C	B		B				
Approach Delay (s)		0.0			20.1			18.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary					
HCM Average Control Delay	19.6	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.88				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	80.3%	ICU Level of Service		D	
Analysis Period (min)	15				

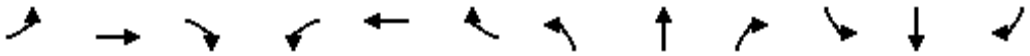
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1998	492	0	0	0	0	0	0	474	617	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0								4.0	
Lane Util. Factor		0.95	1.00								0.95	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.98	
Satd. Flow (prot)		3539	1583								3464	
Flt Permitted		1.00	1.00								0.98	
Satd. Flow (perm)		3539	1583								3464	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	2039	502	0	0	0	0	0	0	484	630	0
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	2039	467	0	0	0	0	0	0	0	1110	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		33.0	33.0								19.0	
Effective Green, g (s)		33.0	33.0								19.0	
Actuated g/C Ratio		0.55	0.55								0.32	
Clearance Time (s)		4.0	4.0								4.0	
Lane Grp Cap (vph)		1946	871								1097	
v/s Ratio Prot		c0.58										
v/s Ratio Perm			0.30								0.32	
v/c Ratio		1.05	0.54								1.01	
Uniform Delay, d1		13.5	8.6								20.5	
Progression Factor		1.00	1.00								0.98	
Incremental Delay, d2		34.2	2.4								11.3	
Delay (s)		47.7	11.0								31.4	
Level of Service		D	B								C	
Approach Delay (s)		40.5			0.0			0.0			31.4	
Approach LOS		D			A			A			C	

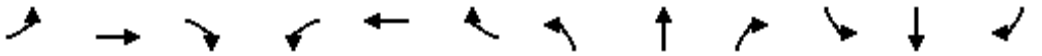
Intersection Summary				
HCM Average Control Delay	37.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	1.03			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	92.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group



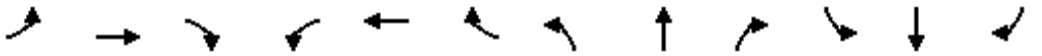
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	562	2010	0	0	0	0	0	439	236	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0				
Lane Util. Factor	1.00	0.95						0.95				
Frt	1.00	1.00						0.95				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1770	3539						3354				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1770	3539						3354				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	573	2051	0	0	0	0	0	448	241	0	0	0
RTOR Reduction (vph)	46	0	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	527	2051	0	0	0	0	0	682	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	36.6	36.6						15.4				
Effective Green, g (s)	36.6	36.6						15.4				
Actuated g/C Ratio	0.61	0.61						0.26				
Clearance Time (s)	4.0	4.0						4.0				
Vehicle Extension (s)	3.0	3.0						3.0				
Lane Grp Cap (vph)	1080	2159						861				
v/s Ratio Prot		c0.58						c0.20				
v/s Ratio Perm	0.30											
v/c Ratio	0.49	0.95						0.79				
Uniform Delay, d1	6.5	10.9						20.8				
Progression Factor	0.86	0.70						1.00				
Incremental Delay, d2	0.0	1.2						5.0				
Delay (s)	5.6	8.8						25.8				
Level of Service	A	A						C				
Approach Delay (s)		8.1			0.0			25.8			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	158.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱		↑↑↑	↱				↰↰		↱
Volume (vph)	0	1582	456	0	2332	406	0	0	0	420	0	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	0.88		0.91	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	2787		5085	1583				3433		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	2787		5085	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1614	465	0	2380	414	0	0	0	429	0	277
RTOR Reduction (vph)	0	0	165	0	0	100	0	0	0	0	0	4
Lane Group Flow (vph)	0	1614	300	0	2380	314	0	0	0	429	0	273
Turn Type			Perm			Perm				custom		custom
Protected Phases		4			8							
Permitted Phases			4			8				6		6
Actuated Green, G (s)		75.0	75.0		75.0	75.0				37.0		37.0
Effective Green, g (s)		75.0	75.0		75.0	75.0				37.0		37.0
Actuated g/C Ratio		0.62	0.62		0.62	0.62				0.31		0.31
Clearance Time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		3178	1742		3178	989				1059		488
v/s Ratio Prot		0.32			c0.47							
v/s Ratio Perm			0.11			0.20				0.12		c0.17
v/c Ratio		0.51	0.17		0.75	0.32				0.41		0.56
Uniform Delay, d1		12.4	9.5		15.9	10.5				32.8		34.7
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.1	0.0		1.0	0.2				1.2		4.6
Delay (s)		12.5	9.5		16.9	10.7				34.0		39.3
Level of Service		B	A		B	B				C		D
Approach Delay (s)		11.8			15.9			0.0			36.0	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1714	288	0	2064	210	679	0	474	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0				
Lane Util. Factor		0.91	1.00		0.91	0.88		0.95				
Frt		1.00	0.85		1.00	0.85		0.94				
Flt Protected		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (prot)		5085	1583		5085	2787		3226				
Flt Permitted		1.00	1.00		1.00	1.00		0.97				
Satd. Flow (perm)		5085	1583		5085	2787		3226				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1749	294	0	2106	214	693	0	484	0	0	0
RTOR Reduction (vph)	0	0	96	0	0	58	0	4	0	0	0	0
Lane Group Flow (vph)	0	1749	198	0	2106	156	0	1173	0	0	0	0
Turn Type			Perm			Perm	Perm					
Protected Phases		4			8			2				
Permitted Phases			4			8	2					
Actuated Green, G (s)		59.0	59.0		59.0	59.0		53.0				
Effective Green, g (s)		59.0	59.0		59.0	59.0		53.0				
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.44				
Clearance Time (s)		4.0	4.0		4.0	4.0		4.0				
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0				
Lane Grp Cap (vph)		2500	778		2500	1370		1425				
v/s Ratio Prot		0.34			c0.41							
v/s Ratio Perm			0.13			0.06		0.36				
v/c Ratio		0.70	0.25		0.84	0.11		0.88dl				
Uniform Delay, d1		23.6	17.7		26.5	16.4		29.4				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		0.9	0.2		2.8	0.0		5.5				
Delay (s)		24.5	17.9		29.2	16.5		34.9				
Level of Service		C	B		C	B		C				
Approach Delay (s)		23.6			28.0			34.9			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

APPENDIX G: TRAFFIC SIGNAL WARRANTS

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE _____

_____ _____ _____ _____
DIST CO RTE PM

CALC _____ DATE _____

CHK _____ DATE _____

Major St: Main Street — Critical Approach Speed 40 mph

Minor St: Project Access A — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... [X]
or
In built up area of isolated community of < 10,000 population..... [ ] } **RURAL (R)**

[ ] **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... Speed >40

CONDITION A - Minimum Vehicular Volume

Satisfied _____ Not Satisfied X

Number of lanes for moving traffic on each approach

Major Street	Minor Street
1	1
2 or More 49,200	1 875
2 or More	2 or More
1	2 or More

Minimum Requirements EADT			
Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Urban	Rural	Urban	Rural
8,000	5,600	2,400	1,680
9,600	6,720	2,400	1,680
9,600	6,720	3,200	2,240
8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied X Not Satisfied _____

Number of lanes for moving traffic on each approach

Major Street	Minor Street
1	1
2 or More 49,200	1 875
2 or More	2 or More
1	2 or More

Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Urban	Rural	Urban	Rural
12,000	8,400	1,200	850
14,400	10,080	1,200	850
14,400	10,080	1,600	1,120
12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied _____ Not Satisfied X

No one condition satisfied, but following conditions fulfilled 80% or more..... _____ (A) _____ (B)

2 CONDITIONS 80%	2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE _____

_____ _____ _____ _____
DIST CO RTE PM

CALC _____ DATE _____

CHK _____ DATE _____

Major St: Main Street — Critical Approach Speed 40 mph

Minor St: Project Access B — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... [X]
or
In built up area of isolated community of < 10,000 population..... [ ] } RURAL (R)

[ ] URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... Speed >40

CONDITION A - Minimum Vehicular Volume

Satisfied _____ Not Satisfied X

Number of lanes for moving traffic on each approach

Major Street	Minor Street
1	1
2 or More 49,200	1 550
2 or More	2 or More
1	2 or More

Minimum Requirements EADT			
Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Urban	Rural	Urban	Rural
8,000	5,600	2,400	1,680
9,600	6,720	2,400	1,680
9,600	6,720	3,200	2,240
8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied _____ Not Satisfied X

Number of lanes for moving traffic on each approach

Major Street	Minor Street
1	1
2 or More 49,200	1 550
2 or More	2 or More
1	2 or More

Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Urban	Rural	Urban	Rural
12,000	8,400	1,200	850
14,400	10,080	1,200	850
14,400	10,080	1,600	1,120
12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied _____ Not Satisfied X

No one condition satisfied, but following conditions fulfilled 80% or more..... _____ A _____ B

2 CONDITIONS 80% (1,344)	2 CONDITIONS 80% (680)

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX H: ILV WORKSHEET

Existing Conditions (with Project)

		Existing ADT	Project ADT		With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	f(hv)	Mainline Per Lane Capacity	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Parkway	153,200	286	10%	153,486	7.10%	10,897	0.51	4 SOV + 1 Aux	0.92	1.70%	0.99	2,400	1,218	0.51	B	0.19%	No
	Olympic Parkway to Main Street	121,500	286	10%	121,786	6.90%	8,403	0.51	4 SOV + 1 Aux	0.93	5.40%	0.97	2,400	947	0.39	A	0.23%	No
	South of Main Street	116,300	286	10%	116,586	7.10%	8,278	0.58	4 SOV + 1 Aux	0.95	10.30%	0.95	2,400	1,063	0.44	B	0.25%	No
SR-125**	North of Birch Street	4,800	171	6%	4,971	7.00%	348	0.58	2 Toll	0.95	5.00%	0.98	2,400	109	0.05	A	3.45%	No
	Birch Street to Main Street	4,800	429	15%	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	0.98	2,400	115	0.05	A	8.20%	No
	South of Main Street	4,800	429	15%	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	0.98	2,400	115	0.05	A	8.20%	No

*** Volume determined from SANDAG traffic model. Volumes not provided or available from SANDAG or Toll Road Authority at the time this report was prepared.*

2020 Conditions (with Project)

		2020 ADT	Project ADT		With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	f(hv)	Mainline Per Lane Capacity	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Parkway	209,214	286	10%	209,500	7.00%	14,665	0.58	4 SOV + 1 Aux	0.92	1.70%	0.99	2,400	1,865	0.78	C	0.14%	No
	Olympic Parkway to Main Street	229,314	286	10%	229,600	7.00%	16,072	0.58	4 SOV + 1 Aux	0.92	5.40%	0.97	2,400	2,081	0.87	D	0.12%	No
	South of Main Street	219,814	286	10%	220,100	7.00%	15,407	0.58	4 SOV + 1 Aux	0.92	10.30%	0.95	2,400	2,043	0.85	D	0.13%	No
SR-125	North of Birch Street	15,143	257	9%	15,400	7.00%	1,078	0.58	2 Toll	0.92	5.00%	0.98	2,400	348	0.15	A	1.67%	No
	Birch Street to Main Street	25,514	286	10%	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	0.98	2,400	584	0.24	A	1.11%	No
	South of Main Street	25,514	286	10%	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	0.98	2,400	584	0.24	A	1.11%	

2030 Conditions (with Project)

		2030 ADT	Project Trips	Percent Trips	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes by Direction	PHF	% Heavy Vehicles	f(hv)	Mainline Per Lane Capacity	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Parkway	271,714	286	10%	272,000	7.00%	19,040	0.58	4 SOV + 1 Aux + 1 HOV	0.92	1.70%	0.99	2,160	2,421	1.12	F	0.11%	No
	Olympic Parkway to Main Street	265,657	343	12%	266,000	7.00%	18,620	0.58	4 SOV + 1 Aux + 1 HOV	0.92	5.40%	0.97	2,160	2,411	1.12	F	0.13%	No
	South of Main Street	257,857	143	5%	258,000	7.00%	18,060	0.58	4 SOV + 1 Aux + 1 HOV	0.92	10.30%	0.95	2,160	2,394	1.11	F	0.06%	No
SR-125	North of Birch Street	30,443	257	9%	30,700	7.00%	2,149	0.58	2 Toll	0.92	5.00%	0.98	2,400	694	0.29	A	0.84%	No
	Birch Street to Main Street	34,457	143	5%	34,600	7.00%	2,422	0.58	2 Toll	0.92	5.00%	0.98	2,400	783	0.33	A	0.41%	No
	South of Main Street	93,714	286	10%	94,000	7.00%	6,580	0.58	2 Toll	0.92	5.00%	0.98	2,400	2,126	0.89	D	0.30%	No

PROJECT TRIP GENERATION = 2,858

Number: 1
Intersection: 805 SB Ramps @ Olympic Parkway
Study Scenario: Existing Plus Project

PEAK PERIOD: AM

Vol			365	5	561			
Lanes			1	0	2			
Vol	Lanes					Vol	Lanes	
0	0					0	0	
988	2					709	2	
352	1					890	2	
			0	0	0	Vol		
						Lanes		

Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	890	2	445
WB Thru/Right	709	2	355
	TOTAL		445

Phase 2

	Volume	Lanes	vpl
EB	988	4	247
WB	-181	3	-60
	TOTAL		247

Phase 3

	Volume	Lanes	vpl
SB Left	561	1	561
SB Thru/Rt	370	2	185
	TOTAL		561

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM

Vol			798	1	1241			
Lanes			1	0	2			
Vol	Lanes					Vol	Lanes	
0	0					0	0	
932	2					802	2	
361	1					683	2	
			0	0	0	Vol		
			0	0	0	Lanes		

Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	683	2	342
WB Thru/Right	802	2	401
	TOTAL		401

Phase 2

	Volume	Lanes	vpl
EB	932	4	233
WB	119	3	40
	TOTAL		233

Phase 3

	Volume	Lanes	vpl
SB Left	1241	1	1241
SB Thru/Rt	799	2	400
	TOTAL		1241

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

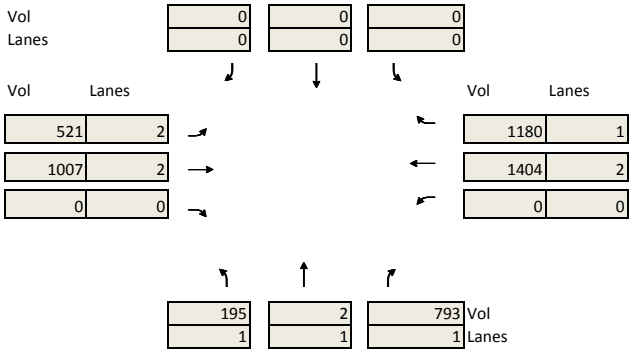
Total Volume = 1253
Capacity Condition = Capacity

PM PEAK PERIOD

Total Volume = 1875
Capacity Condition = Over Capacity

Number: 2
Intersection: 805 NB Ramps @ Olympic Parkway
Study Scenario: Existing Plus Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	521	2	261
EB Thru/Right	1007	2	504
	TOTAL		504

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	243	2	122
WB	0	2	0
	TOTAL		122

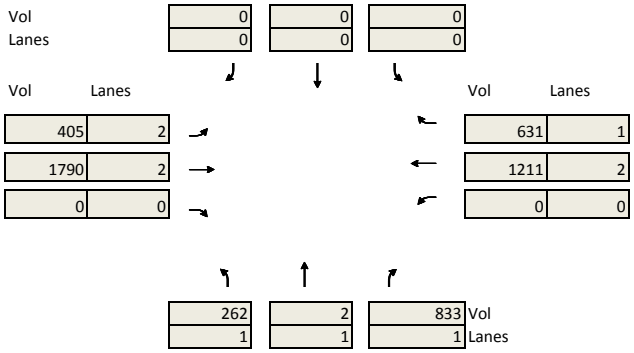
Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	195	1	195
NB Thru/Rt	795	2	398
	TOTAL		398

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	405	2	203
EB Thru/Right	1790	2	895
	TOTAL		895

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	693	2	346
WB	0	2	0
	TOTAL		346

Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	262	262	1
NB Thru/Rt	835	2	418
	TOTAL		418

ANALYSIS RESULTS

AM PEAK PERIOD

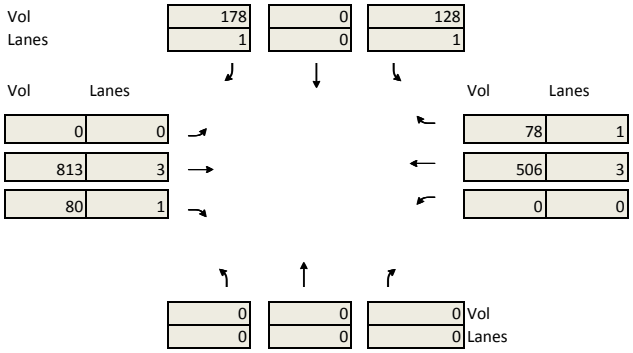
Total Volume = 1023
Capacity Condition = Under Capacity

PM PEAK PERIOD

Total Volume = 1659
Capacity Condition = Over Capacity

Number: 8
Intersection: 125 Ramps @ Birch Road
Study Scenario: Existing Plus Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	813	3	271
WB	0	4	0
	TOTAL		271

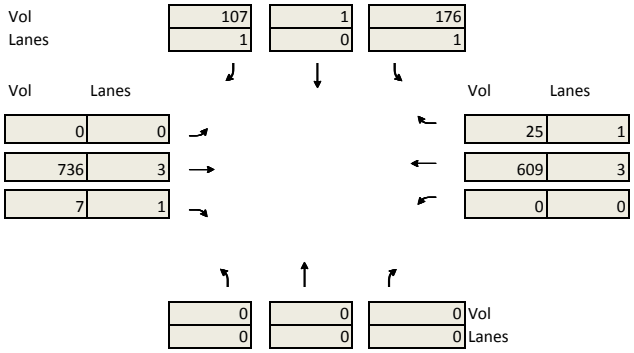
Phase 3

	Volume	Lanes	vpl
SB Left	128	1	128
SB Thru/Rt	178	1	178
	TOTAL		178

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	736	3	245
WB	0	4	0
	TOTAL		245

Phase 3

	Volume	Lanes	vpl
SB Left	176	1	176
SB Thru/Rt	108	1	108
	TOTAL		176

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

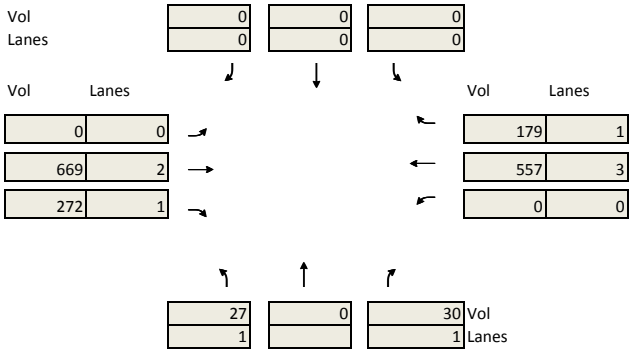
Total Volume = *449*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *421*
Capacity Condition = *Under Capacity*

Number: 9
Intersection: 125 NB @ Birch Rd
Study Scenario: Existing Plus Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	669	3	223
WB	0	3	0
	TOTAL		223

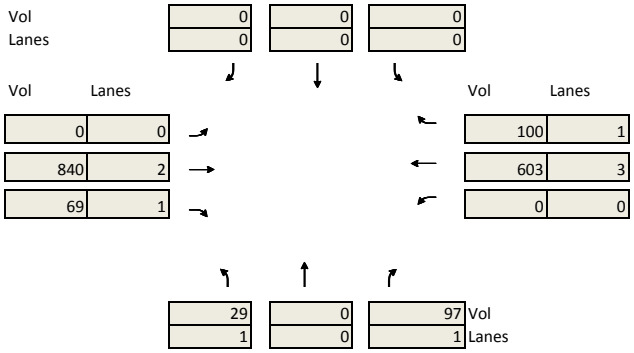
Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	27	1	27
NB Thru/Rt	30	1	30
	TOTAL		30

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	840	3	280
WB	0	3	0
	TOTAL		280

Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	29	29	1
NB Thru/Rt	97	1	97
	TOTAL		97

ANALYSIS RESULTS

AM PEAK PERIOD

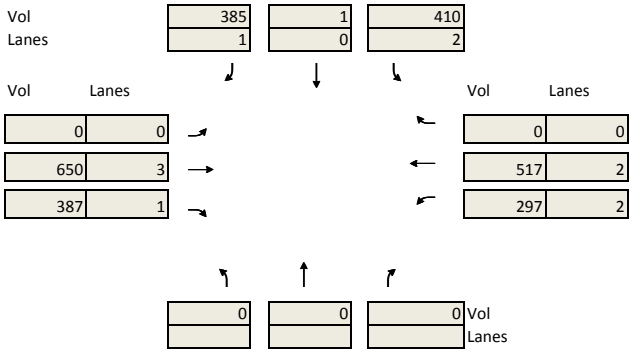
Total Volume = *253*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *377*
Capacity Condition = *Under Capacity*

Number: 11
Intersection: 805 SB Ramps @ Main Street
Study Scenario: Existing Plus Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	297	2	149
WB Thru/Right	517	2	259
	TOTAL		259

Phase 2

	Volume	Lanes	vpl
EB	650	4	163
WB	220	4	55
	TOTAL		163

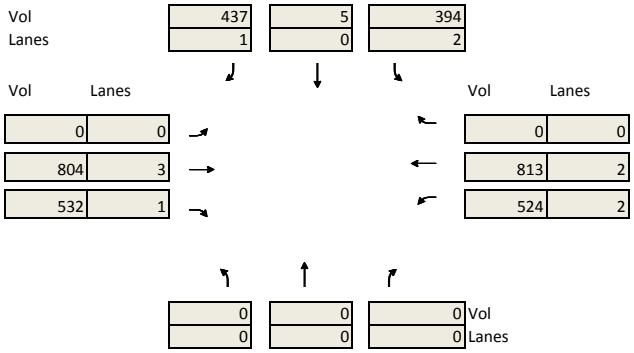
Phase 3

	Volume	Lanes	vpl
SB Left	410	1	410
SB Thru/Rt	386	2	193
	TOTAL		410

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	524	2	262
WB Thru/Right	813	2	407
	TOTAL		407

Phase 2

	Volume	Lanes	vpl
EB	804	4	201
WB	289	4	72
	TOTAL		201

Phase 3

	Volume	Lanes	vpl
SB Left	394	1	394
SB Thru/Rt	442	2	221
	TOTAL		394

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

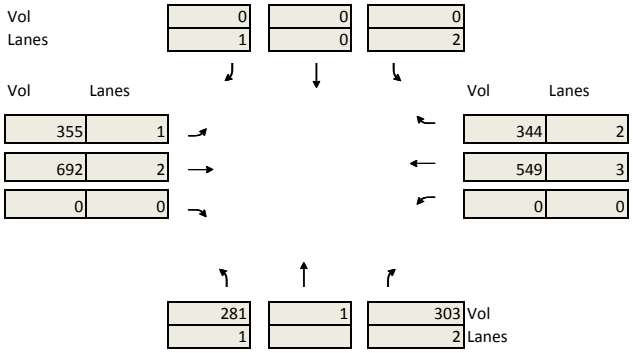
Total Volume = 831
Capacity Condition = Under Capacity

PM PEAK PERIOD

Total Volume = 1002
Capacity Condition = Under Capacity

Number: 12
Intersection: 805 NB Ramps @ Main Street
Study Scenario: Existing Plus Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	355	1	355
EB Thru/Right	692	2	346
	TOTAL		355

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	-9	3	-3
WB	0	2	0
	TOTAL		0

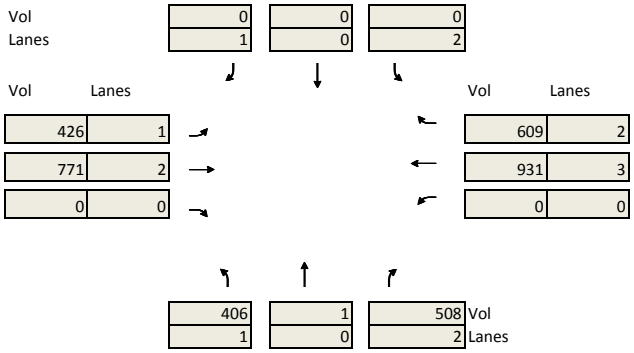
Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	281	1	281
NB Thru/Rt	304	2	152
	TOTAL		281

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	426	1	426
EB Thru/Right	771	2	386
	TOTAL		426

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	-41	3	-14
WB	0	2	0
	TOTAL		0

Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	406	406	1
NB Thru/Rt	509	2	255
	TOTAL		255

ANALYSIS RESULTS

AM PEAK PERIOD

Total Volume = 636
Capacity Condition = Under Capacity

PM PEAK PERIOD

Total Volume = 681
Capacity Condition = Under Capacity

Number: 1
Intersection: 805 SB Ramps @ Olympic Parkway
Study Scenario: 2020 + Project

PEAK PERIOD: AM

Vol	475	5	742
Lanes	1	0	2

Vol	Lanes		Vol	Lanes
0	0		0	0
1153	2		1014	2
340	1		1273	2

0	0	0	Vol
			Lanes

Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
		TOTAL	0

OR

	Volume	Lanes	vpl
WB Left	1273	2	637
WB Thru/Right	1014	2	507
		TOTAL	637

Phase 2

	Volume	Lanes	vpl
EB	1153	4	288
WB	-259	3	-86
		TOTAL	288

Phase 3

	Volume	Lanes	vpl
SB Left	742	1	742
SB Thru/Rt	480	2	240
		TOTAL	742

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
		TOTAL	0

PEAK PERIOD: PM

Vol	825	5	1286
Lanes	1	0	2

Vol	Lanes		Vol	Lanes
0	0		0	0
1274	2		1458	2
345	1		1459	2

0	0	0	Vol
0	0	0	Lanes

Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
		TOTAL	0

OR

	Volume	Lanes	vpl
WB Left	1459	2	730
WB Thru/Right	1458	2	729
		TOTAL	730

Phase 2

	Volume	Lanes	vpl
EB	1274	4	319
WB	-1	3	0
		TOTAL	319

Phase 3

	Volume	Lanes	vpl
SB Left	1286	1	1286
SB Thru/Rt	830	2	415
		TOTAL	1286

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
		TOTAL	0

ANALYSIS RESULTS

AM PEAK PERIOD

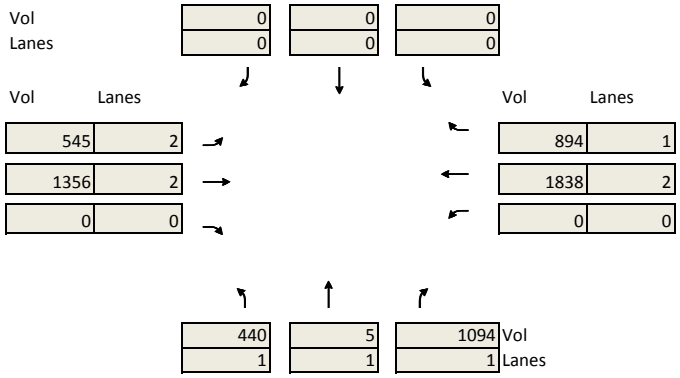
Total Volume = *1667*
Capacity Condition = *Over Capacity*

PM PEAK PERIOD

Total Volume = *2334*
Capacity Condition = *Over Capacity*

Number: 2
Intersection: 805 NB Ramps @ Olympic Parkway
Study Scenario: 2020 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	545	2	273
EB Thru/Right	1356	2	678
	TOTAL		678

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	406	2	203
WB	0	2	0
	TOTAL		203

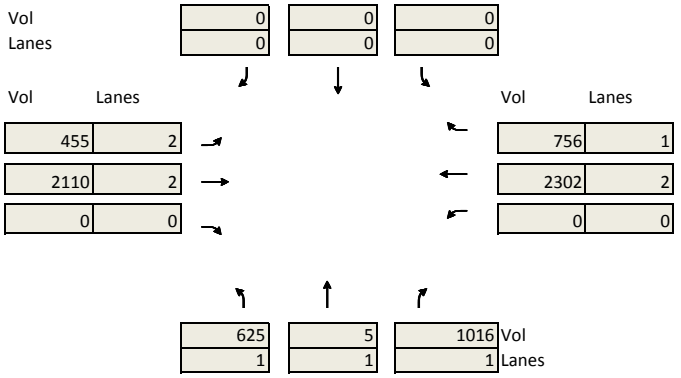
Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	440	1	440
NB Thru/Rt	1099	2	550
	TOTAL		550

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	455	2	228
EB Thru/Right	2110	2	1055
	TOTAL		1055

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	828	2	414
WB	0	2	0
	TOTAL		414

Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	625	625	1
NB Thru/Rt	1021	2	511
	TOTAL		511

ANALYSIS RESULTS

AM PEAK PERIOD

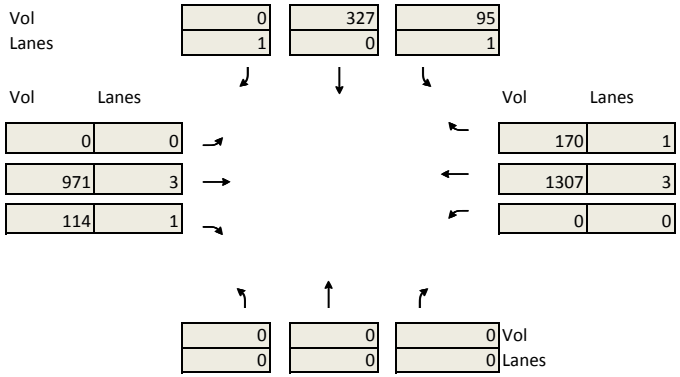
Total Volume = *1430*
Capacity Condition = *Capacity*

PM PEAK PERIOD

Total Volume = *1979*
Capacity Condition = *Over Capacity*

Number: 8
Intersection: 125 Ramps @ Birch Road
Study Scenario: 2020 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	971	3	324
WB	0	4	0
	TOTAL		324

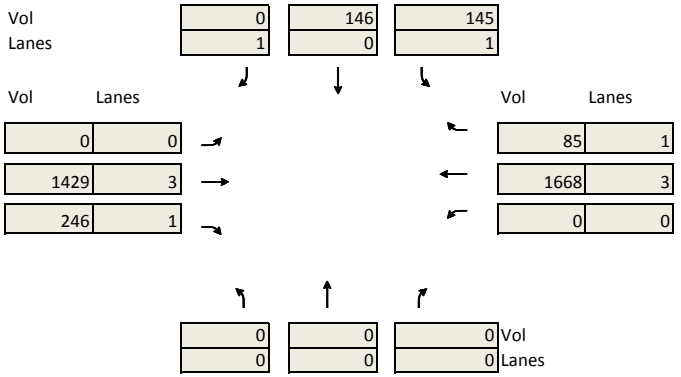
Phase 3

	Volume	Lanes	vpl
SB Left	95	1	95
SB Thru/Rt	327	1	327
	TOTAL		327

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1429	3	476
WB	0	4	0
	TOTAL		476

Phase 3

	Volume	Lanes	vpl
SB Left	145	1	145
SB Thru/Rt	146	1	146
	TOTAL		146

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

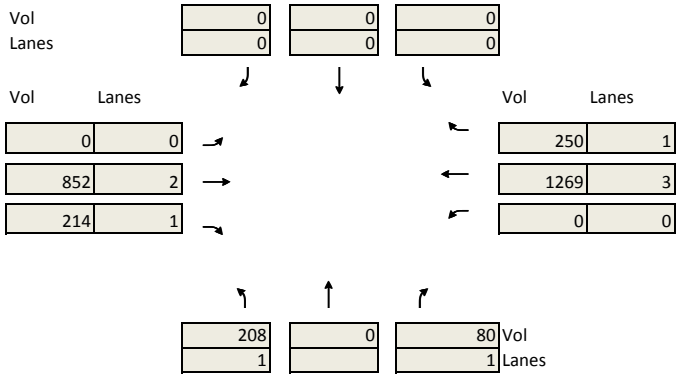
Total Volume = *651*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *622*
Capacity Condition = *Under Capacity*

Number: 9
Intersection: 125 NB @ Birch Rd
Study Scenario: 2020 + Project

PEAK PERIOD: AM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

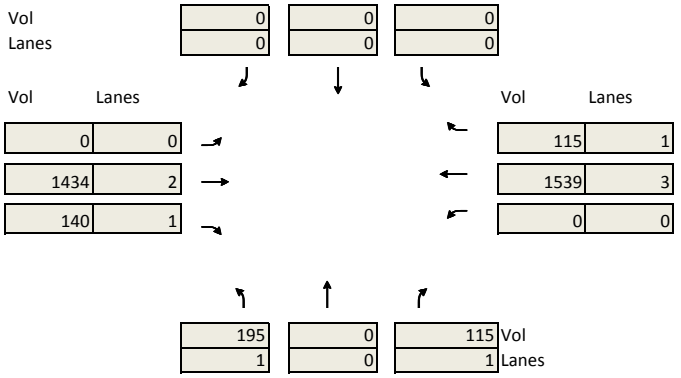
	Volume	Lanes	vpl
EB	852	3	284
WB	0	3	0
	TOTAL		284

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	208	1	208
NB Thru/Rt	80	1	80
	TOTAL		208

PEAK PERIOD: PM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1434	3	478
WB	0	3	0
	TOTAL		478

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	195	195	1
NB Thru/Rt	115	1	115
	TOTAL		115

ANALYSIS RESULTS

AM PEAK PERIOD

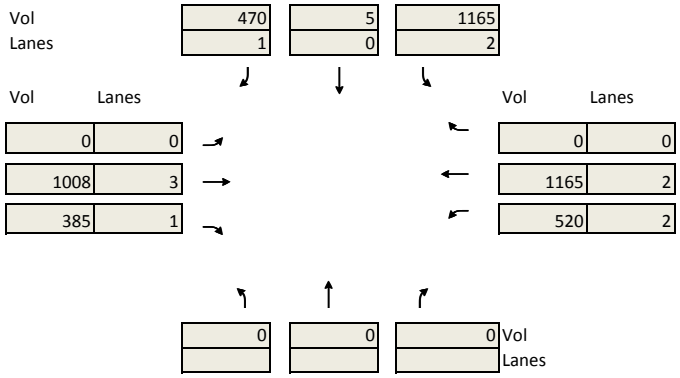
Total Volume = 492
Capacity Condition = Under Capacity

PM PEAK PERIOD

Total Volume = 593
Capacity Condition = Under Capacity

Number: 11
Intersection: 805 SB Ramps @ Main Street
Study Scenario: 2020 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	520	2	260
WB Thru/Right	1165	2	583
	TOTAL		583

Phase 2

	Volume	Lanes	vpl
EB	1008	4	252
WB	645	4	161
	TOTAL		252

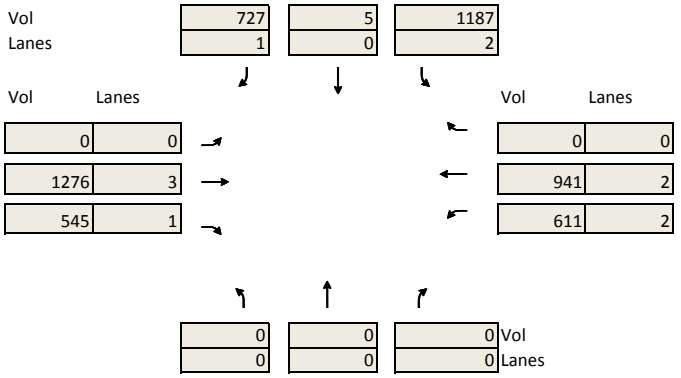
Phase 3

	Volume	Lanes	vpl
SB Left	1165	1	1165
SB Thru/Rt	475	2	238
	TOTAL		1165

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	611	2	306
WB Thru/Right	941	2	471
	TOTAL		471

Phase 2

	Volume	Lanes	vpl
EB	1276	4	319
WB	330	4	83
	TOTAL		319

Phase 3

	Volume	Lanes	vpl
SB Left	1187	1	1187
SB Thru/Rt	732	2	366
	TOTAL		1187

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

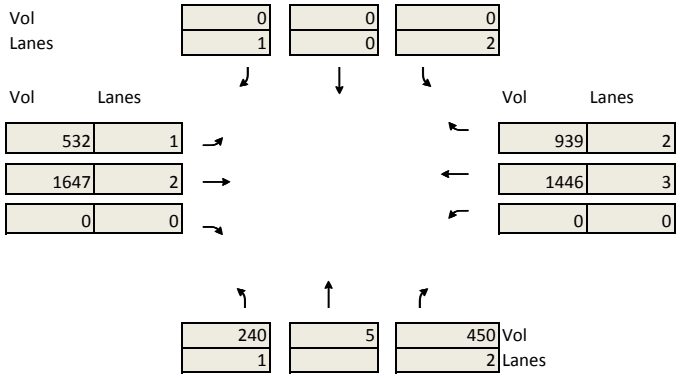
Total Volume = *2000*
Capacity Condition = *Over Capacity*

PM PEAK PERIOD

Total Volume = *1977*
Capacity Condition = *Over Capacity*

Number: 12
Intersection: 805 NB Ramps @ Main Street
Study Scenario: 2020 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	532	1	532
EB Thru/Right	1647	2	824
	TOTAL		824

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	292	3	97
WB	0	2	0
	TOTAL		97

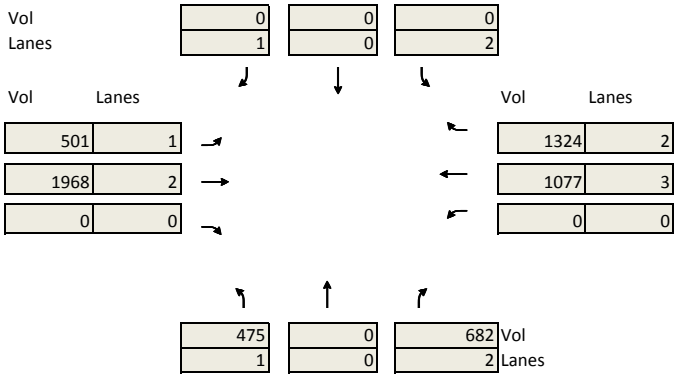
Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	240	1	240
NB Thru/Rt	455	2	228
	TOTAL		240

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	501	1	501
EB Thru/Right	1968	2	984
	TOTAL		984

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	483	3	161
WB	0	2	0
	TOTAL		161

Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	475	475	1
NB Thru/Rt	682	2	341
	TOTAL		341

ANALYSIS RESULTS

AM PEAK PERIOD

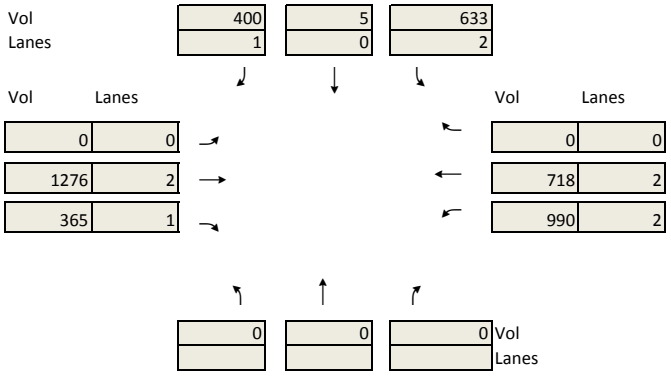
Total Volume = 1161
Capacity Condition = Under Capacity

PM PEAK PERIOD

Total Volume = 1486
Capacity Condition = Capacity

Number: 1
Intersection: 805 SB Ramps @ Olympic Parkway
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
		TOTAL	0

OR

	Volume	Lanes	vpl
WB Left	990	2	495
WB Thru/Right	718	2	359
		TOTAL	495

Phase 2

	Volume	Lanes	vpl
EB	1276	4	319
WB	-272	3	-91
		TOTAL	319

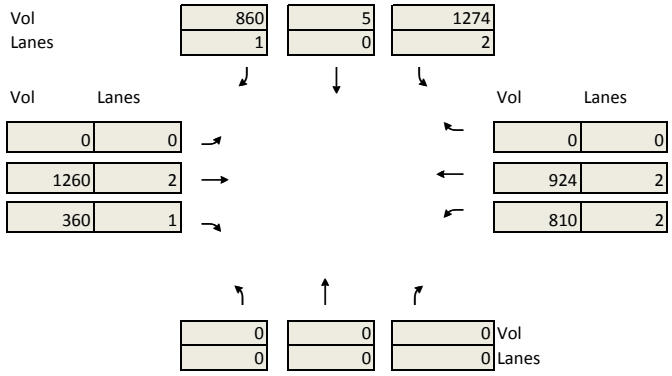
Phase 3

	Volume	Lanes	vpl
SB Left	633	1	633
SB Thru/Rt	405	2	203
		TOTAL	633

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
		TOTAL	0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
		TOTAL	0

OR

	Volume	Lanes	vpl
WB Left	810	2	405
WB Thru/Right	924	2	462
		TOTAL	462

Phase 2

	Volume	Lanes	vpl
EB	1260	4	315
WB	114	3	38
		TOTAL	315

Phase 3

	Volume	Lanes	vpl
SB Left	1274	1	1274
SB Thru/Rt	865	2	433
		TOTAL	1274

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
		TOTAL	0

ANALYSIS RESULTS

AM PEAK PERIOD

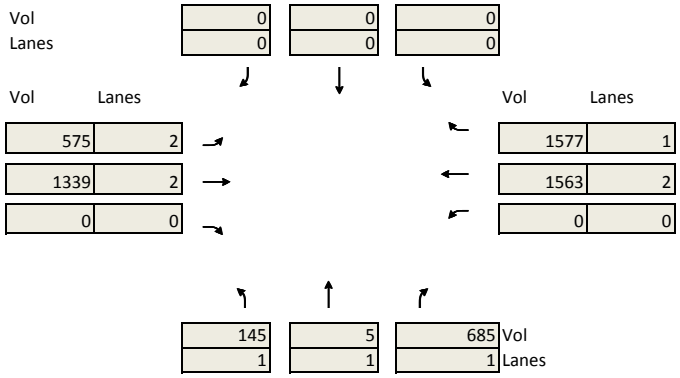
Total Volume = *1447*
Capacity Condition = *Capacity*

PM PEAK PERIOD

Total Volume = *2051*
Capacity Condition = *Over Capacity*

Number: 2
Intersection: 805 NB Ramps @ Olympic Parkway
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	575	2	288
EB Thru/Right	1339	2	670
	TOTAL		670

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	382	2	191
WB	0	2	0
	TOTAL		191

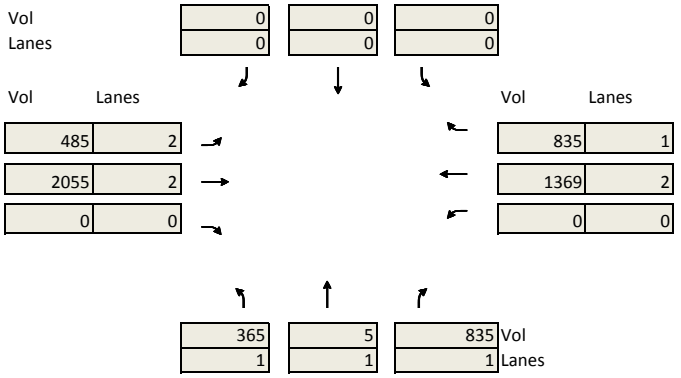
Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	145	1	145
NB Thru/Rt	690	2	345
	TOTAL		345

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	485	2	243
EB Thru/Right	2055	2	1028
	TOTAL		1028

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	3	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	785	2	393
WB	0	2	0
	TOTAL		393

Phase 3

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	365	365	1
NB Thru/Rt	840	2	420
	TOTAL		420

ANALYSIS RESULTS

AM PEAK PERIOD

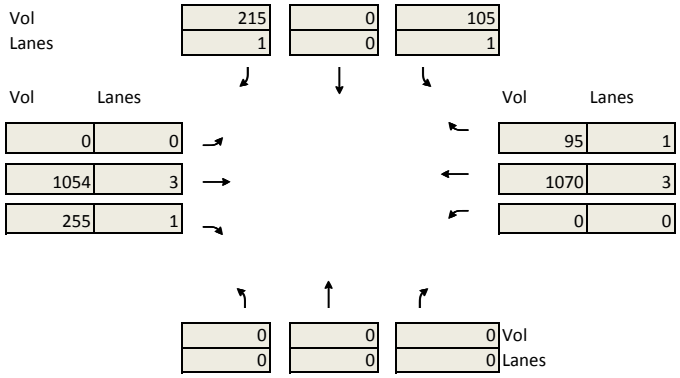
Total Volume = *1206*
Capacity Condition = *Capacity*

PM PEAK PERIOD

Total Volume = *1840*
Capacity Condition = *Over Capacity*

Number: 8
Intersection: 125 Ramps @ Birch Road
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1054	3	351
WB	0	4	0
	TOTAL		351

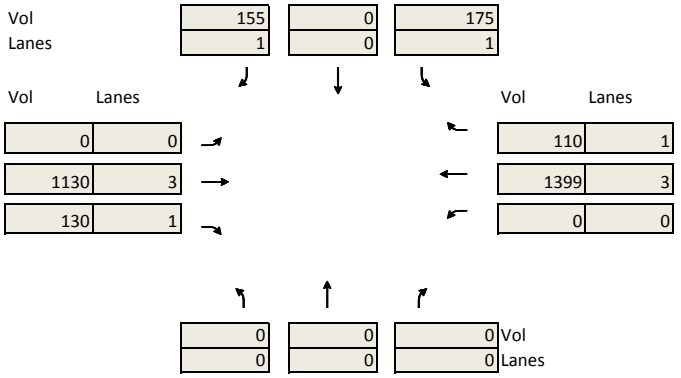
Phase 3

	Volume	Lanes	vpl
SB Left	105	1	105
SB Thru/Rt	215	1	215
	TOTAL		215

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1130	3	377
WB	0	4	0
	TOTAL		377

Phase 3

	Volume	Lanes	vpl
SB Left	175	1	175
SB Thru/Rt	155	1	155
	TOTAL		175

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

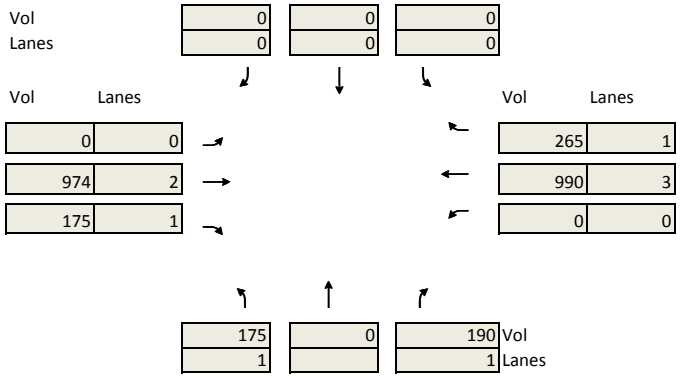
Total Volume = *566*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *552*
Capacity Condition = *Under Capacity*

Number: 9
Intersection: 125 NB @ Birch Rd
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

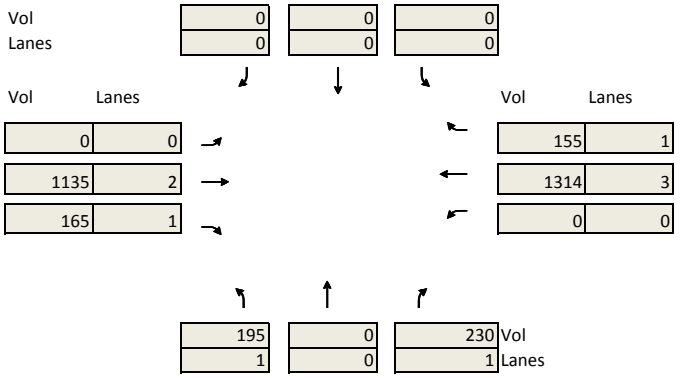
	Volume	Lanes	vpl
EB	974	3	325
WB	0	3	0
	TOTAL		325

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	175	1	175
NB Thru/Rt	190	1	190
	TOTAL		190

PEAK PERIOD: PM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	3	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1135	3	378
WB	0	3	0
	TOTAL		378

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	195	195	1
NB Thru/Rt	230	1	230
	TOTAL		230

ANALYSIS RESULTS

AM PEAK PERIOD

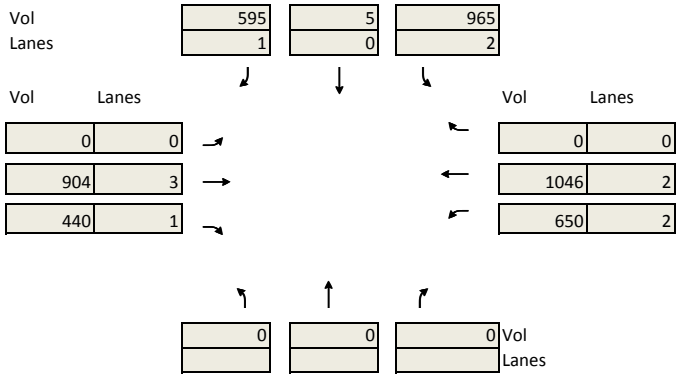
Total Volume = *515*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *608*
Capacity Condition = *Under Capacity*

Number: 11
Intersection: 805 SB Ramps @ Main Street
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	650	2	325
WB Thru/Right	1046	2	523
	TOTAL		523

Phase 2

	Volume	Lanes	vpl
EB	904	4	226
WB	396	4	99
	TOTAL		226

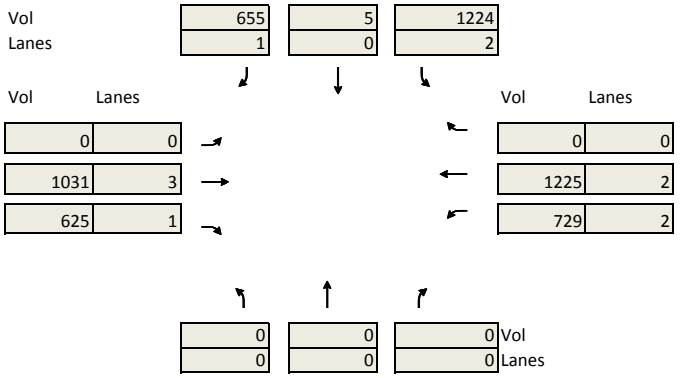
Phase 3

	Volume	Lanes	vpl
SB Left	965	1	965
SB Thru/Rt	600	2	300
	TOTAL		965

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	729	2	365
WB Thru/Right	1225	2	613
	TOTAL		613

Phase 2

	Volume	Lanes	vpl
EB	1031	4	258
WB	496	4	124
	TOTAL		258

Phase 3

	Volume	Lanes	vpl
SB Left	1224	1	1224
SB Thru/Rt	660	2	330
	TOTAL		1224

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

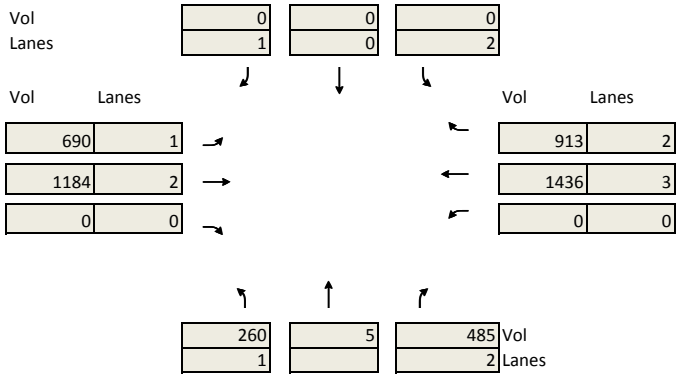
Total Volume = 1714
Capacity Condition = Over Capacity

PM PEAK PERIOD

Total Volume = 2094
Capacity Condition = Over Capacity

Number: 12
Intersection: 805 NB Ramps @ Main Street
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	690	1	690
EB Thru/Right	1184	2	592
	TOTAL		690

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	-98	3	-33
WB	0	2	0
	TOTAL		0

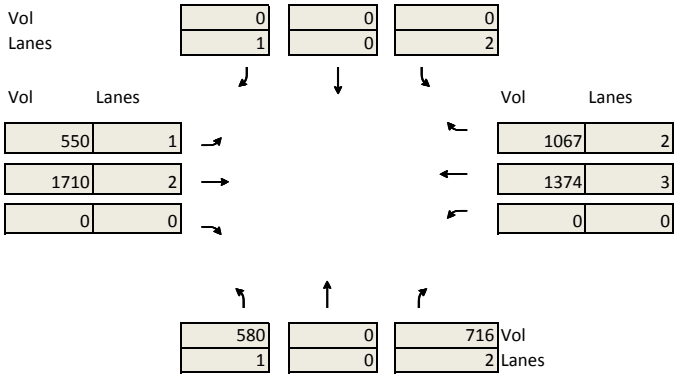
Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	260	1	260
NB Thru/Rt	490	2	245
	TOTAL		260

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	550	1	550
EB Thru/Right	1710	2	855
	TOTAL		855

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	5	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	305	3	102
WB	0	2	0
	TOTAL		102

Phase 3

	Volume	Lanes	vpl
SB Left	0	1	0
SB Thru/Rt	0	2	0
	TOTAL		0

OR

	Volume	Lanes	vpl
NB Left	580	580	1
NB Thru/Rt	716	2	358
	TOTAL		358

ANALYSIS RESULTS

AM PEAK PERIOD

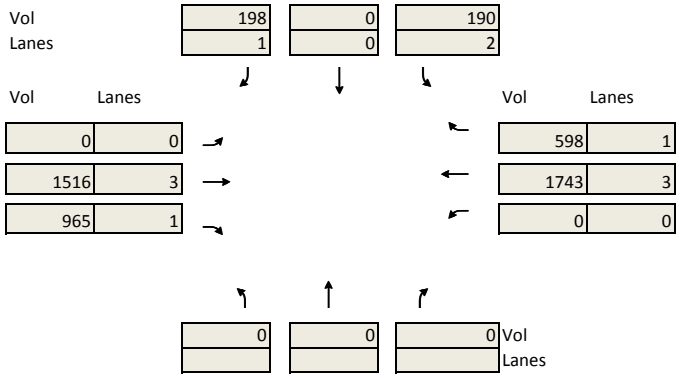
Total Volume = *950*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *1315*
Capacity Condition = *Capacity*

Number: 18
Intersection: 125 SB Ramps @ Main Street (Future)
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1516	3	505
WB	0	4	0
	TOTAL		505

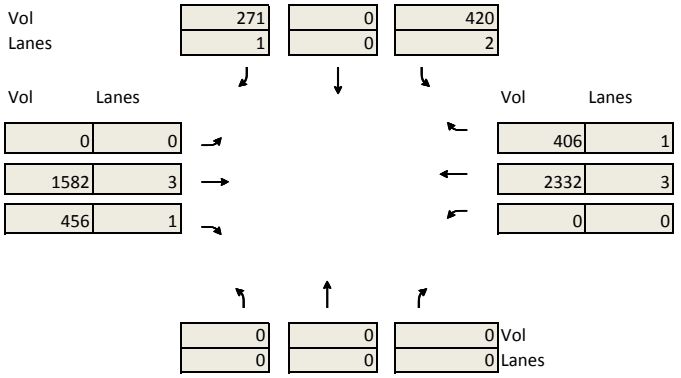
Phase 3

	Volume	Lanes	vpl
SB Left	190	1	190
SB Thru/Rt	198	2	99
	TOTAL		190

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

PEAK PERIOD: PM



Phase 1

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

OR

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1582	3	527
WB	0	4	0
	TOTAL		527

Phase 3

	Volume	Lanes	vpl
SB Left	420	1	420
SB Thru/Rt	271	2	136
	TOTAL		420

OR

	Volume	Lanes	vpl
NB Left	0	0	0
NB Thru/Rt	0	0	0
	TOTAL		0

ANALYSIS RESULTS

AM PEAK PERIOD

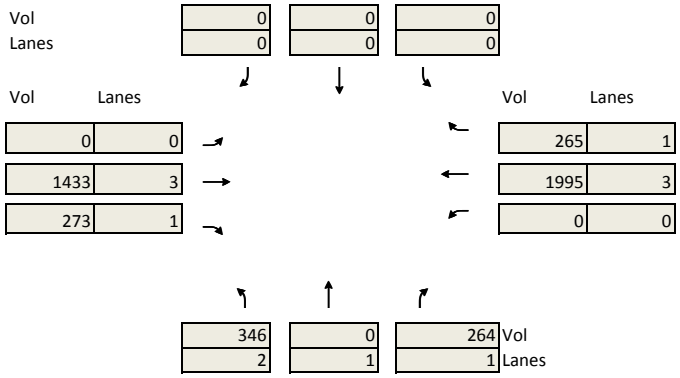
Total Volume = *695*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *947*
Capacity Condition = *Under Capacity*

Number: 19
Intersection: 125 NB Ramps @ Main Street (Future)
Study Scenario: 2030 + Project

PEAK PERIOD: AM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

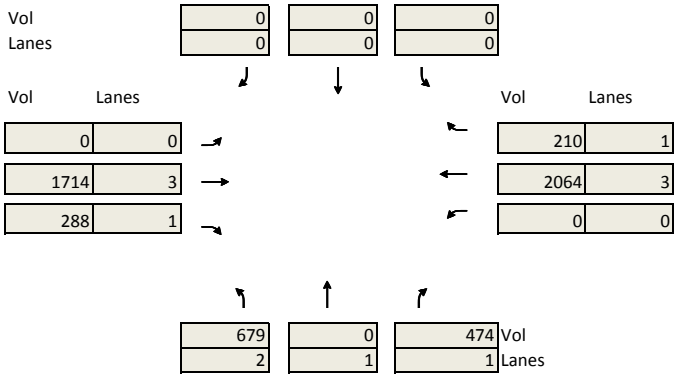
	Volume	Lanes	vpl
EB	1433	3	478
WB	0	4	0
	TOTAL		478

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	346	2	173
NB Thru/Rt	264	2	132
	TOTAL		173

PEAK PERIOD: PM



Phase 1 OR

	Volume	Lanes	vpl
EB Left	0	0	0
EB Thru/Right	0	4	0
	TOTAL		0

	Volume	Lanes	vpl
WB Left	0	0	0
WB Thru/Right	0	4	0
	TOTAL		0

Phase 2

	Volume	Lanes	vpl
EB	1714	3	571
WB	0	4	0
	TOTAL		571

Phase 3 OR

	Volume	Lanes	vpl
SB Left	0	0	0
SB Thru/Rt	0	0	0
	TOTAL		0

	Volume	Lanes	vpl
NB Left	679	679	1
NB Thru/Rt	474	2	237
	TOTAL		237

ANALYSIS RESULTS

AM PEAK PERIOD

Total Volume = *651*
Capacity Condition = *Under Capacity*

PM PEAK PERIOD

Total Volume = *808*
Capacity Condition = *Under Capacity*