Templeton Community 2017 Travel Demand Model and Circulation Study Update

Prepared for:

County of San Luis Obispo

Prepared by:

omni · means
A GHD company

Templeton Community 2017 Travel Demand Model and Circulation Study Update

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Introduction

The County of San Luis Obispo has retained Omni-Means to provide an update to the Templeton Circulation Study and Traffic Impact Fee (TIF). Included with this Circulation Study is also the update to the Templeton Travel Demand Model (TDM). In 2009, Omni-Means updated the Templeton TDM (*Templeton Circulation Study and Comprehensive Update*, October 2009), and previously upgraded the prior model to the *Cube* transportation planning software. The Circulation Study and TIF are updated approximately every five years to fulfill the requirements of Assemble Bill (AB) 1600.

The update of the "2015 Existing Conditions" traffic model has been calibrated and validated based on current land-use information, available transportation facilities, and new traffic count data collected by Omni-Means. The updated existing conditions model formed the basis for the "2035 Buildout Conditions" traffic model that was developed assuming buildout of land uses and construction of planned transportation facilities in the San Luis Obispo General Plan. The buildout conditions model has been developed in order to test alternative land use and/or circulation alternatives that will help assess the need, nature and timing of future circulation improvements within the Templeton Planning Area. The new Templeton traffic model will also be utilized as a planning analysis tool on a variety of traffic impact and circulation studies to assess land development proposals within the County as well as the continued update of the County's Capital Improvement Program (CIP) and Traffic Impact Fees (TIF).

This *Draft Report* is technical documentation in support of the Templeton Planning Area travel forecasts, resulting Circulation Study, CIP and subsequent TIF update. This report presents the methodology behind the development of the *2015 Existing Conditions*, summarizing the background data and technical components used in the development of the model, including the existing conditions calibration process. The development of the *2035 Buildout Conditions* is also summarized, including traffic projections rendered by the Templeton TDM as well as alternative circulation conditions tested in yielding the circulation plan recommendations.

Following the update to the circulation plan recommendations, the transportation impact fees were updated. The transportation impact fees proposed in this report have been calculated pursuant to the Mitigation Fee Act, as set for in Sections 66000 et seq. of the California Government Code (Assembly Bill 1600).

The Mitigation Fee Act was enacted by the California State legislature in 1987 and requires that all public agencies satisfy the following requirements when establishing, increasing, or imposing a fee as a condition of approval for a development project:

1. Identify the purpose of the fee;
2. Identify the use to which the fee will be put;
3. Determine that there is a reasonable relationship between the fee's use and the type of development on which the fee is imposed;
4. Determine how there is a reasonable relationship between the need for the public facility and the type of development on which the fee is imposed; and,
5. Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

The “reasonable relationship” test was supplemented by a test of “rough proportionality” in the 1994 United State Supreme Court decision *Dolan v. City of Tigard*. In this decision, the Court opined that, when a public agency requires an exaction from new development, the agency cannot rely solely on a general, qualitative relationship between a land use and required facility but must make a finding that the exaction is related to the proportional impact of that land use.

The Court specifically stated in its opinion that “no precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development.” This decision effectively added an additional finding that there is a rough proportionality between the amount of the fee and the impact of the development on which the fee is imposed.

As required by Government Code Section 66000 et seq. and subsequent court rulings, this report will show that a reasonable relationship exists between the calculated fee amounts and development land uses on which they are imposed. Additionally, it will be demonstrated that a rough proportionality exists between the impact of a land use on a facility and amount of the fee imposed on it.

This report is organized into the following Chapters:

- Chapter 1 - Introduction
- Chapter 2 - Background Conditions
- Chapter 3 – Base Year Traffic Model Development and Calibration
- Chapter 4 - Buildout Conditions Traffic Model Development
- Chapter 5 – Transportation Improvement Needs and Circulation Plan Recommendations
- Chapter 6 – Alternative Transportation Modes
- Chapter 7 – Cost Estimates and Funding Mechanisms, Including Transportation Impact Fees

Background Conditions

To initiate the update to the Circulations Study, TIF, and Templeton TDM, Omni-Means first needed to ascertain changes to the existing transportation system, land uses, and other background information since the last update was developed in 2009. To this end, Omni-Means reviewed available transportation and land use information useful in obtaining an understanding of existing or "baseline" travel patterns within and through the Templeton Planning Area. The update already had a solid background foundation from the previous model update from which to build the new Templeton TDM. The primary source of input data for this update came from parcel-based land use data and current traffic counts on critical transportation facilities.

Available sources of transportation and land use information pertinent to San Luis Obispo County that were obtained and reviewed included the following:

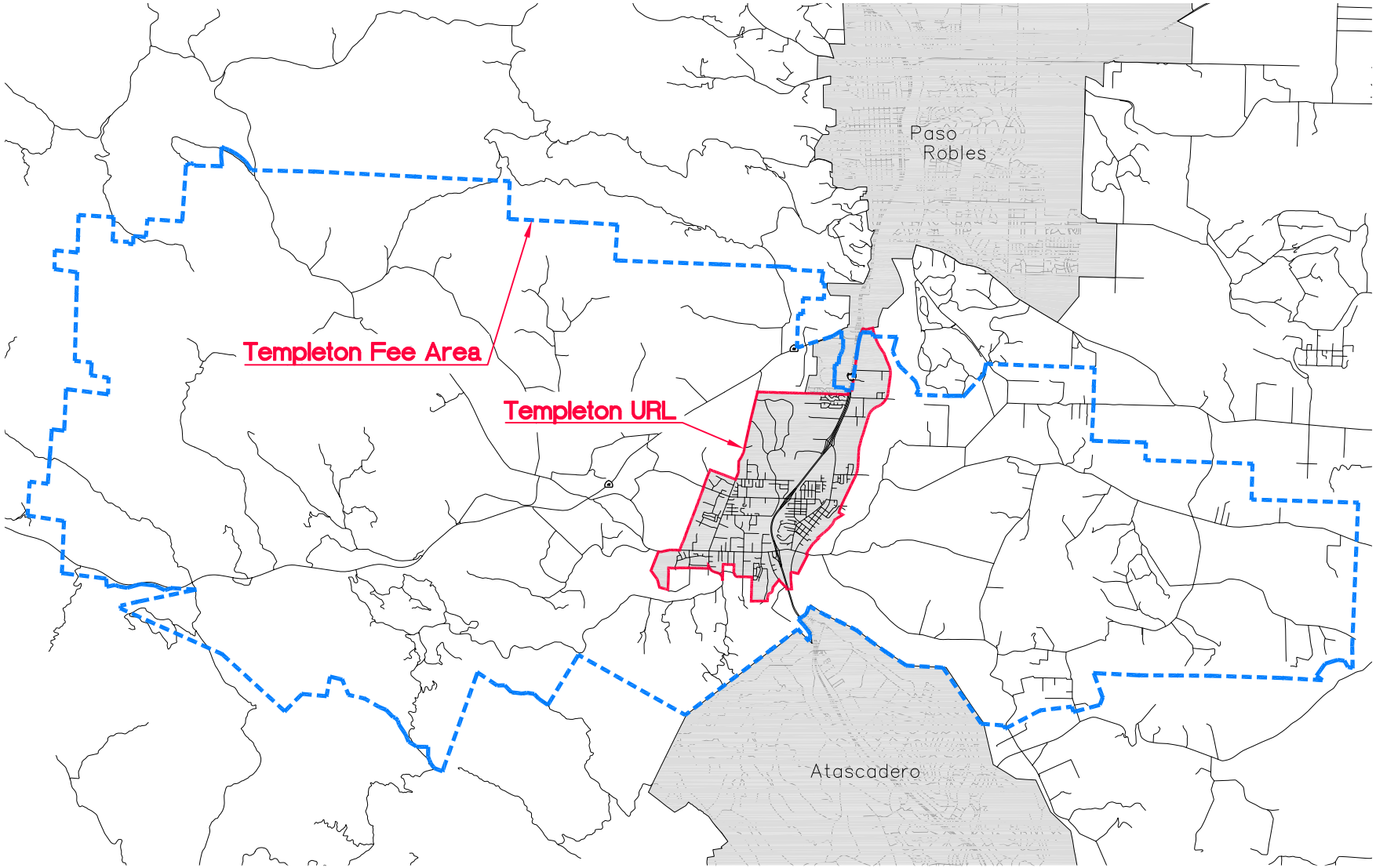
- San Luis Obispo County General Plan Land Use and Circulation Element (LUCE).
- GIS database (in *ArcGIS* format) from the County that contained Assessor's Parcel mapping, General Plan land use designations, current zoning, overlay designations, land use symbols, planning areas and urban limit line information, etc.
- Assessor Parcel Land Use database (in digital format) showing current land development for parcels within the Templeton Planning Area.
- Recent traffic count data obtained from Caltrans data publications, as well as new traffic counts conducted by Omni-Means in May 2015, as well as County data for 2015.
- Field (windshield) survey of roadway, land development and travel conditions along the Templeton street system.
- Most recent aerial photographs of the Templeton Planning Area.
- US Census Bureau, Census 2000 and 2010 data for San Luis Obispo County and within the Templeton Planning Area. Current population is estimated.
- Miscellaneous traffic circulation studies and traffic impact studies recently completed for the County.

Existing Setting

San Luis Obispo County is along the Pacific coastline in Central California, north of Santa Barbara. San Luis Obispo County consists of seven incorporated cities and multiple unincorporated communities. Templeton is an unincorporated community located in northern San Luis Obispo County along US 101, and south of SR 46 West, approximately 5 miles south of the City of Paso Robles and 5 miles north of the City of Atascadero. In addition to U.S. 101 passing through the community, the Salinas River and the Union Pacific Railroad (UP) also traverse in a north-south direction along the east edge of the community. Templeton is a rural community, surrounded by agricultural land, which consists primarily of ranches and vineyards.

U.S. 101 is the primary highway providing regional access. U.S. 101 is an interstate that provides access to Los Angeles, San Jose, and traverses the coastline to Oregon and Washington. Population within the region has seen fluctuations between 2000 and 2010. Population fluctuations change the transportation needs of the surrounding community. Based on the data from the U.S. Census Bureau for 2000 and 2010, San Luis Obispo County population has increased by approximately 23,000 individuals from 246,681 in 2000 to 269,637 in 2010, a .89% compound annual growth rate.

The Templeton area, for the purposes of this TDM update, circulation study and traffic impact fee update has its own boundary established by the Board of Supervisors with a distinct Fee Area within the study area, as shown in Figure 1. Within this Fee Area is the Templeton Community Plan Area (Urban Reserve Line), also as shown in Figure 1. Templeton is approximately 7.7 square miles, the second-largest area within San Luis Obispo County and has a population growth of 2,987 individuals between 2000 and 2010, from 4,687 to 7,674 people. This 63.7 percent increase in growth is believed to be fairly representative of the growth experienced within the Fee Area. These population fluxes cause future transportation needs to vary. These variations will be considered with the Circulation Plan and Traffic Impact Fee update. Figure 1 shows the study area and vicinity map.



2015 Templeton TDM & Circulation Study Update

Figure 1

Study Area Map

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Commute Trends

The following section will examine recent trends and current facts regarding commuter mode-choice and travel times within San Luis Obispo County. Data from the United States Census Bureau's 2009-2013 American Community Survey forms the basis of the following demographic analysis. Table 1 presents the various means of transportation reported in the County for 2000, and between 2009 and 2013.

TABLE 1
MEANS OF TRANSPORTATION AND CARPOOLING STATISTICS

Means of Transportation and Carpooling	2000		2009-2013	
	Number	Percent	Number	Percent
Workers 16 and over	2,147	100.0%	3,437	100.0%
Car, Truck, or Van:				
Drove Alone	1,686	78.5%	2,581	75.1%
Carpooled	326	15.2%	599	17.4%
Public Transportation (excludes taxi)	9	0.4%	14	0.4%
Motorcycle or Other Means	25	1.2%	53	1.5%
Walked	31	1.4%	32	0.9%
Worked at home	62	2.9%	158	4.6%

Sources:
1. U.S. Census Bureau; Census 2000 Summary File 3
2. U.S. Census Bureau; 2009-2013 5-Year American Community Survey

As presented in Table 1, the number of workers in the County has increased between 2000 and 2013. This increase in workers is approximately 60%, comparable to Templeton's population growth of 40%. Overall, these statistics indicate a consistent trend of a large percentage of commuters driving alone. Carpooling has increased while walking has decreased. Working at home has also slightly increased, possibly due to advances in technology.

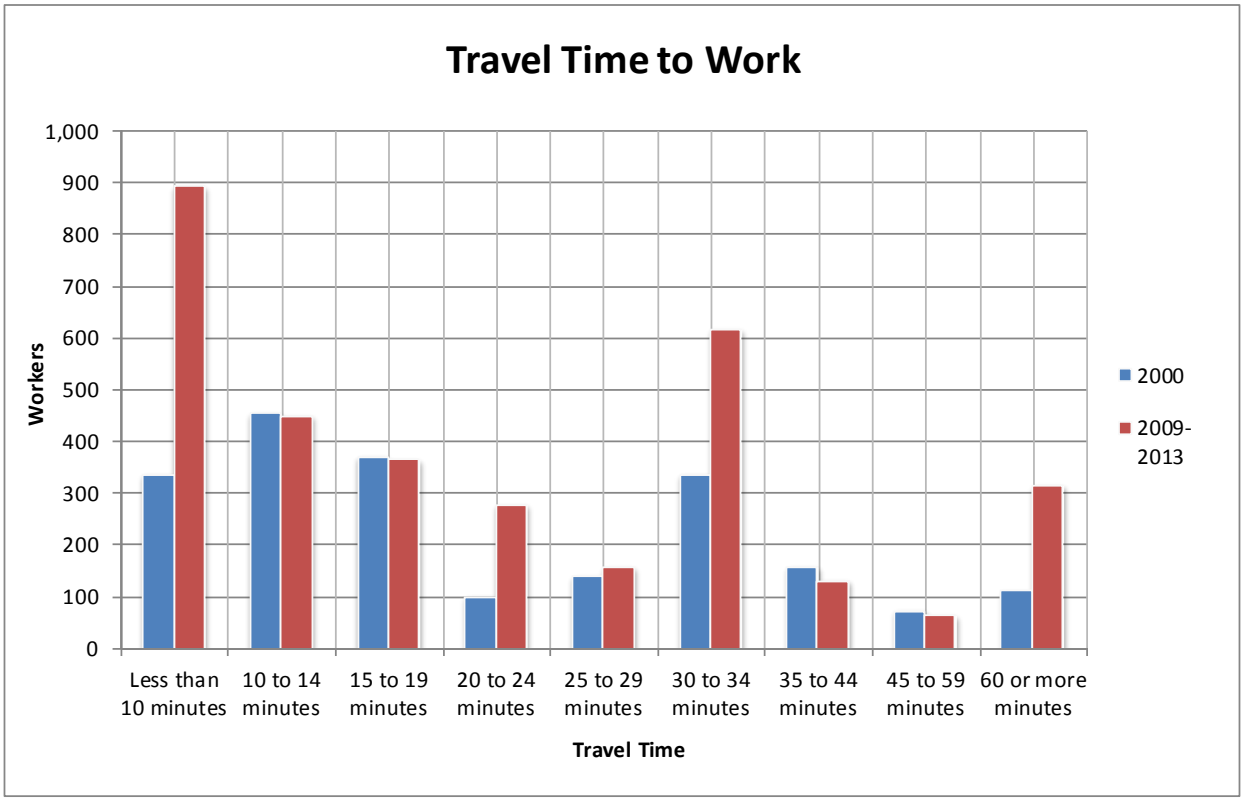
Table 2 and Figure 2 present the reported travel times for commuters in 2000, and between 2009 and 2013. The average travel time to work has relatively been consistent between 19.9 and 20 minutes. More than 60% of commuters spend less than 30 minutes commuting. Also, approximately 41% had a commute less than 15 minutes, indicating relatively low rush hour congestion and a presumably high amount of localized employment.

TABLE 2
TRAVEL TIME TO WORK

Travel Time to Work	2000		2009-2013	
	Number	Percent	Number	Percent
Did not work at home:	2,085	97.1%	3,279	95.4%
Less than 10 minutes	337	16.2%	895	27.3%
10 to 14 minutes	455	21.8%	451	13.8%
15 to 19 minutes	371	17.8%	366	11.2%
20 to 24 minutes	101	4.8%	279	8.5%
25 to 29 minutes	140	6.7%	158	4.8%
30 to 34 minutes	337	16.2%	618	18.8%
35 to 44 minutes	158	7.6%	132	4.0%
45 to 59 minutes	74	3.5%	64	2.0%
60 or more minutes	112	5.4%	316	9.6%
Mean Travel Time (minutes)	20.0		19.9	

Sources:
1. U.S. Census Bureau; Census 2000 Summary File 3
2. U.S. Census Bureau; 2009-2013 5-Year American Community Survey

FIGURE 2 - TRAVEL TIME TO WORK



Existing Roadway Network

The existing physical conditions for the Templeton roadway network are described below. A hierarchy of streets provides access to and from residential, commercial, and industrial uses throughout the County and beyond. A route's design, including its cross-section, is determined by its functional classification and its projected traffic levels to achieve “safe and convenient movement at the development intensity anticipated in the Land Use Element.”

State Freeways

Controlled access facilities whose junctions are free of at-grade crossing with other roadways, railways, or pedestrian pathways, and instead are served by interchange facilities are classified as Freeways. Freeways usually have posted speed limits up to 70 mph. The following freeway services the Templeton region:

> ***U.S. Highway 101 (US 101)*** is a major north-south interstate that traverses along coastal California. US 101 serves as the principal inter-regional auto and truck travel route that connects San Luis Obispo County (and other portions of the Central Coast) with the Los Angeles urban basin to the south, the San Francisco Bay Area to the north, and beyond to Oregon and Washington. Within San Luis Obispo County, US 101 provides major connections between and through several cities. Through Templeton, US 101 represents a major commuter travel route and has a four-lane divided cross-section. Within the study area, US 101 forms full access interchanges with State Route 46, Main Street, Las Tablas Road, and Vineyard Drive.

State Highways

Controlled access facilities whose junctions with cross streets are characterized by at-grade intersections rather than interchanges are classified as highways. Highways can either be divided or undivided roadways, with speed limits up to 55 mph. The following highways service the Templeton area:

> ***State Route 46 (SR 46/Green Valley Road)*** is a state highway that runs predominantly in an east-west direction. SR 46 (West) branches off of US 101 north of Templeton and traverses west, terminating at SR 1. SR 46 connects the Templeton area to Cambria and other coastal communities. SR 46 represents a significant recreational and rural travel route that connects to US 101, as well as a commuter route. There is a break in the route between Templeton and Paso Robles along US 101. SR 46 (East) continues east from Paso Robles until SR 99 in Kern County. Through the Templeton area, SR 46 is a conventional two-lane highway. A diamond interchange is located at U.S. 101 while at-grade intersections are provided at Bethel Road and Vineyard Drive.

Arterial Streets

Major arterial facilities serve to connect areas of major activity within the urban area and function primarily to distribute cross-town traffic from freeways/highways to collector streets. Within the Templeton area, arterial streets are mostly two lane facilities. In addition, two lane arterial facilities with two-way left-turn lanes generally have limited access to adjacent land uses. The following arterials service the Templeton area:

> ***Main Street*** is primarily a north-south undivided arterial between U.S. 101 and Templeton High School. Main Street provides access to downtown Templeton, and is a

two-lane arterial through most of its route; north of downtown (Gibson Road) Main Street has a center left turn lane and bike lanes. Main Street provides a full access interchange with US 101.

Collectors and Local Streets

Collectors function as connector routes between local and arterial streets providing access to residential, commercial, and industrial property. Local streets provide direct access to abutting properties and allow for localized movement of traffic. Local streets are characterized by low daily volumes.

Bethel Road is a north-south two-lane collector west of US 101 which runs between SR 46 and continues as Santa Rita Road at Santa Rita Road, south of Vineyard Drive. Bethel Road serves as a major collector for many residential areas.

El Pomar Drive is primarily an east-west two-lane collector. El Pomar Drive runs from Templeton Road and terminates at Cripple Creek Road to the east. El Pomar Drive serves as a major collector for residential and agricultural lands east of Templeton.

Florence Street is primarily a north-south two-lane collector which runs between Las Tablas Road and Old County Road. Florence Street connects to the Downtown Templeton area via 6th Street.

Las Tablas Road is primarily an east-west two-lane collector between Old County Road and Winery Road. However, in between US 101 and Bethel Road, Las Tablas Road is classified as an arterial with two lanes and a center left turn lane. Las Tablas Road provides a full access interchange with US 101. Las Tablas Road serves as a major collector for residential areas, commercial businesses, and the Twin Cities Community Hospital.

Neal Springs Road is primarily an east-west two-lane collector. Neal Springs Road runs from El Pomar Drive and Creston Road to the east. Neal Springs Road serves as a collector for residential and agricultural lands east of Templeton.

Ramada Drive is a north-south two-lane collector. Ramada Drive is the frontage road to the east of US 101 between the Main Street interchange and north of the SR 46 West interchange. North of SR 46 West, Ramada Drive dead-ends at the railroad tracks. Ramada Drive serves the industrial uses between the Main Street and SR 46 West interchanges, and also serves the commercial uses northeast of the SR 46 West interchange.

Rossi Road is a two-lane north-south collector which is located between Bennett Way and US 101, south of Vineyard Drive. Rossi Road connects residential areas and the Trader Joe's shopping center to Vineyard Drive.

S. El Pomar Road is a two-lane north-south collector which runs between Templeton Road to El Pomar Drive, connecting the agricultural lands in between.

Templeton Road is a two-lane collector. Templeton Road primarily runs east-west from Main Street/Vineyard Drive, then northwest-southeast between El Pomar Drive and SR

41. Templeton Road provides access over the Salinas River and Union Pacific Railroad tracks to agricultural/rural areas southeast of Templeton.

Theater Drive is a north-south two-lane collector. Theater Drive is the frontage road to the west of US 101 between the Main Street interchange and SR 46 West. Theater Drive serves the commercial uses southwest of the SR 46 West interchange, as well as the residential and industrial areas.

Vineyard Drive is a major east-west two-lane collector which transitions from Templeton Road at Main Street and continues west terminating at Adelaida Road, in Adelaida. Vineyard Drive provides access to many vineyards/wineries west of Templeton, and serves residential areas in Templeton. Vineyard Drive is designated as an arterial between Main Street and Bennett Way, and provides a full access interchange with US 101.

Existing Traffic Data Collection

Roadway Segments

For the purposes of understanding existing traffic conditions as well as for developing basic inputs to the Templeton traffic model, existing average daily traffic (ADT) counts were collected at critical locations within the County's planning area. Omni-Means received ADT counts collected May 17-23, and May 31- June 6, 2015 (recorded at 60-minute intervals over a continuous 7-day period), from the County for the following 42 key roadway segments:

1. State Route 46 West – East of Bethel Road
2. State Route 46 West – West of Vineyard Drive
3. Bennett Way – South of Vineyard Drive
4. Bennett Way – South of Las Tablas Road
5. Bennett Way – North of Las Tablas Road
6. Bethel Road – South of Vineyard Drive
7. Bethel Road – North of Vineyard Drive
8. Bethel Road – North of Brambles Court
9. El Pomar Drive – North of Templeton Road
10. El Pomar Drive – West of South El Pomar Drive
11. Florence Street – West of Old County Road
12. Las Tablas Road – West of Bethel Road
13. Las Tablas Road – East of Bethel Road
14. Las Tablas Road – West of Duncan Road
15. Las Tablas Road – West of Florence Street
16. Las Tablas Road – West of Old County Road
17. Main Street – North of Vineyard Drive
18. Main Street – South of Vineyard Drive
19. Main Street – North of Sixth Street
20. Main Street – North of Creekside Ranch Road
21. Neal Springs Road – North of El Pomar Drive
22. Old County Road – North of Vineyard Drive
23. Old County Road – North of Florence Street
24. Peterson Ranch Road – East of Bethel Road
25. Ramada Drive – North of Main Street
26. Ramada Drive – South of State Route 46 West

27. River Road – North of Neal Springs Road
28. Rossi Road – South of Vineyard Drive
29. Santa Rita Road – South of Vineyard Drive
30. Santa Rita Road – South of Templeton Hills Road
31. Sixth Street – West of Main Street
32. South El Pomar Road – East of Templeton Road
33. Templeton Road – East of Main Street
34. Templeton Road – South of El Pomar Drive
35. Templeton Hills Road – East of Bethel Road
36. Theater Drive – South of Templeton Cemetery Road
37. Theater Drive – South of State Route 46 West
38. Vineyard Drive – West of State Route 46 West
39. Vineyard Drive – West of Bethel Road
40. Vineyard Drive – East of Bethel Road
41. Vineyard Drive – West of U.S. 101
42. Vineyard Drive – East of U.S. 101

Intersections

To supplement the average daily traffic counts collected along select roadway segments and to provide background conditions for the study intersections, Omni-Means also received AM and PM peak hour turning movement counts from the County at 27 key intersections, collected May 19-21, 2015. The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 AM and 9:00 AM on a typical weekday. The PM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 4:00 PM and 6:00 PM on a typical weekday, when schools are in session. The following list of critical study intersections were established for this study in coordination with San Luis Obispo County staff, and are analyzed within this study for weekday AM and PM peak hour conditions:

1. Vineyard Drive at Main Street
2. Vineyard Drive at Old County Road
3. Vineyard Drive at U.S. 101 Northbound Ramps
4. Vineyard Drive at U.S. 101 Southbound Ramps
5. Vineyard Drive at Rossi Road
6. Vineyard Drive at Bennett Way
7. Vineyard Drive at Bethel Road
8. Main Street at Theater Drive
9. Main Street at Ramada Drive
10. Main Street at Gibson Road
11. Main Street at 6th Street
12. Main Street at 8th Street
13. Las Tablas Road at Old County Road
14. Las Tablas Road at Florence Street
15. Las Tablas Road at Bennett Way
16. Las Tablas Road at Bethel Road
17. State Route 46 West at Vineyard Drive
18. State Route 46 West at Bethel Road
19. State Route 46 West at U.S. 101 Northbound Ramps
20. State Route 46 West at U.S. 101 Southbound Ramps

21. State Route 46 West at Ramada Drive
22. State Route 46 West at Theater Drive
23. Las Tablas Road at U.S. 101 Northbound Ramps
24. Las Tablas Road at U.S. 101 Southbound Ramps
25. Main Street at U.S. 101 Northbound Ramps
26. Main Street at U.S. 101 Southbound Ramps
27. State Route 46 West at South Vine Street

These counts will provide the baseline conditions for roadway and intersections facilities throughout Templeton. These volumes will help calibrate both existing and future traffic volume forecasts.

Figure 3 presents the Existing Average Daily Traffic (ADT) on the roadways within Templeton. Figure 4 presents the study intersections and their locations. Figure 5 presents the Existing lane geometrics and control at the study intersections. Figure 6 presents the Existing AM and PM peak hour volumes at the study intersections.

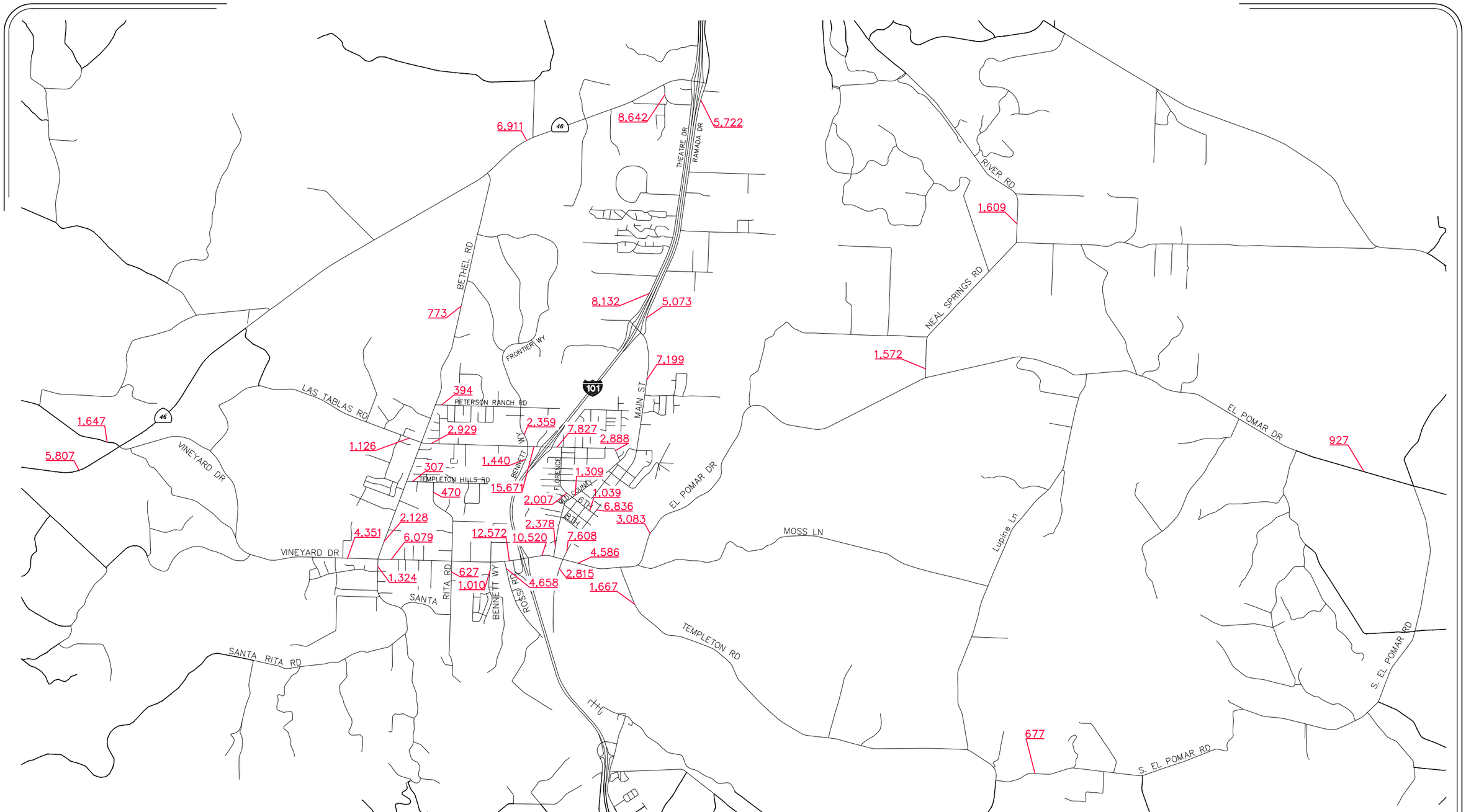


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Figure 3

Existing Average Daily Traffic (ADT)

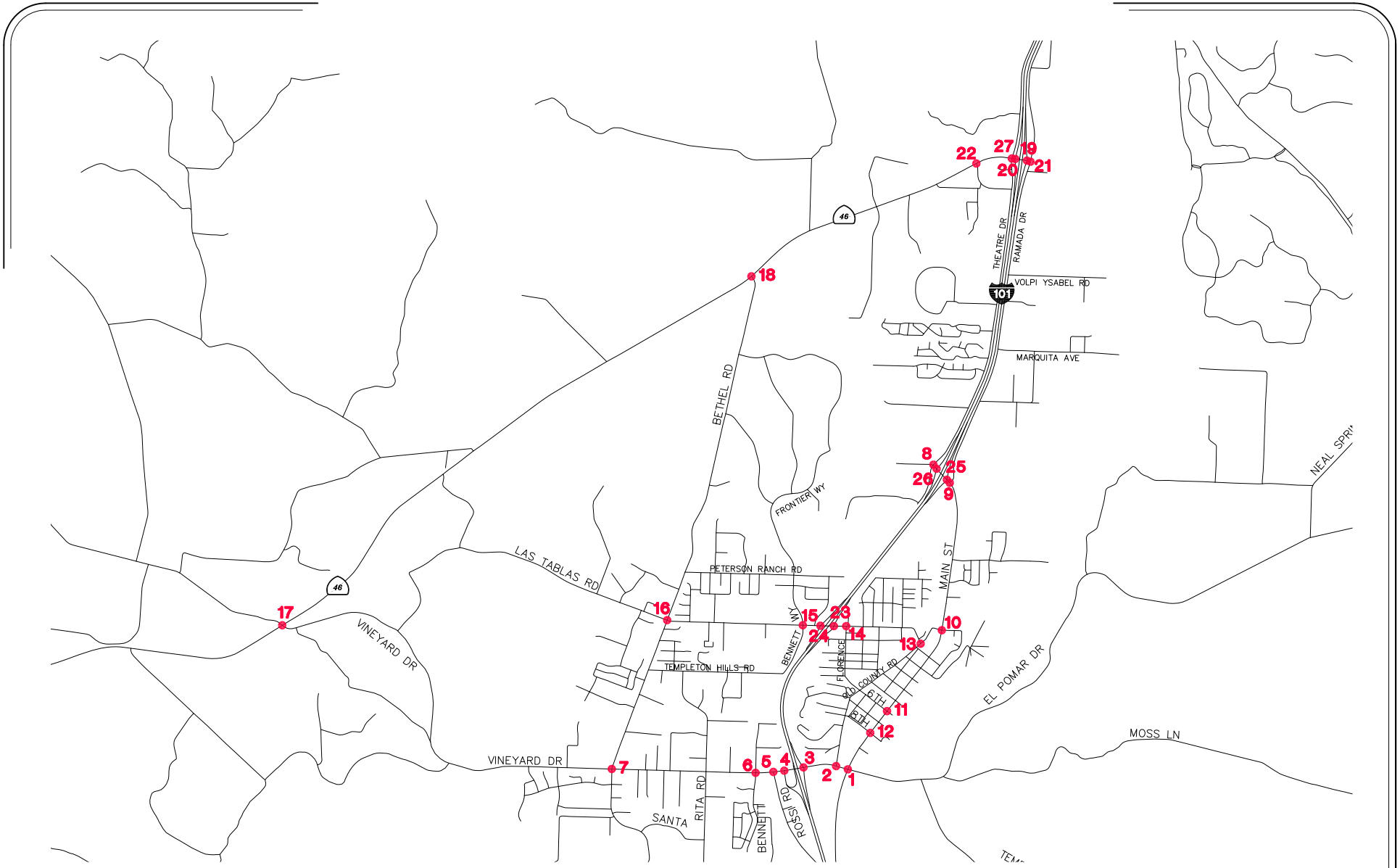

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Figure 4

Study Intersection Locations

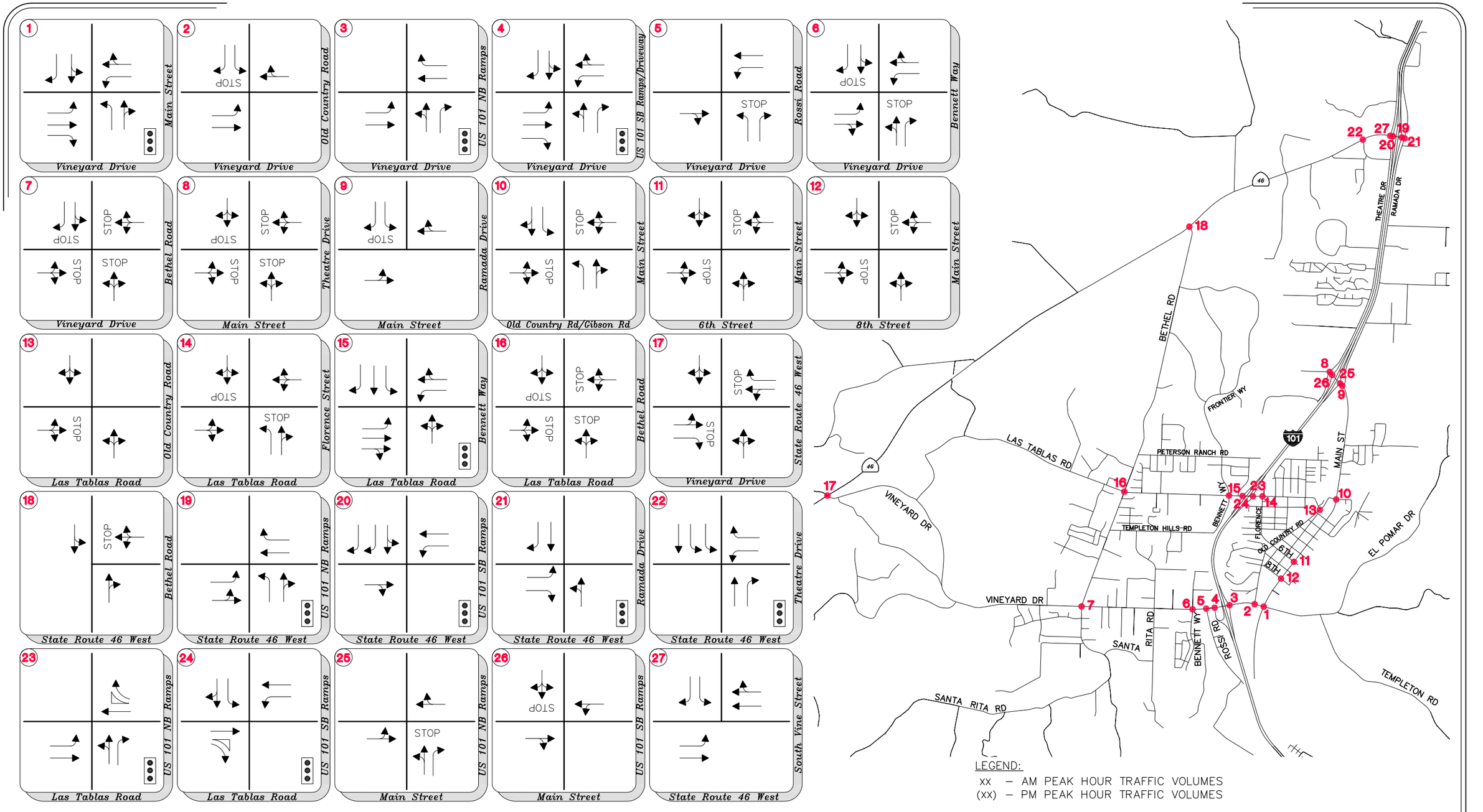

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Figure 5

Existing Lane Geometrics and Controls

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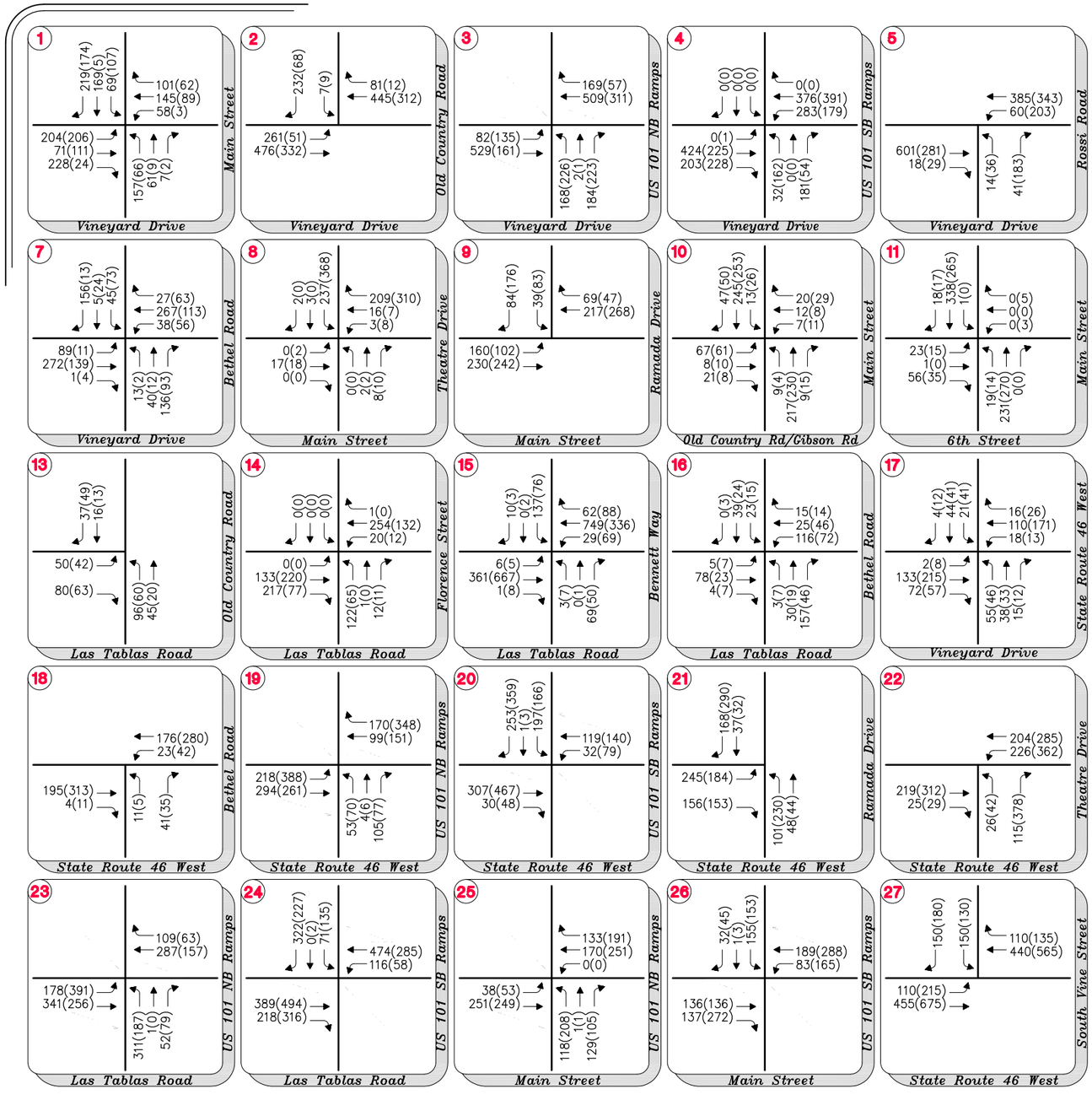

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Figure 6

Existing Peak Hour Traffic Volumes

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Levels of Service (LOS) Methodology

Existing conditions traffic operations have been quantified through determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions presented on a letter grade scale from "A" to "F", whereby LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. The following section outlines the methodology and analysis parameters used to quantify existing conditions.

Roadway Capacity

Roadway segment Level of Service was estimated using average daily traffic (ADT) based LOS thresholds. Table 3 presents the roadway capacities used in calculating the roadway LOS for the study locations.

TABLE 3
DAILY ROADWAY CAPACITIES BY FACILITY TYPE

	Average Daily Traffic (ADT) – Total of Both Directions				
Roadway Type	**A**	**B**	**C**	**D**	**E**
Four-Lane Freeway	28,000	43,200	61,600	74,400	80,000
Two-Lane Highway	12,000	14,000	16,000	18,000	20,000
Four-Lane Arterial (w/LTL)	22,000	25,000	29,000	32,500	36,000
Four-Lane Arterial (No LTL)	18,000	21,000	24,000	27,000	30,000
Three-Lane Arterial	16,200	18,900	21,600	24,300	27,000
Two-Lane Arterial (w/LTL)	11,000	12,500	14,500	16,000	18,000
Two-Lane Arterial (No LTL)	9,000	10,500	12,000	13,500	15,000
Two-Lane Roundabout Arterial	14,300	16,250	18,850	20,800	23,400
Four-Lane Collector	12,000	15,000	18,000	21,000	24,000
Two-Lane Collector	6,000	7,500	9,000	10,500	12,000
Two-Lane Local	1,000	2,000	3,000	4,000	5,000

Notes:
1. Based on the *South County Traffic Model Update 2006 Annual Report and Fifth Year Update.*
2. w/LTL indicates arterials with either continuous center left turn lane (LTL) or left turn lanes at major intersections. No LTL indicates arterials withouth left turn lanes (LTL) at most major intersections. Three-Lane Arterials are normally considered for roadways with center turn lanes, in addition this roadway type is considered for Las Tablas Road with one lane westbound and two lanes eastbound.
4. Daily volume to capacity on freeways does not supplant the need to perform peak-hour HCM-based analysis.
5. Roundabout Arterials indicate facilities with roundabouts as an intersection control.

However, County maintained arterials and collectors without two-way left-turn lanes (TWLTL's) with a speed limit greater than or equal to 45 mph and a Buildout ADT greater than 6,000 vpd were also analyzed using the Highway Capacity Manual Two-Lane Highway methodology.

Intersection Level of Service

Intersection Level of Service (LOS) was calculated for all control types using the methods documented in the Transportation Research Board publications *Highway Capacity Manual, Fifth Edition, 2010*. For a signalized or all-way stop-controlled (AWSC) intersection, an LOS determination is based on the calculated averaged delay for all approaches and movements. For a two-way stop controlled (TWSC) intersection, an LOS determination is based upon the calculated average delay for all movements of the worst-performing approach. LOS definitions for different types of intersection controls are presented in Table 4.

TABLE 4
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle		
				Signalized	Un signalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	< 10.0	< 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and < 20.0	>10.0 and < 15.0	>10.0 and < 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and < 35.0	>15.0 and < 25.0	>15.0 and < 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and < 55.0	>25.0 and < 35.0	>25.0 and < 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and < 80.0	>35.0 and < 50.0	>35.0 and < 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

Level of Service Policy

Caltrans' Guide for the Preparation of Traffic Impact Studies contains the following policy pertaining to the LOS standards within Caltrans jurisdiction:

> *Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.*

Per the County of San Luis Obispo:

> *"The current County policy calls for LOS "D" or better service on roadways in urban areas and LOS "C" on rural roads."*

Consistent with the Caltrans and County policies, this study will consider LOS "C" as the standard acceptable threshold for all study intersections and roadways in the jurisdiction of Caltrans and areas maintained by the State (i.e., ramp intersections, and intersections along State Highways), LOS "C" as the standard acceptable threshold for all study intersections and roadways outside the Urban Reserve Limit line and maintained by Caltrans, and LOS "D" as the standard acceptable threshold for all study intersections and roadways inside the Urban Reserve Limit line maintained by the County of San Luis Obispo.

To determine whether "significance" should be associated with unsignalized intersection operations, a supplemental traffic signal "warrant" analysis has also been completed, and is included in the Appendix. The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise unsignalized intersection. This study has employed the signal warrant criteria presented in the latest edition of the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD),* as amended by the *MUTCD 2014 California Supplement,* for all study intersections. The signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, frequency of accidents, location of school areas etc. Both the FHWA's MUTCD and the *MUTCD 2014 California Supplement* indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. The ultimate decision to signalize an intersection should be determined after careful analysis of all intersection and area characteristics.

This traffic study will specifically utilize the Peak-Hour-Volume based Warrant 3 as one representative type of traffic signal warrant analysis. Warrant 3 criteria are basically identical for both the FHWA's MUTCD and the *MUTCD 2014 California Supplement*. Since Warrant 3 provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating at above 40 mph), study intersections which use this specialized criteria will be clearly identified.

This traffic study focuses on a "planning level" evaluation of traffic operating conditions, which is considered sufficient for CEQA/NEPA purposes. The planning level evaluation incorporates appropriate heavy vehicle adjustment factors, peak hour factors, and signal lost time factors and reports the resulting intersection delays and LOS as estimated using the HCM 2010 based analysis methodologies. Based on discussions with the County, a Peak Hour Factor (PHF) consistent with existing traffic counts was applied in the analysis of all study intersections under

all scenarios. The *Synchro 8 (*Trafficware) software program was used to implement the HCM 2010 analysis methodologies, except for isolated intersections where the geometry limited the software's capability, i.e. Main Street at Theater Drive, and *SimTraffic* software was used. *Synchro 8* has the capability to produce results using both HCM 2000 and 2010 methodologies, and takes into account intersection signal phasing and queuing constraints when calculating delay, the corresponding delay, and queue lengths. Assessments of “design level” parameters (including queuing on intersection lane groups, stacking length requirements, etc.) have not been included in this study. *SimTraffic* analysis software was also used to determine the 95th percentile queue lengths for the closely spaced intersections at the interchanges.

Existing Traffic Operations

Existing roadway LOS was determined on an average weekday daily basis with counts collected by San Luis Obispo County in May 2015. Existing roadway segment LOS were estimated using LOS thresholds indicated in Table 3. Table 5 presents a summary of the existing LOS for critical study segments within Templeton's planning area.

Existing intersection counts were collected at 26 locations throughout the Templeton area. Intersections were analyzed using Synchro 8 (Trafficware). Existing AM and PM peak hour intersection traffic operations were quantified utilizing the existing intersection lane geometrics and controls (Figure 5) and the existing traffic volumes (Figure 6). Table 6 contains a summary of the existing intersection analysis and LOS conditions.

In addition, queuing analysis is included for the closely spaced intersections at the interchanges with US 101 (Vineyard Drive, Las Tablas Road, Main Street, and SR 46 West), to present any capacity issues which are not evident in the roadway or intersection summary tables. The queuing analysis was completed using the SimTraffic software, and the maximum of AM of PM peak hour 95th percentile queues are presented in Tables 7,8, 9, and 10.

TABLE 5
EXISTING CONDITIONS: ROADWAY LEVEL OF SERVICE

Roadway	Location	Facility Type	Daily Count Year	Daily Count	Target LOS	Estimated Existing LOS
S.R. 46 West	East of Bethel Road	Two-Lane Highway	2015	6,911	C	A
	West of Vineyard Drive	Two-Lane Highway	2015	5,807	C	A
Bennett Way	South of Vineyard Drive	Two-Lane Collector	2015	1,010	D	A
	South of Las Tablas Road	Two-Lane Collector	2015	1,440	D	A
	North of Las Tablas Road	Two-Lane Collector	2015	2,359	D	A
Bethel Road	South of Vineyard Drive	Two-Lane Collector	2015	1,324	D	A
	North of Vineyard Drive	Two-Lane Collector	2015	2,128	D	A
	North of Brambles Court	Two-Lane Collector	2015	773	D	A
El Pomar Drive	North of Templeton Road	Two-Lane Collector	2015	3,083	C	A
	West of South El Pomar Road	Two-Lane Collector	2015	927	C	A
Florence Street	West of Old County Road	Two-Lane Collector	2015	2,007	D	A
Las Tablas Road	West of Bethel Road	Two-Lane Collector	2015	1,126	D	A
	East of Bethel Road	Two-Lane Arterial (w/LTL)	2015	2,929	D	A
	West of Duncan	Three-Lane Arterial	2015	15,671	D	A
	West of Florence Street	Two-Lane Collector	2015	7,827	D	C
	West of Old County Road	Two-Lane Collector	2015	2,888	D	A
Main Street	North of Vineyard Drive	Two-Lane Arterial (No LTL)	2015	7,608	D	A
	South of Vineyard Drive	Two-Lane Arterial (No LTL)	2015	2,815	D	A
	North of Sixth Street	Two-Lane Arterial (No LTL)	2015	6,836	D	A
	North of Creekside Ranch Road*	Two-Lane Arterial (No LTL)	2015	7,199	D	C
Neal Springs Road	North of El Pomar Drive	Two-Lane Collector	2015	1,572	C	A
Old County Road	North of Vineyard Drive	Two-Lane Collector	2015	2,378	D	A
	North of Florence Street	Two-Lane Collector	2015	1,309	D	A
Peterson Ranch Road	East of Bethel Road	Two-Lane Collector	2015	394	D	A
Ramada Drive	North of Main Street*	Two-Lane Collector	2015	5,073	D	C
	South of S.R. 46 West*	Two-Lane Collector	2015	5,722	D	C
River Road	North of Neal Springs	Two-Lane Collector	2015	1,609	C	A
Rossi Road	South of Vineyard Drive	Two-Lane Collector	2015	4,658	D	A
Santa Rita Road	South of Vineyard Drive	Two-Lane Collector	2015	627	D	A
	South of Templeton Hills Road	Two-Lane Collector	2015	470	D	A
Sixth Street	West of Main Street	Two-Lane Collector	2015	1,039	D	A
South El Pomar Road	East of Templeton Road	Two-Lane Collector	2015	677	C	A
Templeton Road	East of Main Street	Two-Lane Collector	2015	4,586	D	A
	South of El Pomar Drive	Two-Lane Collector	2015	1,667	C	A
Templeton Hills Road	East of Bethel Road	Two-Lane Collector	2015	307	D	A
Theatre Drive	South of Templeton Cemetery Road*	Two-Lane Collector	2015	8,132	D	C
Vineyard Drive	West of S.R. 46 West	Two-Lane Collector	2015	1,647	C	A
	West of Bethel Road	Two-Lane Collector	2015	4,351	D	A
	East of Bethel Road*	Two-Lane Collector	2015	6,079	D	D
	West of U.S. 101	Two-Lane Arterial (w/LTL)	2015	12,572	D	C
	East of U.S. 101	Two-Lane Arterial (w/LTL)	2015	10,520	D	A

** LOS for County maintained arterials and collectors with no TWLTL, Buildout ADT > 6,000 vpd and a speed limit greater than or equal to 45 mph were analyzed using the HCM two-lane highway methodology.*

TABLE 6
EXISTING CONDITIONS: INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour		Signal Warrant Met?
				Delay	LOS	Delay	LOS	
1	Vineyard Dr/ Main St	Signal	D	26.8	C	21.7	C	
2	Vineyard Dr/ Old County Rd	TWSC	D	17.8	C	11.4	B	
3	Vineyard Dr/ US 101 NB Ramps	Signal	C	14.0	B	22.0	C	
4	Vineyard Dr/ US 101 SB Ramps	Signal	C	21.2	C	14.9	B	
5	Vineyard Dr/ Rossi Rd	TWSC	D	17.9	C	14.6	B	
6	Vineyard Dr/ Bennett Way	TWSC	D	23.1	C	14.2	B	
7	Vineyard Dr/ Bethel Rd	AWSC	D	17.1	C	9.8	A	
8	Main St./ Theatre Dr[3,4]	TWSC	D	6.0	A	6.7	A	
9	Main St/ Ramada Dr[4]	TWSC	D	17.1	C	16.5	C	
10	Main St/ Gibson Rd	TWSC	D	15.9	C	16.6	C	
11	Main St/ 6th St	TWSC	D	13.0	B	11.7	B	
12	Main St/ 8th St	TWSC	D	15.5	C	11.7	B	
13	Las Tablas Rd/ Old County Rd	TWSC	D	10.1	B	9.6	A	
14	Las Tablas Rd/ Florence St	TWSC	D	17.6	C	13.5	B	
15	Las Tablas Rd/ Bennett Wy	Signal	D	14.5	B	8.1	A	
16	Las Tablas Rd/ Bethel Rd	AWSC	D	8.7	A	6.9	A	
17	SR 46/ Vineyard Dr	TWSC	C	12.7	B	16.7	C	
18	SR 46/ Bethel Rd	TWSC	C	10.2	B	11.2	B	
19	SR 46/ US 101 NB Ramps[4]	Signal	C	13.2	B	19.0	B	
20	SR 46/ US 101 SB Ramps[4]	Signal	C	20.1	C	22.0	C	
21	SR 46/ Ramada Dr[4]	Signal	C	16.2	B	24.9	C	
22	SR 46/ Theatre Dr	Signal	C	9.4	A	15.1	B	
23	Las Tablas Rd/ US 101 NB Ramps	Signal	C	13.8	B	12.1	B	
24	Las Tablas Rd/ US 101 SB Ramps	Signal	C	16.2	B	18.3	B	
25	**Main St/ US 101 NB Ramps[4]**	**TWSC**	**C**	16.7	C	**33.2**	**D**	
26	**Main St/ US 101 SB Ramps[4]**	**TWSC**	**C**	**32.4**	**D**	**171.5**	**F**	Yes
27	SR 46/Vine Street[4]	Signal	C	14.7	B	24.2	C	

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT

3. Main St/Theatre Dr is a three-way stop-controlled intersection and was analyzed using SimTraffic

4. Intersection experiences significant queuing which cannot be quantified using the Synchro software. These queues may affect upstream intersection operations and could impact the progression between adjacent intersections.

TABLE 7
VINEYARD DRIVE/US 101 INTERCHANGE EXISTING CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
3	***Vineyard Drive/US 101 NB Ramps***		**--**	**--**
	Eastbound Left	Signal	**108**	80
	Eastbound Thru		102	-
	Westbound Thru		167	-
	Westbound Right		29	200
	Northbound Left/Thru		196	-
	Northbound Right		94	190
4	***Vineyard Drive/US 101 SB Ramps***		**--**	**--**
	Eastbound Left	Signal	24	60
	Eastbound Thru		203	-
	Eastbound Right		71	225
	Westbound Left		219	240
	Westbound Thru/Right		80	-
	Northbound Left/Thru		157	-
	Northbound Right		85	170
	Southbound Left/Thru		0	-
	Southbound Right		0	50
5	***Vineyard Drive/Rossi Road***		**--**	**--**
	Eastbound Thru/rRght	Signal	24	-
	Westbound Left		69	120
	Westbound Thru		0	-
	Northbound Left		39	-
	Northbound Right		70	105

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak hour.
2. Available storage for thru movements is the distance until the upstream intersection.

TABLE 8
LAS TABLAS ROAD/US 101 INTERCHANGE EXISTING CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
15	***Las Tablas Rd/Bennett Wy***		**--**	**--**
	Eastbound Left	Signal	19	150
	Eastbound Thru/Right		86	-
	Westbound Left		65	150
	Westbound Thru/Right		233	420
	Northbound Left/Thru/Right		61	-
	Southbound Left		**122**	120
	Southbound Thru		13	-
	Southbound Right		30	115
24	***Las Tablas Rd/US 101 SB Ramps***		**--**	**--**
	Eastbound Thru	Signal	169	420
	Eastboun Right		34	420
	Westbound Left		**99**	55
	Westbound Thru		191	225
	Southbound Left		**63**	25
	Southbound Thru/Right		263	-
23	***Las Tablas Rd/US 101 NB Ramps***		**--**	**--**
	Eastbound Left	Signal	**116**	50
	Eastbound Thru		158	190
	Westbound Thru		194	230
	Westbound Right		97	100
	Northbound Left/Thru		199	-
	Northbound Right		49	385
14	***Las Tablas Rd/Florence St***		**--**	**--**
	Eastbound Left/Thru/Right	Signal	9	-
	Westbound Left/Thru/Right		59	-
	Northbound Left		87	-
	Northbound Thru/Right		33	100
	Southbound Left/Thru/Right		0	-

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak hour.
2. Available storage for thru movements is the distance until the upstream intersection.

TABLE 9
MAIN STREET/US 101 INTERCHANGE EXISTING CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage[2]
8	***Main St/Theater Dr***			
	Eastbound Left/Thru/Right	TWSC	39	-
	Westbound Left/Thru/Right		10	75
	Northbound Left/Thru/Right		34	-
	Southbound Left/Thru/Right		87	-
26	***Main St/US 101 SB Ramps***			
	Eastbound Thru/Right	TWSC	16	75
	Westbound Left/Thru		135	325
	Southbound Left/Thru/Right		**202**	750
25	***Main St/US 101 NB Ramps***			
	Eastbound Left/Thru	TWSC	49	325
	Westbound Thru/Right		**69**	75
	Northbound Left/Thru		**161**	550
	Northbound Right		61	25
9	***Main St/Ramada Dr***			
	Eastbound Left/Thru	TWSC	79	75
	Westbound Thru/Right		11	-
	Southbound Left		109	-
	Southbound Right		**61**	50

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak ho

2. Available storage for thru movements is the distance until the upstream inter

TABLE 10
SR 46 WEST/US 101 INTERCHANGE EXISTING CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
27	***SR 46W/South Vine Street***			
	Eastbound Left	Signal	**702**	440
	Eastbound Thru		**1213**	870
	Westbound Thru/Right		50	50
	Southbound Left		**76**	165
	Southbound Right		70	-
20	***SR 46W/US 101 SB Ramps***			
	Eastbound Thru/Right	Signal	67	50
	Westbound Left		**128**	75
	Westbound Thru		**173**	220
	Southbound Left/Thru		**189**	400
	Southbound Right		**134**	550
19	***SR 46W/US 101 NB Ramps***			
	Eastbound Left/Thru	Signal	**255**	205
	Westbound Thru		**51**	40
	Westbound Right		**67**	40
	Northbound Left		107	-
	Northbound Thru/Right		89	200
21	***SR 46W/Ramada Drive***			
	Eastbound Left	Signal	**54**	40
	Eastbound Right		**48**	40
	Northbound Left/Thru		326	-
	Southbound Thru		**78**	190
	Southbound Right		**273**	190

hour.
2. Available storage for thru movements is the distance until the upstream

As shown in Table 6, the intersection of Main Street/US 101 Northbound Ramps is currently failing in the PM peak hour. As shown in Table 10, the closely spaced intersections at the SR 46 interchange operate with excessive queues in the AM and PM peak hours. Currently, the queue along SR 46 eastbound spills back from the US 101 Northbound On-Ramp beyond Vine Street. The queues at the Vineyard Drive, Las Tablas Road, Main Street, and SR 46 West interchanges are currently experiencing unacceptable queue lengths on the off-ramps and on the frontage roads; unacceptable queue lengths are shown in bold in Tables 7 through 10. Although the HCM calculates the delay to be an acceptable level of service at these interchanges, the queues are unacceptable and present deficiencies that are not presented in the Synchro analysis. These interchanges experience queuing, which may constrain progression through the corridor and result in unacceptable operations.

Improvements to these interchanges were included in the prior Fee Update and Capital Improvements Program (2013). Improvements to Caltrans facilities are subject to Caltrans Intersection Control Evaluation (ICE) process and approval. Long-term modifications at the SR 46 West Interchange include a reassessment of recommendations for the interchange at the ramps, which is currently in preparation by Omni-Means. Long-term recommendations for the Main Street Interchange are to reconfigure the interchange with installing signals or roundabouts. Ultimate recommendations for the Las Tablas interchange include either installing roundabouts or widening Las Tablas to five lanes, replace the bridge structure, reconfigure the

southbound off ramp, and close the Duncan Road access. Widening projects for the Las Tablas interchange are identified in the CIP; however, the bridge widening project is not included in the road improvement fee program. Signal timings on the Las Tablas corridor can be improved with signal coordination and construction of the Theater Drive and Bennett Way extensions, which will relieve some of the congestion.

Correction of Existing Deficiencies

In compliance with AB 1600 nexus requirements, the cost to correct existing deficiencies cannot be included in development impact fee calculations. As this is a fee program update, existing deficiencies that are ineligible for impact fee funding are defined differently than simply facilities that are operating below acceptable thresholds today.

Facilities that were not determined to be deficient at the time of the original nexus finding, for which an improvement has previously been identified, and for which impact fees are currently being collected, are not considered "existing" deficiencies. Fees can continue being collected for improvements at these locations, even if they are found to be operating deficiently today.

Base Year Traffic Model Development and Calibration

This chapter presents the methodology, processes, and supporting technical documentation for the Templeton Travel Demand Model (TDM) development and update process, and the calibration of the 2015 Existing Conditions TDM. The procedure is outlined below:

1. Collect local parcel data and aggregate areas into Traffic Analysis Zones (TAZs)
2. Model the traffic network
3. Create the four-step modeling process
4. Calibrate the base year model
5. Forecast build-out year travel demand

Data Sources

The travel demand model is based on land use information at parcel level resolution as provided by the County of San Luis Obispo Engineering Department in ESRI Arc View Shapefile format. The parcel, road and county limit shape files were projected into California State Plane, Zone IV, US Foot, coordinate systems using the Lambert Conformal Conic projection.

Data Evaluation

In order to generate an accurate representation of the existing land use patterns within the study area, an evaluation of the parcel land use data was performed. The County assessor uses a numeric code to describe the land use of parcels within the County. The model roadway network was created using existing roadway maps and the parcel shape file. The Traffic Analysis Zones (TAZs) creation process begins by determining which parcels contribute traffic to the model network roads. Each parcel is analyzed to determine how the traffic it generates will logically shed to the model network. A TAZ is composed of all the parcels that shed to common model network roads. Creation of the model network is completed with the addition of centroid connectors from the TAZs.

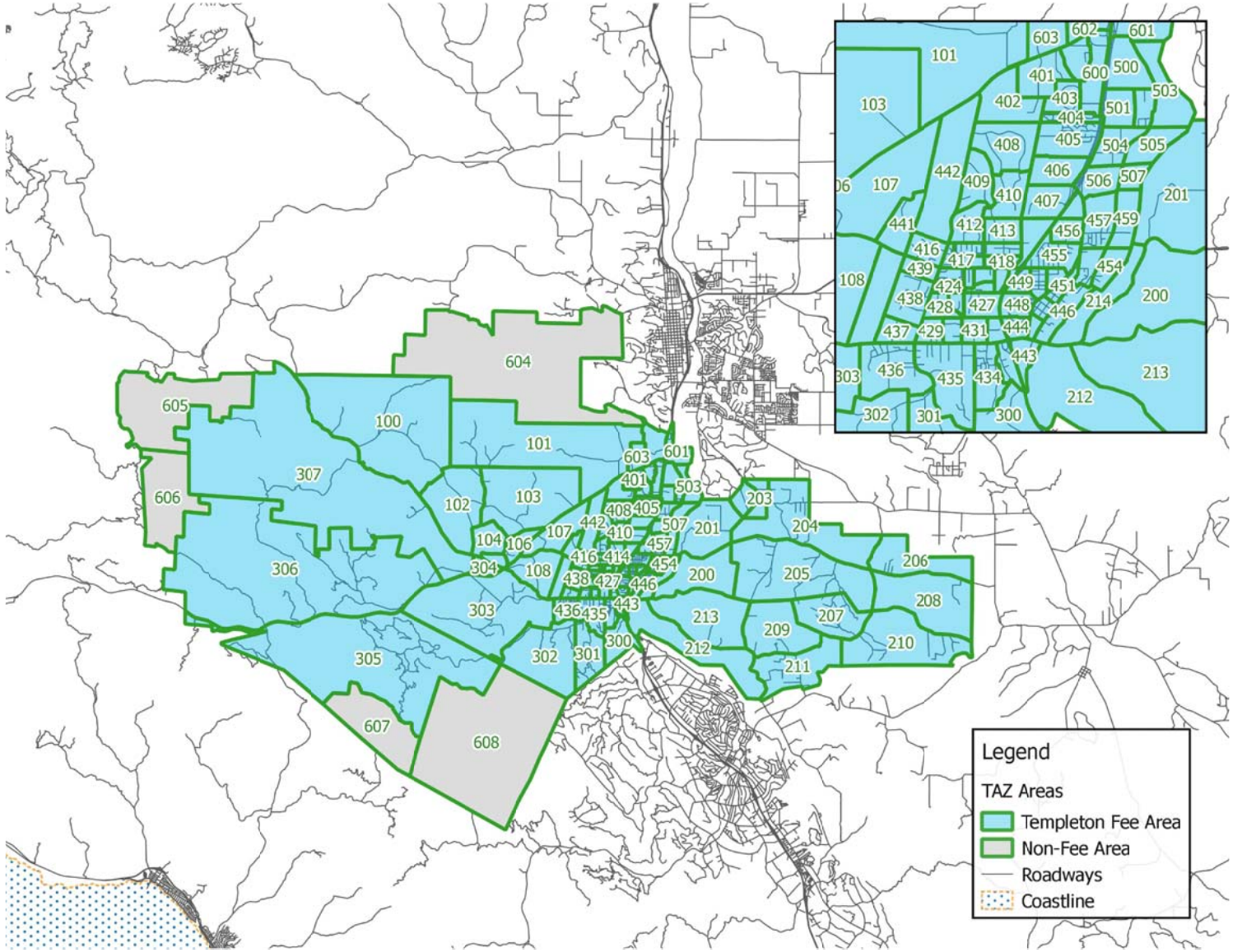
Choice of Modeling Software – Cube

The integrated urban transportation planning software package called *Cube* (*Citilabs*) was the modeling software of choice for the Templeton area traffic model. The *Cube* package represents a powerful and widely known modeling environment that provides a Windows-based implementation of the traditional four-step urban transportation planning methodology. *Cube* essentially combines the next-generation versions of the popular *TP+* (Transportation Planning Plus) planning software package and *Viper* (acronym for Visual Planning Environment) graphical user interface. The 2009 version of the Templeton TDM (*Templeton Circulation Study and Comprehensive Update*, October 2009) also performed all functions within the single *Cube* environment. Omni-Means utilized the latest (as of August 2014) version of *Cube* (Version 6) for the Templeton area traffic model. The following steps describe how the basic components of the model were developed.

Creation of TAZ Map

The first modeling step was the creation of a land use database that can be read by the model. The land use information, as read by the model, is organized into discrete traffic generating

units referred to as "Traffic Analysis Zones" (TAZs). A TAZ is defined as an area that typically comprises of contiguous land use developments (parcels, subdivisions, etc.) aggregated into a “traffic shed” for modeling purposes. Each TAZ would have one or more “connectors” feeding traffic generated from that TAZ on to the adjacent street system at logical but schematic access points. The TAZ definitions were developed using closed boundaries contained within natural geographic barriers like rivers, creeks etc., as well as “man-made” barriers like major streets, railroads etc., and taking into account how traffic generated from localized development would logically “shed” to the adjacent street system. Utilizing the San Luis Obispo County Assessors’ parcel database in conjunction with the Templeton’s Zoning Map, the Templeton Roadway Improvement Fee Area, the existing TAZs from the San Luis Obispo Council of Governments (SLOCOG) Regional Model, and the existing TAZs from the 2009 model, a “TAZ map” that consists of a system of TAZ’s for the Templeton Planning area was developed. Generally, the existing TAZ boundaries were utilized; however, Omni-Means segregated and refined these TAZs. A total of 109 TAZs were defined for the Templeton area. By segregating the existing zones, more realistic “loading” points are established. Figure 7 shows the Templeton Area TAZ Map and the Roadway Improvement Fee Area.



2015 Templeton TDM & Circulation Study Update

Figure 7

Templeton Area TAZ Map

Land Use – TAZ Integration

Land use information is necessary in order to generate vehicular trips that will be loaded onto the network of streets and roadways in the model. Each TAZ has trips that originate in its zone and trips that reach their destination in its zone. Land use data, including housing and square footage information, is included in each TAZ, in order to provide a basis for estimating trip productions and attractions. County staff provided the latest database of Templeton area parcels in Geographic Information Systems (GIS) and database file (DBF) formats, and maps that contained data such as Assessor's Parcel Number (APN), square footage and/or acreage of, assessed values of land and/or improvements on, and specific land use codes for each individual parcel. The County-wide land use codes were provided in the parcel database as "Primary Land Use" codes accompanied by alternative, secondary codes. In some instances, the provided "Primary Land Use" code did not reflect real-world land uses on some parcels. In such cases other methods such as examining aerial photography, corresponding with County staff, and applying first-hand knowledge of the area were used to determine an appropriate land use category for the model.

The next step was to determine which parcels were not vacant, i.e., which parcels had existing developments. The land use information provided by the Assessor's data had a vacancy status, and this information was extracted and parcels identified by their land use code to be vacant were assessed in closer detail to determine actual vacancy. The assessed parcel value was used as the basis for determining whether a parcel was currently built-out, underdeveloped or vacant. The parcel assessment value had two components, the "current land value" and the "current value of improvements". The "current land value" is the monetary value assessed for the geographical land area contained within the parcel, without any reference to whether there is any development on the parcel. The "current value of improvements" refers to the monetary value of physical development (buildings, parking lots, driveways etc.) that "sits" on top of the land contained within a parcel. All parcels that had "current value of improvements" at fifty percent or over the total land value were regarded as "currently developed". All parcels that had "zero" current value of improvements were regarded as "currently vacant". All parcels that had current value of improvements ranging between zero and 50 percent of the total land value were regarded as "underdeveloped".

After determining which of the parcels contained developments, Omni-Means segregated the data based upon residential and non-residential uses for trip-generation purposes. The Land Use Code determined the residential and non-residential uses. Residential uses were separated into Single Family, Multi-Family, and Mobile Home dwelling units. Parcels designated as Single Family uses were counted as one dwelling unit, except for three parcels which were designated as "*SFR with 2nd living unit*" (code 115), and were counted as two dwelling units, for trip generation purposes. Utilizing the ITE Publication *Trip Generation Manual (9th Edition)*, Omni-Means calculated the number of trips based upon land use type. Trip data is available from the ITE Trip Generation Manual per unit for residential uses and per acre or per square foot for non-residential uses such as retail, office, industrial, etc. The number of dwelling units and acreage/square footage was provided in the information from the Assessor's office, and this information was extracted. The trip generation process is further defined under the Trip Generation section of this report.

The TAZ map was created in a GIS "shape file" format and was geographically overlaid with the Assessor's parcel database, a TAZ-based breakdown of existing development was prepared. The integrated TAZ map (in shape file format) and land use data (in DBF format) were merged

for subsequent use with the model. The existing conditions land use summary is presented in Table 11.

TABLE 11
2015 EXISTING CONDITIONS LAND USE SUMMARY

Land Use	Fee Area	Non-Fee Area	Total
Residential (Dwelling Units)			
Single Family	3,011	72	3,083
Multi-Family	255	2	257
Mobile Home	607	5	612
Total	***3,873***	***79***	***3,952***
Education (Students)	2,401	-	2,401
Non-Residential	-		-
Agriculture (KSF)	354,516	223,817	578,333
Retail (KSF)	8,425	3,428	11,853
Government/Public (KSF)	31,321	49,463	80,784
Industrial (KSF)	6,025	825	6,850
Office (KSF)	2,922	-	2,922
Other (KSF)	59,366	170	59,536
Total	***462,575***	***277,702***	***740,278***

Network Creation

The next step was the creation of a street network system that the model would utilize to distribute and assign trips generated by the land uses. The network was largely kept intact from the 2009 model network except for any recent circulation improvements that were implemented per County staff direction. Each network "node" represents an intersection or some other intermediate point on the street system. Each network "link" represents a roadway segment linking two network nodes.

The next step was the creation of traffic generating units into the street network. Using an overlay of the TAZ map on top of the street network, additional nodes that represent "TAZ centroids" and additional links that represent "centroid connectors" were defined. The TAZ centroids are logical points where all land use development contained within that TAZ may be assumed to be concentrated. The centroid connectors are schematic links that carry traffic between the TAZ centroids and the adjacent street system. Special zones known as "gateways" were also coded in order that the terminal links of the model can be connected to "external" sources of traffic generation. The TAZ centroids, centroid connectors, and gateway zones and links were all integrated into the network shape file.

The travel demand model simulates a road's ability to handle travel demand based on facility type (e.g. freeway, highway, arterial, and collector), number of lanes, speed, and alignment. Figure 8 presents the model network map, which reflects the existing Templeton area roadway network. Table 12 presents the road classification categories, the associated operating characteristics of each category, and examples of roads in each category.

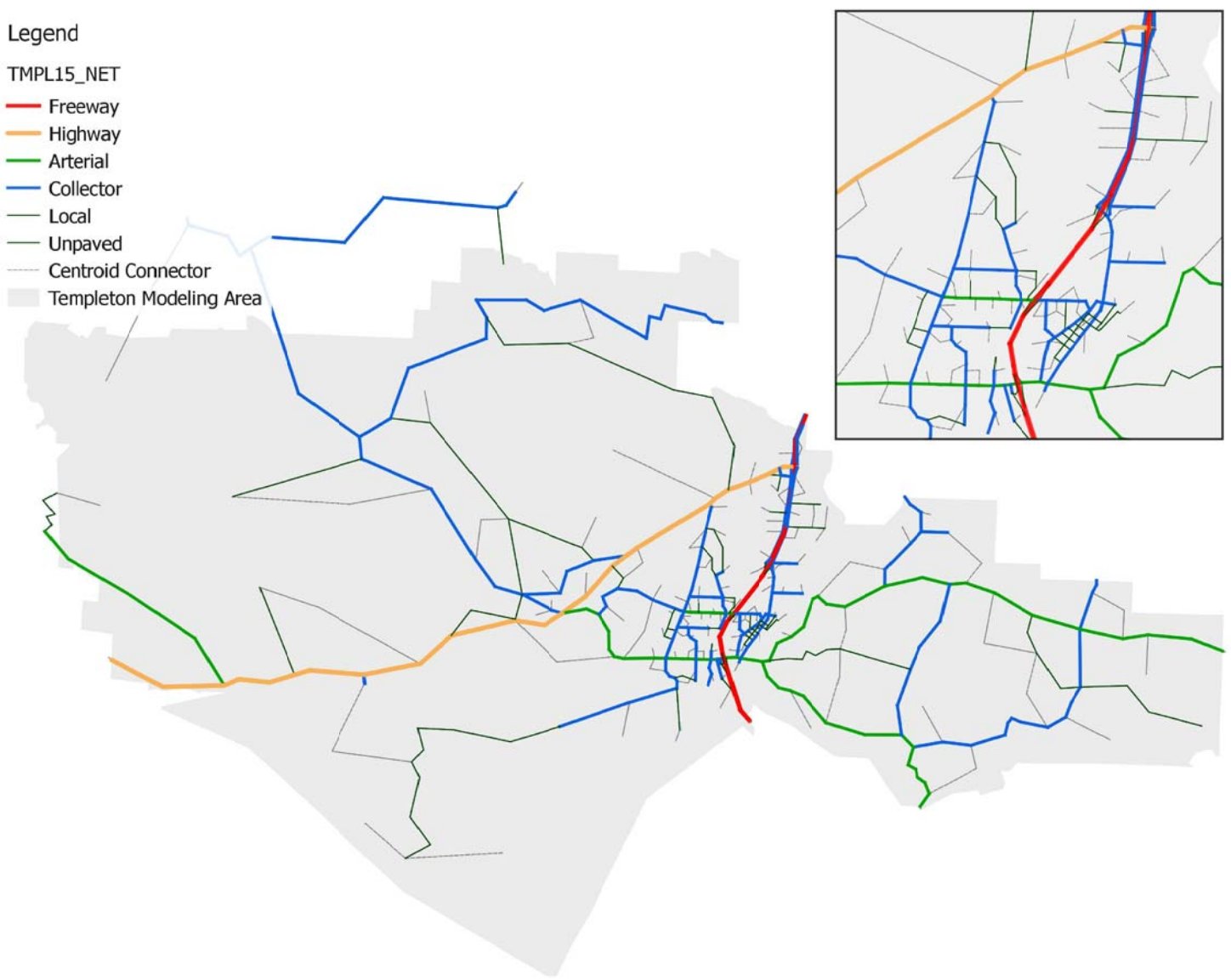


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Figure 8

Model Roadway Network

TABLE 12
ROADWAY CLASSIFICATION

Classification	Capacity (Vehicles per Lane per Hour)	Free-Flow Speed (mph)	Example Roadway
Freeway	2000	65-70	US Highway 101
Highway	1000	45-55	Highway 46
Major Arterial	800	35-45	Vineyard Drive
Minor Arterial	700	35-45	El Pomar Drive
Collector	600	25-35	Theatre Drive
Local	300	25-35	6th Street

Four-Step Modeling Process

The CUBE (Citilabs) software suite was used for the current update to the Templeton Travel Demand Model. The travel demand model follows an industry-standard four-step procedure for modeling travel demand. The steps are as follows:

1. Trip Generation – Estimate the trips generated and attracted by individual Traffic Analysis Zones (TAZs)
2. Trip Distribution – Match trips that are generated and attracted between zones for varying trip purposes.
3. Mode Choice – Select a travel mode for a particular trip.
4. Assignment – Select a path for the chosen travel mode and trip.

Trip Generation

Land uses generate a varying number of trips based on development type and development quantity. Trip producing land use groups include single-family and multi-family residential dwelling units. Trip attracting land use groups include retail, government/public, office, industrial and educational land uses. The land use quantities derived from the parcel database was converted into dwelling unit and non-residential square footage estimates.

Each trip purpose has a different trip generation rate for each land use. As a "pre-processor" to the trip generation module, the land use quantities already summarized by TAZ were first grouped into broader categories for trip generation purposes. These include "trip production" categories that include single-family and multi-family residential dwelling units, and "trip attraction" categories that include retail, office, industrial, recreational, governmental, educational, and other (miscellaneous) types. Within the pre-processor (which can be run using spreadsheet software like Excel), the individual land use quantities were multiplied with trip generation rates and grouped in the above categories in order to obtain an estimate of total daily trip generation by TAZ and by land use type. The trip generation rates were obtained using standard reference sources like Institute of Transportation Engineers (ITE) Publication Trip Generation (9th Edition). Since the Templeton area model was not envisioned to have a separate transit component, generic "vehicle trip generation rates" were used. Land Use trip rates and trips by TAZ are included in the Appendix.

Trip Distribution

The trips generated and attracted between land uses depend on trip purpose and network impedance. Modeled trips were sorted into five trip purpose categories.

1. Home-Based Work (HBW)
2. Home-Based Education (HBE)
3. Home-Based Shop (HBS)
4. Home-Based Other (HBO)
5. Other-Based Other (OBO)

The ability for one land use to satisfy the trip purpose of another land use leads to the creation of an origin-destination pairing (e.g. a trip from a residential area to an area containing retail development). The likelihood of such a pairing also depends on the travel time for such a trip to occur. Long travel times between zones, which are affected by congested roadways, decrease the likelihood of an origin-destination pairing and results in the model seeking another closer trip pairing opportunity.

Mode Choice

The Templeton travel demand model solely simulates automobile travel patterns. Transit service is not a major component of the vehicular traffic within Templeton and was not considered in the travel demand model process.

Trip Assignment

Trips between origin-destination pairs are assigned by the model using an equilibrium process. The multiple possible paths between zones are iteratively loaded until no one path provides an advantage over another. The volumes on each network link are then compared against real-world traffic counts to determine model correctness. The following section outlines the model calibration procedure.

Model Calibration

The previous section described the creation of a complete but “un-validated” base year model, i.e. the model may not accurately reflect real-world travel demand. Calibrating the model so that it reasonably reflects real world travel demand requires matching the model estimate on a set of links against traffic counts. For “calibrating” the model to available field data, several model runs with different parameter adjustments were tested in order that average daily traffic forecasts at critical locations and screen-line analyses yielded satisfactory levels of accuracy. Localized adjustments that included trip generation adjustments for specific zones, refinement of link speeds and capacities, adjustment of congested travel time expressions etc., were tested until realistic and acceptable forecasts were obtained. The calibration process and technical information is included in the Appendix.

Buildout Conditions Traffic Model Development

This section presents the methodology and process involved in the creation of the Templeton 2035 TDM Buildout conditions model scenario, and summarizes preliminary findings based on the Buildout conditions. The Model is used to forecast future travel within the Templeton area and determine the future circulation improvements to support the capacity needs identified. In 2009, Omni-Means updated the Templeton TDM (*Templeton Circulation Study and Comprehensive Update*, October 2009), and previously upgraded the prior model to the Cube transportation planning software.

Creation of Buildout Conditions Land Use Database

The Templeton buildout land use database was created by assuming existing uses on currently developed lands and build-out per the County's General Plan on vacant and/or underdeveloped lands. As part of the Templeton TDM and 2015 Existing conditions model scenario development process, the County has provided Omni-Means with a listing of parcel data within the Templeton area that contained APN as well as "land use code" and vacancy information. Parcels that were considered "vacant" or "underdeveloped" within the Templeton area were identified. Parcels which were coded as "vacant" were verified and parcels which had a "current value of improvements" of less than fifty percent of their total land value were considered "underdeveloped". Vacant and underdeveloped parcels were segregated into residential and non-residential land use categories based on the County General Plan land use maps for trip generation purposes. The buildout land use database, as described above, is summarized in Table 13.

TABLE 13
2035 BUILDOUT CONDITIONS LAND USE SUMMARY

Land Use	Fee Area			Non-Fee Area			Total		
	Existing	Added	Buildout	Existing	Added	Buildout	Existing	Added	Buildout
Residential (Dwelling Units)									
Single Family	3,011	573	3,584	72	113	185	3,083	686	3,769
Multi-Family	255	41	296	2	0	2	257	41	298
Mobile Home	607	0	607	5	0	5	612	0	612
Total	***3,873***	***614***	***4,487***	***79***	***113***	***192***	***3,952***	***727***	***4,679***
Education (Students)	2,401	0	2,401	0	0	0	2,401	0	2,401
Non-Residential	0	0	0						
Agriculture (KSF)	354,516	389,197	743,713	223,817	144,537	368,354	578,333	533,734	1,112,066
Retail (KSF)	8,425	6,414	14,839	3,428	1,382	4,810	11,853	7,796	19,649
Government/Public (KSF)	31,321	561	31,882	49,463	271	49,734	80,784	832	81,616
Industrial (KSF)	6,025	2,727	8,753	825	0	825	6,850	2,727	9,578
Office (KSF)	2,922	1,695	4,617	0	0	0	2,922	1,695	4,617
Other (KSF)	59,366	0	59,366	170	0	170	59,536	0	59,536
Total	***462,575***	***400,594***	***863,170***	***277,702***	***146,189***	***423,892***	***740,278***	***546,784***	***1,287,062***

Note: Buildout of Agricultural land uses includes dry farms and grazing areas.

Year 2035 as the Future Conditions' Model Year

Caltrans and other agencies typically require twenty years or more of design life span for improvements to their transportation facilities. Recognizing these concerns, year 2035 was determined to be the Cumulative or long-term future conditions' traffic model forecast year. Year 2035 is also consistent with the long-range forecast year for the Regional Traffic Model (RTM) developed by San Luis Obispo Council of Governments (SLOCOG). The buildout traffic model assumes full buildout of the current General Plan land uses within the Templeton area, superimposed on top of appropriate background traffic growth on the "through" corridors within the Community and its vicinity (i.e. US 101, SR 46 West) and traffic growth to/from other "gateways" in the area. Consistent with the SLOCOG forecast model, the Templeton TDM assumes a growth rate of approximately 27% over existing conditions in the volumes of external-external background trips on U.S. 101 traversing through the Templeton Community, and approximately 12% for SR 46 West. The updated year 2035 gateway trip production-attraction table and "through" (external or X-X) trip table were incorporated into the buildout traffic model.

Year 2035 Base Traffic Forecast Model Network

The 2035 Buildout conditions "Base" model scenario refers to a hypothetical scenario in which buildout of all Templeton land uses would occur without any new circulation improvements being applied to the existing network. The modeling of this base condition provides a reasonable basis for identifying locations within the Templeton Community that warrant roadway circulation, capacity and/or control improvements through year 2035. In developing the 2035 Buildout conditions model scenario, the parcel-based land use code information for vacant, underdeveloped, and developed parcels in the Templeton area was used with the calibrated 2015 Existing conditions model scenario trip generation rates and street network. Per the calibrated model, a base set of trip generation rates for all the study traffic analysis zones (TAZ's) had been established using trip generation rates documented in the ITE publication *Trip Generation Manual, 9th Ed.*, supplemented with zonal trip generation assumptions as dictated by "point calibration" based on actual ground traffic counts.

2035 Buildout Conditions

Using the existing street network and trip generation rates in conjunction with the year 2035 buildout land use database, 2035 Buildout conditions traffic forecasts were developed. The 2035 Buildout forecasts were developed using the volume growth increment projected in the Templeton TDM. Based on link volumes and roadway characteristics provided by the County, the daily and peak hour traffic conditions were projected, and are discussed in the following section. Figure 9 presents the 2035 Buildout average daily traffic (ADT) forecasts and Figure 10 presents the 2035 Buildout peak hour intersection volumes at the study locations.

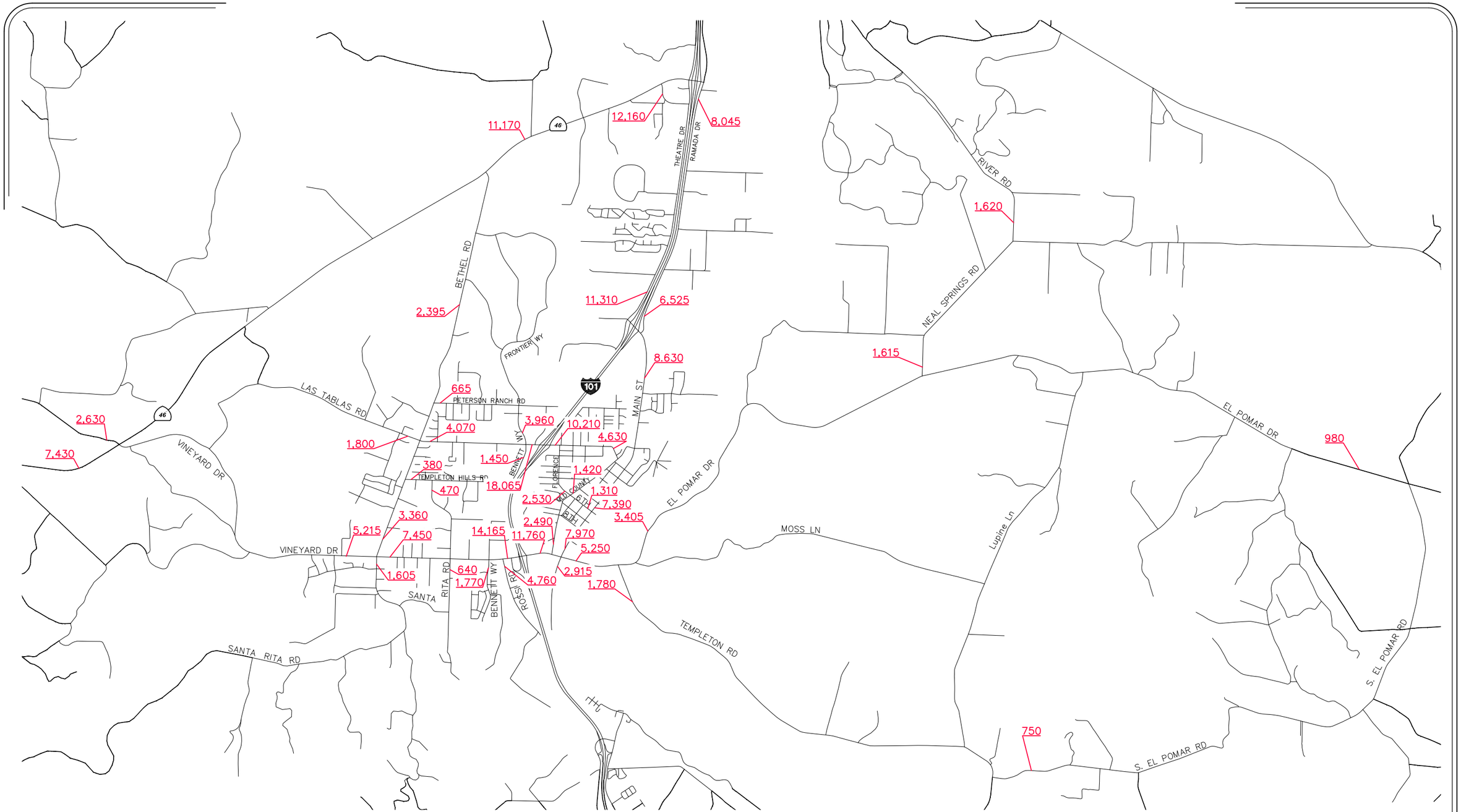

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Figure 9

Year 2035 Buildout Average Daily Traffic (ADT)

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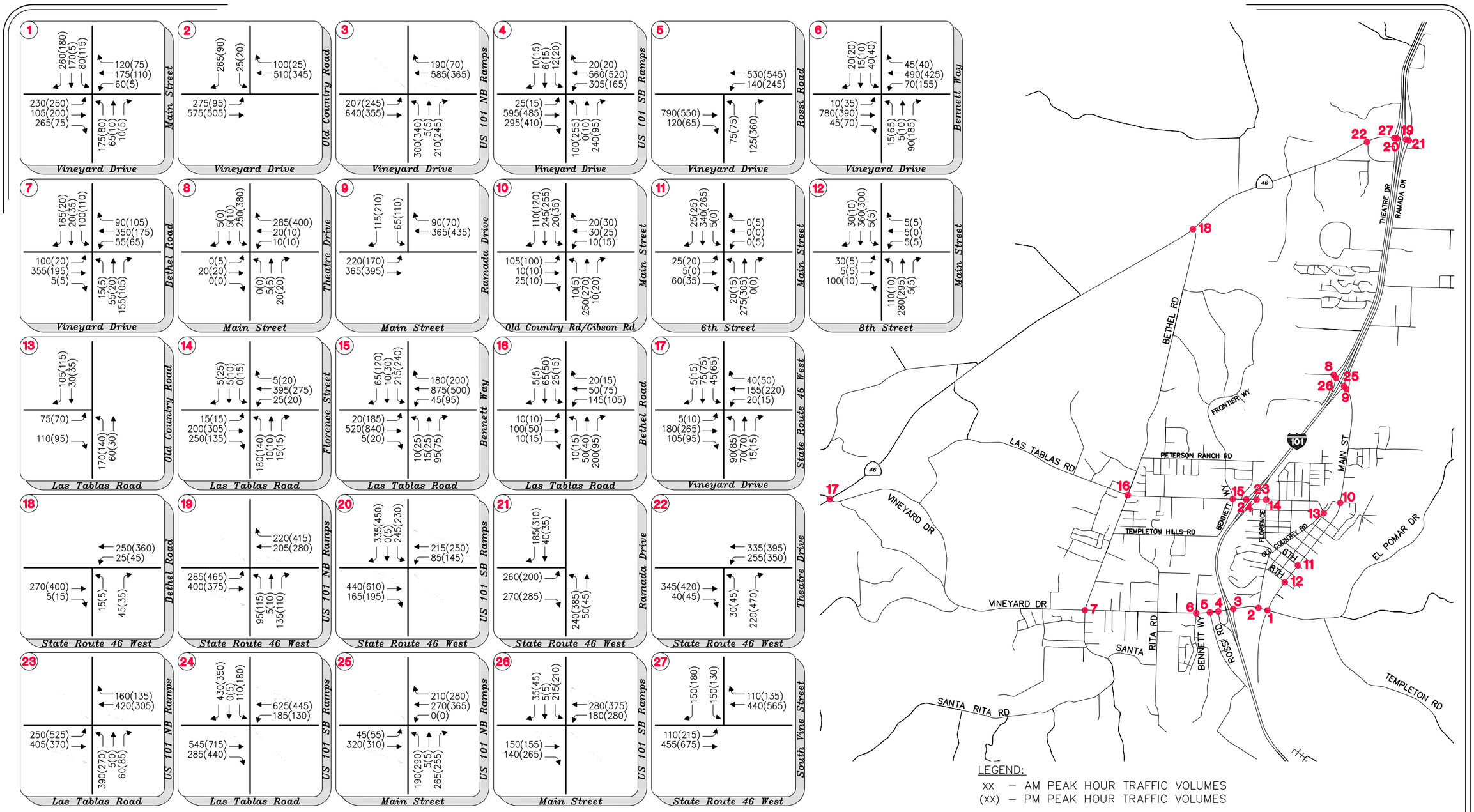

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Figure 10

Year 2035 Buildout Peak Hour Traffic Volumes

Job No: 25-6462-14

2035 Buildout Traffic Operations

Year 2035 roadway segment levels of service were estimated utilizing the LOS thresholds indicated in Table 3. The ADT-based level of service estimates for the 2035 Buildout conditions for critical roadway segments within the Templeton planning area are presented in Table 14. Table 15 presents the 2035 Buildout intersection LOS conditions. In addition, queuing analysis is included for the closely spaced intersections at the interchanges with US 101 (Vineyard Drive, Las Tablas Road, Main Street, and SR 46 West), to present any capacity issues which are not evident in the roadway or intersection summary tables. The queuing analysis was completed using the SimTraffic software, and the maximum of AM of PM peak hour 95th percentile queues are presented in Tables 16, 17, 18 and 19.

The projected Buildout forecasts along Ramada Drive are significantly lower than the forecasts estimated in the previous 2009 Travel Demand Model Update. This is a result of the methodology used in determining the Buildout land use database in the TDM. As discussed previously in this report, the 2035 buildout model land uses are based on the County General Plan land use maps for vacant and underdeveloped parcels. This resulted in vacant land east the railroad to be considered as agricultural or open space land use, which if vacant is not projected to generate additional trips under the buildout conditions. In the previous model update, the buildout land use methodology utilized the parcel's code; in which case this specific area was previously projected to be developed for industrial use. Therefore, the 2009 TDM update resulted in an addition of approximately 3,300 trips (daily) to this area, on Ramada Drive south of SR 46 West. The areas in between Ramada Drive and the railroad tracks, south of SR 46 West, are still projected to continue to develop with industrial, retail, and commercial service uses, in accordance with the County's General Plan.

TABLE 14
2035 BUILDOUT CONDITIONS ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location	Facility Type	ADT Projection	Target LOS	Estimated Buildout LOS
S.R. 46 West	East of Bethel Road	Two-Lane Highway	11,170	C	A
	West of Vineyard Drive	Two-Lane Highway	7,430	C	A
Bennett Way	South of Vineyard Drive	Two-Lane Collector	1,770	D	A
	South of Las Tablas Road	Two-Lane Collector	1,450	D	A
	North of Las Tablas Road	Two-Lane Collector	3,960	D	A
Bethel Road	South of Vineyard Drive	Two-Lane Collector	1,605	D	A
	North of Vineyard Drive	Two-Lane Collector	3,360	D	A
	North of Brambles Court	Two-Lane Collector	2,395	D	A
El Pomar Drive	North of Templeton Road	Two-Lane Collector	3,405	C	A
	West of South El Pomar Road	Two-Lane Collector	980	C	A
Florence Street	West of Old County Road	Two-Lane Collector	2,530	D	A
Las Tablas Road	West of Bethel Road	Two-Lane Collector	1,800	D	A
	East of Bethel Road	Two-Lane Arterial (w/LTL)	4,070	D	A
	West of Duncan	Three-Lane Arterial	18,065	D	B
	West of Florence Street	Two-Lane Collector	10,210	D	D
	West of Old County Road	Two-Lane Collector	4,630	D	A
Main Street	North of Vineyard Drive	Two-Lane Arterial (No LTL)	7,970	D	A
	South of Vineyard Drive	Two-Lane Arterial (No LTL)	2,915	D	A
	North of Sixth Street	Two-Lane Arterial (No LTL)	7,390	D	A
	North of Creekside Ranch Road*	**Two-Lane Arterial (No LTL)**	**8,630**	**D**	**E**
Neal Springs Road	North of El Pomar Drive	Two-Lane Collector	1,615	C	A
Old County Road	North of Vineyard Drive	Two-Lane Collector	2,490	D	A
	North of Florence Street	Two-Lane Collector	1,420	D	A
Peterson Ranch Road	East of Bethel Road	Two-Lane Collector	665	D	A
Ramada Drive	**North of Main Street***	**Two-Lane Collector**	**6,525**	**D**	**E**
	South of S.R. 46 West*	**Two-Lane Collector**	**8,045**	**D**	**E**
River Road	North of Neal Springs	Two-Lane Collector	1,620	C	A
Rossi Road	South of Vineyard Drive	Two-Lane Collector	4,760	D	A
Santa Rita Road	South of Vineyard Drive	Two-Lane Collector	640	D	A
	South of Templeton Hills Road	Two-Lane Collector	470	D	A
Sixth Street	West of Main Street	Two-Lane Collector	1,310	D	A
South El Pomar Road	East of Templeton Road	Two-Lane Collector	750	C	A
Templeton Road	East of Main Street	Two-Lane Collector	5,250	D	A
	South of El Pomar Drive	Two-Lane Collector	1,780	C	A
Templeton Hills Road	East of Bethel Road	Two-Lane Collector	380	D	A
Theatre Drive	**South of Templeton Cemetery Road***	**Two-Lane Collector**	**11,310**	**D**	**E**
Vineyard Drive	West of S.R. 46 West	Two-Lane Collector	2,630	C	A
	West of Bethel Road	Two-Lane Collector	5,215	D	A
	East of Bethel Road*	**Two-Lane Collector**	**7,450**	**D**	**E**
	West of U.S. 101	Two-Lane Arterial (w/LTL)	14,165	D	C
	East of U.S. 101	Two-Lane Arterial (w/LTL)	11,760	D	B

** LOS for County maintained arterials and collectors with no TWLTL, Buildout ADT > 6,000 vpd and a speed limit greater than or equal to 45 mph were analyzed using the HCM two-lane highway methodology.*

TABLE 15
2035 BUILDOUT CONDITIONS INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour		Warrant Met?[5]
				Delay	LOS	Delay	LOS	
1	Vineyard Dr/ Main St	Signal	D	28.6	C	21.8	C	
2	Vineyard Dr/ Old County Rd	TWSC	D	30.0	D	13.4	B	
3	Vineyard Dr/ US 101 NB Ramps	Signal	C	24.1	C	21.8	C	
4	Vineyard Dr/ US 101 SB Ramps	Signal	C	29.1	C	25.5	C	
5	**Vineyard Dr/ Rossi Rd**	**TWSC**	**D**	**118.8**	**F**	**70.8**	**F**	Yes
6	**Vineyard Dr/ Bennett Way**	**TWSC**	**D**	**165.2**	**F**	**83.1**	**F**	Yes
7	**Vineyard Dr/ Bethel Rd**	**AWSC**	**D**	**51.2**	**F**	13.4	B	Yes
8	Main St./ Theatre Dr[3,4]	TWSC	D	6.3	A	7.3	A	
9	**Main St/ Ramada Dr[4]**	**TWSC**	**D**	32.4	D	**39.5**	**E**	Yes
10	Main St/ Gibson Rd	TWSC	D	22.7	C	24.4	C	
11	Main St/ 6th St	TWSC	D	14.0	B	12.8	B	
12	Main St/ 8th St	TWSC	D	20.9	C	12.7	B	
13	Las Tablas Rd/ Old County Rd	TWSC	D	13.4	B	12.1	B	
14	**Las Tablas Rd/ Florence St**	**TWSC**	**D**	**51.7**	**F**	31.3	D	Yes
15	Las Tablas Rd/ Bennett Wy	Signal	D	32.1	C	16.0	B	
16	Las Tablas Rd/ Bethel Rd	AWSC	D	10.1	B	8.7	A	
17	**SR 46/ Vineyard Dr**	**TWSC**	**C**	19.4	C	**44.8**	**E**	Yes
18	SR 46/ Bethel Rd	TWSC	C	11.7	B	12.3	B	
19	SR 46/ US 101 NB Ramps[4]	Signal	C	17.3	B	29.8	C	
20	SR 46/ US 101 SB Ramps[4]	Signal	C	27.4	C	34.2	C	
21	**SR 46/ Ramada Dr[4]**	**Signal**	**C**	**18.6**	B	**40.5**	**D**	
22	SR 46/ Theatre Dr	Signal	C	11.4	B	24.4	C	
23	Las Tablas Rd/ US 101 NB Ramps	Signal	C	21.4	C	20.9	C	
24	Las Tablas Rd/ US 101 SB Ramps	Signal	C	21.2	C	30.0	C	
25	**Main St/ US 101 NB Ramps[4]**	**TWSC**	**C**	24.2	C	**88.0**	**F**	Yes
26	**Main St/ US 101 SB Ramps[4]**	**TWSC**	**C**	**110.9**	**F**	**659.7**	**F**	Yes
27	**SR 46/Vine Street[4]**	**Signal**	**C**	24.8	C	**82.9**	**F**	

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT
3. Main St/Theatre Dr is a three-way stop-controlled intersection and was analyzed using SimTraffic
4. Intersection experiences significant queuing which cannot be quantified using the Synchro software. These queues may affect upstream intersection operations and could impact the progression between adjacent intersections.
5. Warrant = Based on California MUTCD Signal Warrant 3

TABLE 16
VINEYARD DRIVE/US 101 INTERCHANGE BUILDOUT CONDITIONS QUEUING ANALYSIS

Int. #	*2035 No Build/Base Alternative* Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
3	***Vineyard Drive/US 101 NB Ramps***		**--**	**--**
	Eastbound Left	Signal	**161**	**80**
	Eastbound Thru		363	-
	Westbound Thru		316	-
	Westbound Right		**202**	**200**
	Northbound Left/Thru		234	-
	Northbound Right		131	190
4	***Vineyard Drive/US 101 SB Ramps***		**--**	**--**
	Eastbound Left	Signal	**84**	**60**
	Eastbound Thru		276	-
	Eastbound Right		156	225
	Westbound Left		212	240
	Westbound Thru/Right		218	-
	Northbound Left/Thru		230	-
	Northbound Right		152	170
	Southbound Left/Thru		65	-
	Southbound Right		41	50
5	***Vineyard Drive/Rossi Road***		**--**	**--**
	Eastbound Thru/Rght	TWSC	383	-
	Westbound Left		**138**	**120**
	Westbound Thru		77	-
	Northbound Left		**209**	**105**
	Northbound Right		**920**	-

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak hour.
2. Available storage for thru movements is the distance until the upstream intersection.

TABLE 17
LAS TABLAS ROAD/US 101 INTERCHANGE BUILDOUT CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
15	***Las Tablas Rd/Bennett Wy***		**--**	**--**
	Eastbound Left	Signal	**230**	150
	Eastbound Thru/Right		755	-
	Westbound Left		150	150
	Westbound Thru/Right		**446**	420
	Northbound Left/Thru/Right		124	-
	Southbound Left		**210**	120
	Southbound Thru		881	-
	Southbound Right		**135**	115
24	***Las Tablas Rd/US 101 SB Ramps***		**--**	**--**
	Eastbound Thru	Signal	**525**	420
	Eastboun Right		**427**	420
	Westbound Left		**116**	55
	Westbound Thru		206	225
	Southbound Left		**65**	25
	Southbound Thru/Right		620	-
23	***Las Tablas Rd/US 101 NB Ramps***		**--**	**--**
	Eastbound Left	Signal	**118**	50
	Eastbound Thru		**240**	190
	Westbound Thru		**279**	230
	Westbound Right		**196**	100
	Northbound Left/Thru		293	-
	Northbound Right		54	385
14	***Las Tablas Rd/Florence St***		**--**	**--**
	Eastbound Left/Thru/Right	Signal	62	-
	Westbound Left/Thru/Right		118	-
	Northbound Left		168	-
	Northbound Thru/Right		79	100
	Southbound Left/Thru/Right		55	-

hour.
intersection.

TABLE 18
MAIN STREET/US 101 INTERCHANGE BUILDOUT CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage[2]
8	***Main St/Theater Dr***			
	Eastbound Left/Thru/Right	TWSC	41	-
	Westbound Left/Thru/Right		3	75
	Northbound Left/Thru/Right		43	-
	Southbound Left/Thru/Right		96	-
26	***Main St/US 101 SB Ramps***			
	Eastbound Thru/Right	TWSC	29	75
	Westbound Left/Thru		189	325
	Southbound Left/Thru/Right		**826**	750
25	***Main St/US 101 NB Ramps***			
	Eastbound Left/Thru	TWSC	155	325
	Westbound Thru/Right		**86**	75
	Northbound Left/Thru		**603**	550
	Northbound Right		56	25
9	***Main St/Ramada Dr***			
	Eastbound Left/Thru	TWSC	53	75
	Westbound Thru/Right		51	-
	Southbound Left		705	-
	Southbound Right		**65**	50

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak hour.
2. Available storage for thru movements is the distance until the upstream intersection.

TABLE 19
SR 46 WEST/US 101 INTERCHANGE BUILDOUT CONDITIONS QUEUING ANALYSIS

Int. #	Intersection/Approach	Control Type	95th Percentile Queue (ft)[1]	Available Storage
27	***SR 46W/South Vine Street***			
	Eastbound Left	Signal	**746**	440
	Eastbound Thru		**1099**	870
	Westbound Thru/Right		57	50
	Southbound Left		**269**	165
	Southbound Right		299	-
20	***SR 46W/US 101 SB Ramps***			
	Eastbound Thru/Right	Signal	75	50
	Westbound Left		**146**	75
	Westbound Thru		**232**	220
	Southbound Left/Thru		**516**	400
	Southbound Right		**641**	550
19	***SR 46W/US 101 NB Ramps***			
	Eastbound Left/Thru	Signal	**253**	205
	Westbound Thru		**53**	40
	Westbound Right		**78**	40
	Northbound Left		161	-
	Northbound Thru/Right		108	200
21	***SR 46W/Ramada Drive***			
	Eastbound Left	Signal	**52**	40
	Eastbound Right		**54**	40
	Northbound Left/Thru		716	-
	Southbound Thru		**417**	190
	Southbound Right		**620**	190

1. Queue outputs calculated using Sim-Traffic, maximum of AM or PM peak hour.
2. Available storage for thru movements is the distance until the upstream intersection.

As shown in Table 14, Theater Drive south of Templeton Cemetery Road is projected to operate unacceptably as a two-lane collector. As shown in Table 15, the major intersections along Vineyard Drive of Rossi Road, Bennett Way, Bethel Road, and SR 46 West are projected to operate at unacceptable conditions. The intersection of Las Tablas Road at Florence Street is projected to operate at unacceptable conditions. The conditions for the intersections at the Vineyard Drive, Las Tablas Road, Main Street, and at the SR 46 West interchanges are expected to worsen and operate unacceptably. The queues at these interchanges are projected to worsen on the ramps and through the frontage roads. Unacceptable queue lengths are shown in bold in Tables 16 through 19. Although the HCM calculates the delay to be an acceptable level of service at some of these interchanges, the queues are unacceptable and present deficiencies that are not presented in the Synchro analysis. The interchanges of SR 46 West, Main Street, and Las Tablas Road experience queuing which may constrain progression through the corridors and result in unacceptable operations.

Table 20 presents a comparison of the ADT and level of service estimates between Existing and Buildout conditions. Table 21 presents a comparison of the intersection LOS between Existing and Buildout conditions.

TABLE 20
ROADWAY SEGMENT LEVELS OF SERVICE COMPARISON TABLE

			Existing Conditions		Buildout Conditions	
Roadway	**Location**	**Facility Type**	**ADT**	**LOS**	**ADT**	**LOS**
S.R. 46 West	East of Bethel Road	Two-Lane Highway	6,911	A	11,170	A
	West of Vineyard Drive	Two-Lane Highway	5,807	A	7,430	A
Bennett Way	South of Vineyard Drive	Two-Lane Collector	1,010	A	1,770	A
	South of Las Tablas Road	Two-Lane Collector	1,440	A	1,450	A
	North of Las Tablas Road	Two-Lane Collector	2,359	A	3,960	A
Bethel Road	South of Vineyard Drive	Two-Lane Collector	1,324	A	1,605	A
	North of Vineyard Drive	Two-Lane Collector	2,128	A	3,360	A
	North of Brambles Court	Two-Lane Collector	773	A	2,395	A
El Pomar Drive	North of Templeton Road	Two-Lane Collector	3,083	A	3,405	A
	West of South El Pomar Road	Two-Lane Collector	927	A	980	A
Florence Street	West of Old County Road	Two-Lane Collector	2,007	A	2,530	A
Las Tablas Road	West of Bethel Road	Two-Lane Collector	1,126	A	1,800	A
	East of Bethel Road	Two-Lane Arterial (w/LTL)	2,929	A	4,070	A
	West of Duncan	Three-Lane Arterial	15,671	A	18,065	B
	West of Florence Street	Two-Lane Collector	7,827	C	10,210	D
	West of Old County Road	Two-Lane Collector	2,888	A	4,630	A
Main Street	North of Vineyard Drive	Two-Lane Arterial (No LTL)	7,608	A	7,970	A
	South of Vineyard Drive	Two-Lane Arterial (No LTL)	2,815	A	2,915	A
	North of Sixth Street	Two-Lane Arterial (No LTL)	6,836	A	7,390	A
	North of Creekside Ranch Road*	**Two-Lane Arterial (No LT**	7,199	A	**8,630**	**E**
Neal Springs Road	North of El Pomar Drive	Two-Lane Collector	1,572	A	1,615	A
Old County Road	North of Vineyard Drive	Two-Lane Collector	2,378	A	2,490	A
	North of Florence Street	Two-Lane Collector	1,309	A	1,420	A
Peterson Ranch Road	East of Bethel Road	Two-Lane Collector	394	A	665	A
Ramada Drive	**North of Main Street***	**Two-Lane Collector**	5,073	A	**6,525**	**E**
	South of S.R. 46 West*	**Two-Lane Collector**	5,722	A	**8,045**	**E**
River Road	North of Neal Springs	Two-Lane Collector	1,609	A	1,620	A
Rossi Road	South of Vineyard Drive	Two-Lane Collector	4,658	A	4,760	A
Santa Rita Road	South of Vineyard Drive	Two-Lane Collector	627	A	640	A
	South of Templeton Hills Road	Two-Lane Collector	470	A	470	A
Sixth Street	West of Main Street	Two-Lane Collector	1,039	A	1,310	A
South El Pomar Road	East of Templeton Road	Two-Lane Collector	677	A	750	A
Templeton Road	East of Main Street	Two-Lane Collector	4,586	A	5,250	A
	South of El Pomar Drive	Two-Lane Collector	1,667	A	1,780	A
Templeton Hills Road	East of Bethel Road	Two-Lane Collector	307	A	380	A
Theatre Drive	**South of Templeton Cemetery Road***	**Two-Lane Collector**	8,132	C	**11,310**	**E**
Vineyard Drive	West of S.R. 46 West	Two-Lane Collector	1,647	A	2,630	A
	West of Bethel Road	Two-Lane Collector	4,351	A	5,215	A
	East of Bethel Road*	**Two-Lane Collector**	6,079	B	**7,450**	**E**
	West of U.S. 101	Two-Lane Arterial (w/LTL)	12,572	C	14,165	C
	East of U.S. 101	Two-Lane Arterial (w/LTL)	10,520	A	11,760	B

** LOS for County maintained arterials and collectors with no TWLTL, Buildout ADT > 6,000 vpd and a speed limit greater than or equal to 45 mph were analyzed using the HCM two-lane highway methodology.*

TABLE 21
INTERSECTION LEVELS OF SERVICE COMPARISON TABLE

#	Intersection	Control Type[1,2]	Target LOS	Existing Conditions		Buildout Conditions	
				AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
1	Vineyard Dr/ Main St	Signal	D	C	C	C	C
2	Vineyard Dr/ Old County Rd	TWSC	D	C	B	D	B
3	Vineyard Dr/ US 101 NB Ramps	Signal	C	B	C	C	C
4	Vineyard Dr/ US 101 SB Ramps	Signal	C	C	B	C	C
5	**Vineyard Dr/ Rossi Rd**	**TWSC**	D	C	B	**F**	**F**
6	**Vineyard Dr/ Bennett Way**	**TWSC**	D	C	B	**F**	**F**
7	**Vineyard Dr/ Bethel Rd**	**AWSC**	D	C	A	**F**	B
8	Main St./ Theatre Dr[3,4]	TWSC	D	A	A	A	A
9	Main St/ Ramada Dr[4]	**TWSC**	D	C	C	D	**E**
10	Main St/ Gibson Rd	TWSC	D	C	C	C	C
11	Main St/ 6th St	TWSC	D	B	B	B	B
12	Main St/ 8th St	TWSC	D	C	B	C	B
13	Las Tablas Rd/ Old County Rd	TWSC	D	B	A	B	B
14	**Las Tablas Rd/ Florence St**	**TWSC**	D	C	B	**F**	D
15	Las Tablas Rd/ Bennett Wy	Signal	D	B	A	C	B
16	Las Tablas Rd/ Bethel Rd	AWSC	D	A	A	B	A
17	SR 46/ Vineyard Dr	**TWSC**	C	B	C	C	**E**
18	SR 46/ Bethel Rd	TWSC	C	B	B	B	B
19	SR 46/ US 101 NB Ramps[4]	Signal	C	B	B	B	C
20	SR 46/ US 101 SB Ramps[4]	Signal	C	C	C	C	C
21	SR 46/ Ramada Dr[4]	**Signal**	C	B	C	B	**D**
22	SR 46/ Theatre Dr	Signal	C	A	B	B	C
23	Las Tablas Rd/ US 101 NB Ramps	Signal	C	B	B	C	C
24	Las Tablas Rd/ US 101 SB Ramps	Signal	C	B	B	C	C
25	**Main St/ US 101 NB Ramps[4]**	**TWSC**	C	C	**D**	C	**F**
26	**Main St/ US 101 SB Ramps[4]**	**TWSC**	C	**D**	**F**	**F**	**F**
27	SR 46/Vine Street[4]	**Signal**	C	B	C	C	**F**

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal, RNDBT
3. Main St/Theatre Dr is a three-way stop-controlled intersection and was analyzed using SimTraffic

Transportation Improvement Needs and Circulation Plan Recommendations

This section presents the traffic network improvements considered for construction. The analyses' of the improvements will be included in a subsequent document with the intent to use the Templeton traffic model to test the potential improvements and determine the overall circulation benefits of the potential improvements. The intent of the Circulation concepts is to identify the possible improvements that will be considered and analyzed using the Templeton TDM.

Base Network

The effectiveness of circulation improvements were evaluated against a Buildout "Base" traffic scenario that had no circulation improvements. The Buildout "Base" scenario for the alternatives evaluation is a model network that superimposed the buildout land uses onto the existing traffic network.

Circulation Plan Recommendations

The following are summaries of circulation issues of concern predicted by the Templeton Traffic Model for Buildout conditions. Utilizing average daily traffic (ADT) predictions produced by the model, the peak hour-based intersection service levels were calculated for all the study locations using HCM methodologies. Consistent with the San Luis Obispo County and Caltrans policies, LOS "C" was taken as the general threshold for acceptable/tolerable operations for rural areas, areas within Caltrans jurisdiction, and LOS "D" was taken as the general threshold for areas within the Templeton URL. Roadway segments with projected LOS worse than identified thresholds were determined "deficient". Implications on community traffic conditions and safety are also described in this section.

County maintained arterials and collectors without two-way left-turn lanes (TWLTL's) with a speed limit greater than or equal to 45 mph, and a Buildout ADT greater than 6,000 vpd were also analyzed using the Highway Capacity Manual Two-Lane Highway methodology. The analysis determined that TWLTL's are required at the following locations:

- Vineyard Drive (Bethel Road to Bennett Way)
- Main Street (Creekside Ranch Road to US 101)
- Ramada Drive (Main Street to SR 46 West)
- Theater Drive (Main Street to Paso Robles City Limits)

SR 46 West/US 101 Interchange

The SR 46 West/US 101 interchange is a significant location for interregional, regional, and local traffic. Operations along this corridor between Theater Drive and Ramada Drive are unacceptable and are projected to worsen causing severe delays along SR 46 eastbound and westbound, on the southbound off ramp, and for both approaches of Ramada Drive. These ramp intersections are closely spaced with the frontage roads. Modifications at this interchange include reassessment of recommendations for the interchange at the ramps, and is currently in preparation by Omni-Means. Improvements to Caltrans facilities are subject to Caltrans

Intersection Control Evaluation (ICE) process and approval. Templeton area's fair share percentage of the interchange cost was reconfirmed during the analysis with the County.

Main Street/US 101 Interchange

The Main St/US 101 interchange also provides a significant access for regional and local traffic for the Templeton Community. Currently, the ramps and frontage roads are operated by stop signs and most of the intersections are projected to operate unacceptably under Buildout conditions. Main Street at the US 101 Ramps is projected to operate at LOS F with significant queuing on the ramps, and Ramada Drive is projected to operate at LOS E in the PM peak hour under Buildout conditions. The volumes are projected to satisfy peak hour warrants for a traffic signal. The ramps are closely spaced with the frontage roads. Recommendations are to reconfigure the interchange with installing signals or roundabouts. Main Street is projected to operate at or near capacity under Buildout conditions north of Creekside Ranch Road. Main Street Interchange improvements should also include widening the roadway cross-section between US 101 and Creekside Ranch Road to provide three lanes that presents capacity more similar to arterials. Improvements to Caltrans facilities are subject to Caltrans Intersection Control Evaluation (ICE) process and approval. Templeton area's fair share percentage of the interchange cost was reconfirmed during the analysis with the County.

Las Tablas Road/US 101 Interchange

The Las Tablas Road/US 101 interchange also provides a significant access for regional and local traffic for the Templeton Community. Currently, the ramps are operated by traffic signals and most of the intersections are projected to operate acceptably under Buildout conditions. However, the queuing analysis results present queuing issues for the US 101 Southbound Off-Ramp and queues are projected to back up through the adjacent intersections. The ramps are closely spaced with the adjacent intersections. Recommendations are to widen the US 101 Southbound Off-Ramp to provide sufficient storage for the turn pocket, and widen Las Tablas Road to provide an additional lane westbound between US 101 Southbound Ramps and west of Bennett Way. The additional westbound lane will facilitate flow through the corridor and alleviate congestion at the interchange. Ultimate recommendations for the Las Tablas interchange include either installing roundabouts or widening Las Tablas to five lanes, replace the bridge structure, and possibly close the Duncan Road access. Widening projects for the Las Tablas interchange are identified in the CIP; however, the bridge widening project is not included in the road improvement fee program. Improvements to Caltrans facilities are subject to Caltrans Intersection Control Evaluation (ICE) process and approval. Templeton area's fair share percentage of the interchange cost was reconfirmed during the analysis with the County.

Las Tablas Road/Florence Street

This intersection currently operates with a stop sign on the Florence Street approach and is projected to operate unacceptably under buildout conditions. The volumes are projected to satisfy peak hour warrants for a traffic signal. This intersection is close (approximately 250 feet) east of the US 101 Northbound Ramps intersection. Recommendations are to install a traffic signal with appropriate turn lanes and coordinate with the US 101 Ramps intersections which are currently signalized.

Theater Drive

This roadway is projected to operate at or near capacity under Buildout conditions. Improvements within Templeton include widening the roadway cross-section between Main Street and Paso Robles City Limits to provide three lanes that presents capacity more similar to arterials. In addition, it is recommended to extend Theater Drive south to Peterson Ranch Road. Completion of the frontage road system will help alleviate congestion at the interchanges.

Bennett Way

This roadway is projected to operate acceptably under Buildout conditions. However, completing the connectivity of Bennett Way to serve as a frontage road is needed to facilitate efficient access throughout the community under buildout conditions. It is recommended to extend Bennett Way north of Vineyard Drive to Peterson Ranch Road. Completion of the frontage road system will help alleviate congestion at the interchanges.

Ramada Drive

This roadway is projected to operate at or near capacity under Buildout conditions. Improvements within Templeton include widening the roadway cross-section at Marquita Avenue and Volpi Ysabel Road to provide three lanes that presents capacity more similar to arterials.

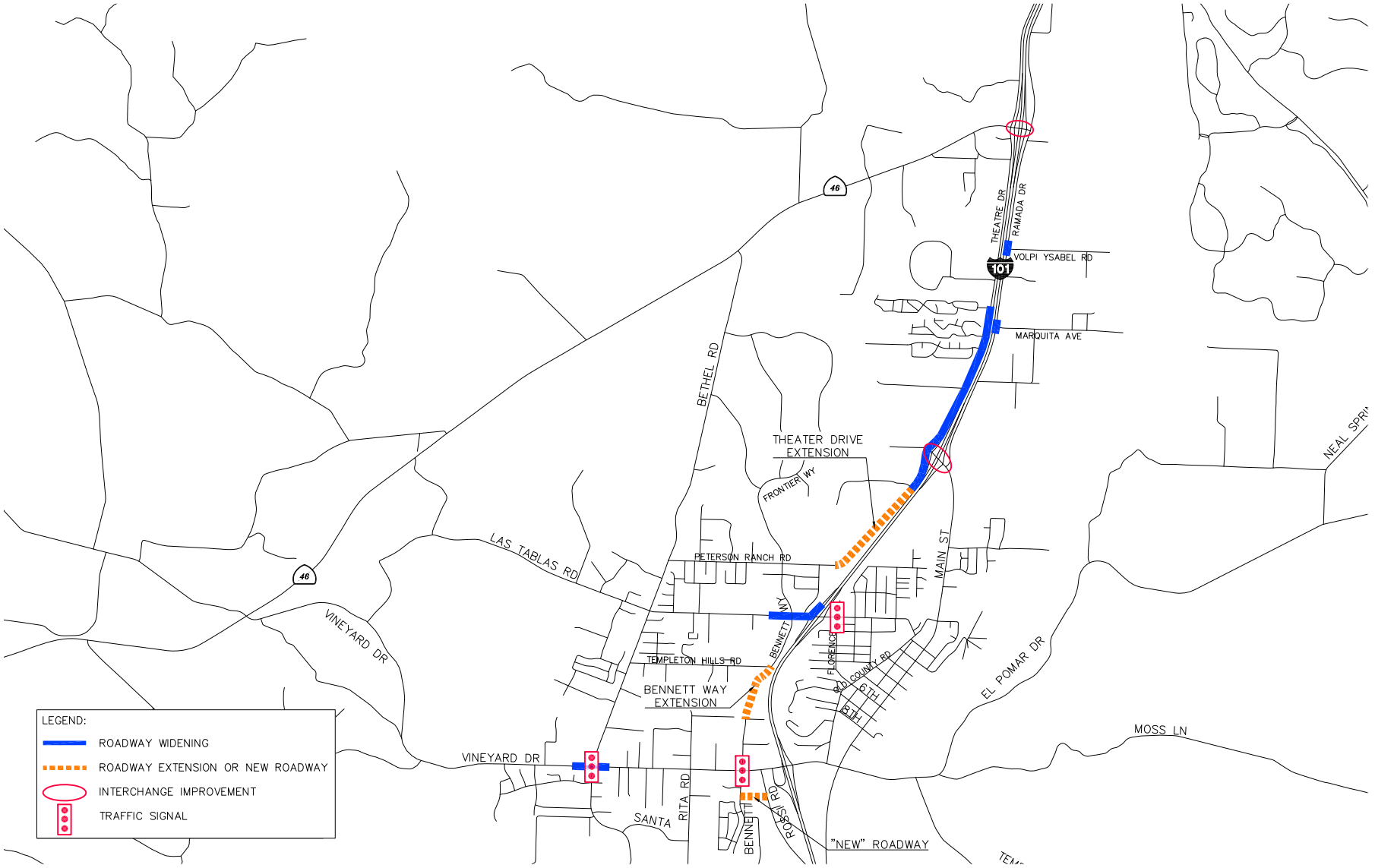
Vineyard Drive

Vineyard Drive between Bethel Road and Bennett Way is projected to operate at or near capacity under Buildout conditions. Improvements within Templeton include widening the roadway cross-section to provide three lanes that presents capacity more similar to arterials. The major intersections which are projected to be deficient along Vineyard Drive are as follows:

- Vineyard Drive/Rossi Road
- Vineyard Drive/Bennett Way
- Vineyard Drive/Bethel Road
- Vineyard Drive/SR 46 West

These intersection volumes are projected to satisfy peak hour warrants for a traffic signal. Recommendations for Vineyard Drive at Bennett Way, Bethel Road, and SR 46 West are to install traffic signals at the locations. Improvements to Caltrans facilities (SR 46 West) are subject to Caltrans Intersection Control Evaluation (ICE) process and approval. However, recommendations for the Vineyard Drive/Rossi Road intersection are to modify or close the intersection and construct a new roadway to provide access between Bennett Way and Rossi Road, essentially re-routing Rossi Road traffic to Bennett Way. The close spacing between Rossi Road and Bennett Way and the US 101 SB ramps does not maintain the level of functional classification which Vineyard Drive provides as an arterial, therefore alternatives should be explored to improve capacity which could include closing Rossi Road or restricting turns to right turn only, and providing access via Bennett Way.

Figure 11 presents the Circulation Improvements (CIP). Figure 12 presents the Year 2035 Average Daily Traffic with the recommended circulation improvements in place. Figure 13 presents the Year 2035 Peak Hour Traffic volumes with the recommended circulation improvements in place.



2015 Templeton TDM & Circulation Study Update

Figure 11

Circulation Improvements for Impact Fees

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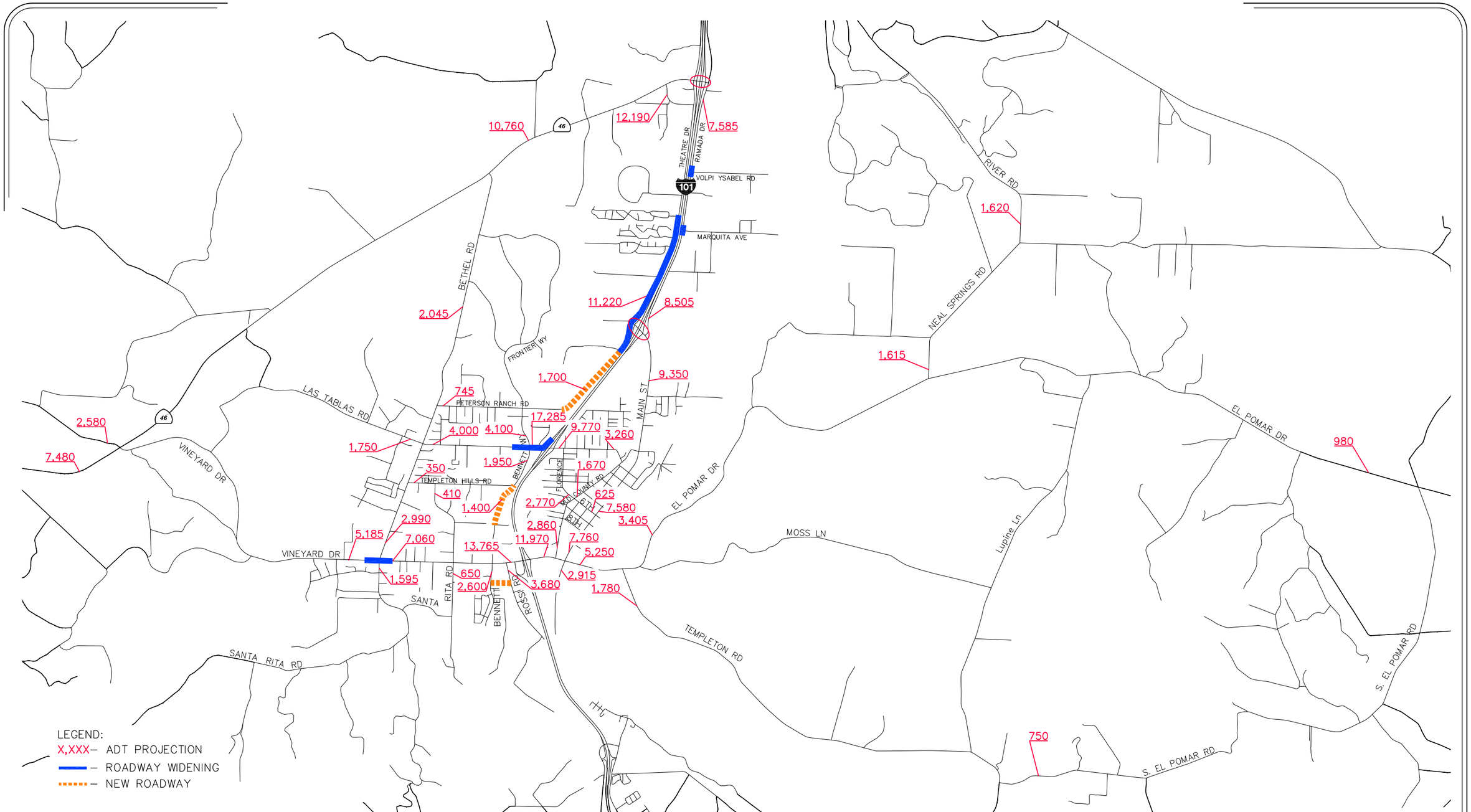
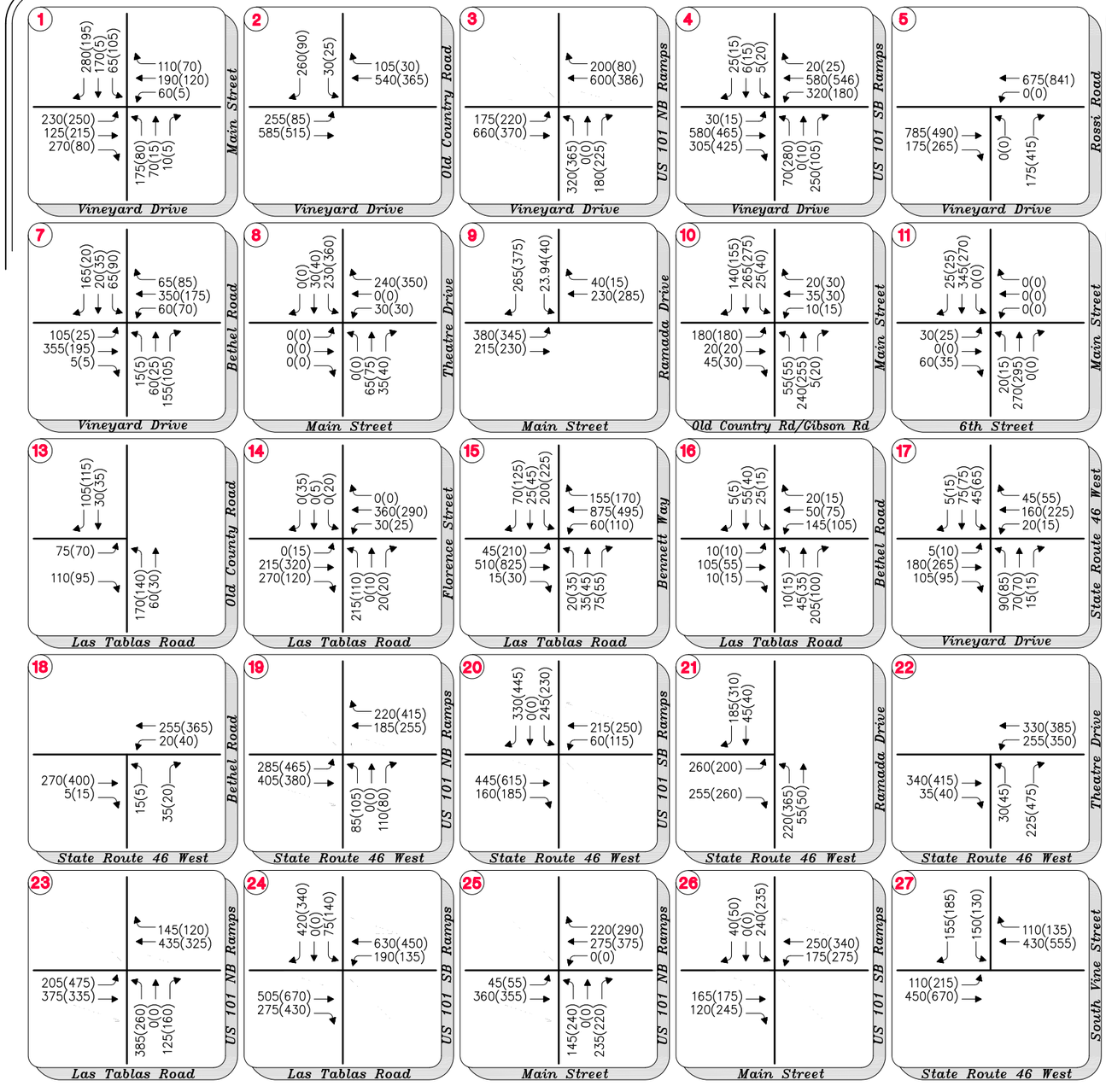


2015 Templeton TDM & Circulation Study Update

Figure 12

Year 2035 Buildout with CIP Average Daily Traffic (ADT)



2015 Templeton TDM & Circulation Study Update

Figure 13

Year 2035 Buildout with CIP Peak Hour Traffic Volumes

Alternative Transportation Modes

Pedestrian and Bicycle Routes

San Luis Obispo County updated the Bikeways Plan in 2015/16. The plan encourages the use of walking and bicycling and recognizes three classes of bikeways:

Class I Multi Use Path. Class I facilities are multi-use facilities that provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.

Class II Bike Lane. Class II facilities provide a striped and signed lane for one-way bicycle travel on each side of a street of highway. The minimum width for bike lanes ranges between four and six feet depending upon the edge of roadway conditions (curbs) and speed. Bike lanes are demarcated by a six-inch white stripe, signage and pavement legends.

Class III Bike Route. Class III facilities provide signs for shared use with motor vehicles within the same travel lane on a street or highway. Bike routes may be enhanced with warning or guide signs and shared lane marking pavement stencils. While Class III routes do not provide measure of separation, they have an important function in providing continuity to the bikeway network.

Existing Pedestrian and Bicycle Facilities

The current bicycle and trail network consists of on-street and limited off-street facilities. The Templeton area currently has 15 bike facilities consisting of 1 Class I, 7 Class II, and 7 Class III facilities. The County has a pavement management program and regularly makes repairs as needed. The updated 2015/16 County Bikeways Plan was approved on August 9, 2016 and is available at http://www.slocounty.ca.gov/PW/Bicycles/Bike_Plan.htm. The following is a list of the bicycle facilities within Templeton:

Class I Bike Paths

- Vineyard Trail - Along the south side of Vineyard Drive between Bethel Road and 250' west of Semillon Lane.

Class II Bike Lanes

- Vineyard Drive - Between Vineyard Elementary School and Main Street
- Las Tablas Road - Between Florence Street and Bethel Road
- Florence Street - Between Las Tablas Road and Salinas Avenue
- Main Street - Between Ramada Drive and Gibson Road
- Bennett Way - Between Las Tablas Road and Peterson Ranch Road
- Theatre Drive - Between Nutwood Circle and SR 46, and connects to Vine Street
- South Vine Street - Between SR 46 and First Street in Paso Robles

Class III Bike Routes or Bicycle Friendly Roads

- Crocker Street - Between First Street and Eighth Street

- El Pomar Drive – Between Templeton Road and Neal Spring Road
- Florence Street/6th Street - Between Main Street and Salinas Avenue
- Las Tablas Road - Between Florence Street and Old County Road
- Main Street - Between Gibson Road and Vineyard Drive, and between Ramada Drive and Theater Drive
- Neal Spring Road – Between El Pomar Drive and South River Road
- Templeton Road – Between Main Street and El Pomar Drive
- Theatre Drive - Between Main Street and Nutwood Circle/Paso Robles City Limits (partial Class II features)

Walking

Pedestrian activity is generally aligned with roadways and has facilities very similar to Class I, II or III. Sidewalks exist along urban streets in the Templeton area, particularly in commercial areas and school areas such as downtown Templeton. Crosswalks that are near schools are painted yellow. Sidewalks are also present in some suburban residential neighborhoods. The General Plan contains special planning area standards that address sidewalk construction. Sidewalks tend to contribute toward the success of associated non-auto modes such as public transit service**.**

Ridesharing

The San Luis Obispo Regional Transit Authority, in cooperation with State and Federal governments, operates the Regional Ridesharing Program. This program provides opportunities for carpool formation through its carpool matching service. The Transit Authority serves as a clearinghouse for information on all other alternative transportation modes. The ridesharing program concentrates on outreach to major employers, as these have the density of employment necessary to assure successful carpool matching. One key action, which facilitates ridesharing, is the provision of Park & Ride lots. A Park & Ride lot currently exists at the intersection of Las Tablas Road and Bennett Way.

Public Transportation

The Templeton area is serviced by San Luis Obispo Regional Transit Authority (SLORTA). Route schedules may vary annually and can be found at www.slorta.org. Route 9 serves a regional connection for Templeton and includes the Cities of San Miguel (Limited), Paso Robles, Atascadero, Santa Margarita, and San Luis Obispo. Route 9 also provides limited service to Cal Poly. Route 19 provides the following stops within the Templeton area:

- Las Tablas Road Park & Ride Lot
- Twin Cities Hospital
- Theatre Drive at Rancho Paso Road
- Theatre Drive at Target Shopping Center
- Theatre Drive at Chili's Restaurant/River Lodge Motel

Truck Routes

Truck routes are intended to carry heavyweight commercial, industrial, and agricultural vehicles through and around the community with minimum disruption to local auto traffic and minimum annoyance to residential areas. The 1982 Surface Transportation Assistance Act set standards for large trucks, known as STAA trucks, and set minimum truck sizes that states must allow on

the National Network including the Interstate System and other defined routes. The US 101 highway through Templeton and statewide is a National Truck Network. SR 46 is a Terminal Truck Access (STAA), splitting off of US 101 north of Templeton.

Rail Operations

No commuter rail transportation (AMTRAK) is currently located in Templeton. The nearest Amtrak is located in the City of Paso Robles. This facility is 6 miles north of Templeton.

Airports

Paso Robles Municipal Airport is the closest airport that is open to the public. The airport is mainly used for recreational activities and is accessible off of Highway 1. Oak Country Ranch Airport is the closest airport to the Templeton area; however it is privately-owned.

The San Luis Obispo County Regional Airport, also known as McChesney Field, is located in the City of San Luis Obispo about 27 miles south of Templeton. It is served by two commercial airlines providing services to Los Angeles, Phoenix, and San Francisco. It is also home to full service general aviation and corporate facilities. McChesney Field is located on the west side of SR 227, about 2 miles east of US 101.

Cost Estimates and Funding Mechanisms, Including Transportation Impact Fees

This chapter presents the update to the Capital Improvement Projects (CIP) and the associated Transportation Impact Fees (TIF) based on the recommended transportation improvements and discusses possible funding mechanisms.

Cost Estimates

A series of planning level cost estimates have been prepared by County Public Work Staff for projects discussed in Chapter 5. The cost estimates are necessary to determine the funding required to implement the transportation improvements. A summary of the recommended projects, cost estimates, recommended funding sources, and expected project completion dates are presented in Table 22 as the Capital Improvement Projects (CIP).

All cost estimates include the cost of construction, right-of-way, design, administration, environmental considerations, and inspection. All costs for construction activity were determined from typical experiences in San Luis Obispo County. Construction costs include clearing and grubbing, paving, drainage, stormwater, lighting, signing, and striping. Roadway edge improvements like curb, gutter, and sidewalk are generally excluded since they are usually constructed at the time of adjacent development.

Funding Mechanisms

Implementation of the elements of the transportation plan for Templeton will require sources of revenue dedicated to infrastructure investment. Local government has traditionally provided for public facilities, with the costs being financed by revenues derived from gasoline tax and state and federal funds. In the recent past, the traditional revenue sources have shrunk to inadequate levels through a combination of growth, aging capital facilities, State realignment of property tax revenues, construction cost inflation, increasing costs of environmental mitigation and competing needs for limited public dollars.

Impact Fees – The California Government Code (Sections 66001-66025) grants authority to local agencies to establish, increase, or impose fees as a condition of approval of a development project within their jurisdictional boundaries. California courts require that such fees be reasonably related to the contributing development's impact on community facilities. Provided that the impact fees are used to finance construction of specific facilities, impact fees are not considered taxes and, therefore, do not require electorate approval. San Luis Obispo County adopted Ordinance No. 2379 in 1988 to provide for the collection of roadway impact fees. A fee program has been established for the study areas of the South County (Nipomo Mesa), San Luis Bay (Avila Valley), Templeton, North Coast (Cambria), Los Osos, and San Miguel. The impact fee is collected at the time of development and held in an account dedicated for road improvements within the area of benefit. Credits toward the fee are provided to landowners who dedicate right-of-way and/or construct facilities listed on the capital improvements table (Table 22).

TABLE 22
TEMPLETON CIRCULATION STUDY 2017 UPDATE CAPITAL IMPROVEMENTS PROJECTS

#	Project Type	Location	From	Improvement	Cost Estimate	Less: Existing Deficiencies	Less: Other Sources	Less: Regional COG	Funding From Impact Fees	Expected Completion
Road Improvement Fee Projects										
Circulation Study Updates (previous through 2035)					$500,000				$500,000	-
1	Interchange Improvements	Vineyard Dr	Phase 1 (Bond $)	Debt Service on 09-27 & Road Fund Loan (Bond Repayment w/interest& fees)	$6,824,000				$6,824,000	2023
2	Interchange Improvements	Main St	Theater Dr to Ramada Dr	Reconfigure interchange (widening, signals and/or roundabouts) includes LTL on Main	$12,000,000		$2,000,000	$4,000,000	$6,000,000	2025
3	Interchange Improvements	Highway 46 West	Theater Dr to Ramada Dr	Reconfigure interchange (widening, signal improvements and/or roundabouts)	$16,000,000		$7,040,000	$5,184,000	$3,776,000	2035
4	Interchange Improvements	Las Tablas Rd	West of Bennett Way to US 101	Widen US 101 SB off-ramp & add wesbound lane.	$2,500,000			$1,500,000	$1,000,000	2035
5	Roadway Extension	Theater Dr	South End to Petersen Ranch Rd	Two (2) travel lanes, a left turn lane and bike lanes	$5,500,000		$3,500,000	$1,000,000	$1,000,000	2035
6	Roadway Extension	"New" Road	Bennett Wy to Rossi Rd	Re-route Rossi Road to Bennett Way. Cost for intersection connections to existing roads.	$500,000				$500,000	2035
7	Roadway Extension	Bennett Wy	Vineyard Dr to Las Tablas Rd	Two (2) travel lanes, a left turn lane and bike lanes	$4,500,000			$3,500,000	$1,000,000	2035
8	Signal Installation	Vineyard Dr	Bethel Rd	Install traffic signal, ADA ramps and LTL on Vineyard	$750,000			$375,000	$375,000	2035
9	Signal Installation	Vineyard Dr	Bennett Wy	Install traffic signal and ADA ramps	$500,000		$200,000		$300,000	2035
10	Signal Installation	Las Tablas Rd	Florence St	Install traffic signal, ADA ramps, and LTL on Las Tablas	$650,000		$300,000		$350,000	2035
11	Left Turn Lane	Ramada Dr	Main St to Highway 46 West	at Marquita and Volpi Ysabel. 3-12' lanes; 2-5' shoulder; No Parking	$1,000,000	$500,000			$500,000	2035
12	Left Turn Lane	Theater Dr	Main St to PRCL	Two (2) travel lanes, a left turn lane and bike lanes	$1,000,000		$800,000		$200,000	2035
				Road Improvement Fee Projects Total	**$52,224,000**	**$500,000**	**$13,840,000**	**$15,559,000**	**$22,325,000**	**-**

TABLE 22
TEMPLETON CIRCULATION STUDY 2017 UPDATE CAPITAL IMPROVEMENTS PROJECTS

#	Project Type	Location	From	Improvement	Cost Estimate	Less: Existing Deficiencies	Less: Other Sources	Less: Regional COG	Funding From Impact Fees	Expected Completion
Additional Projects										
13	Auxiliary Lanes	US 101	Vineyard Dr to Main St	Construct NB/SB Auxiliary Lanes	$3,500,000		$3,500,000		$0	-
14	Interchange Improvements	Las Tablas Rd	Phase 3	Widening to 5 lanes (Bridge Removal and replacement) or Roundabouts	$15,000,000		$15,000,000		$0	-
15	Roadway Realignment	Las Tablas Rd	Bend to Main St	3 12' lanes and 2-5' shoulders extend Las Tablas Road to Main	$4,000,000		$4,000,000		$0	-
16	Signal Installation	Main St	Gibson Rd	Install traffic signal (previously Area A, meets warrant with Las Tablas Extension)	$500,000		$500,000		$0	-
17	Signal Installation	Highway 46 West	Vineyard Dr	Intersection Improvements by Caltrans	$1,000,000		$1,000,000		$0	-
18	Signal Installation	Highway 46 West	Bethel Rd	Install traffic signal and left turn lane	$850,000		$850,000		$0	-
19	Safety Enhancement	Bethel Rd	Vineyard Dr to Las Tablas Rd	Correct existing deficiency	$1,000,000	$1,000,000			$0	-
20	Bicycle Enhancement	Bike Lanes per County Bikeways Plan		Class II Bike Lanes	$5,000,000		$5,000,000		$0	-
21	Pedestrian Enhancement	Walkways per Pedestrian Circulation Plan		Concrete or stabilized paths	TBD		TBD		$0	-
22	Trails	Trails per Parks and Recreation Element		Concrete or stabilized paths	TBD		TBD		$0	-
23	Transit Amenities	Vineyard Dr	Park & Ride Lot	Construction of lot and shelters	$350,000		$350,000		$0	-
24	Park & Ride Amenities	Las Tablas Rd	Park & Ride Lot	Expand existing facility	$250,000		$250,000		$0	-
25	Drainage Facility	Salinas Ave	at Toad Creek	Increase culvert capacity	$400,000	$400,000			$0	-
26	Drainage Facility	Godell St	at East End	Increase storm drain size	$300,000	$300,000			$0	-
27	Drainage Facility	Main St	at Toad Creek	Increase culvert capacity	$400,000	$400,000			$0	-
28	Drainage Facility	Main St	near Gibson Rd	Install storm drain	$850,000	$850,000			$0	-
				Additional Projects Total	**$33,400,000**	**$2,950,000**	**$30,450,000**	**$0**	**$0**	**-**

TABLE 22
TEMPLETON CIRCULATION STUDY 2017 UPDATE CAPITAL IMPROVEMENTS PROJECTS

#	Project Type	Location	From	Improvement	Cost Estimate	Less Existing Deficiencies	Less Other Sources	Less Regional COG	Funding From Impact Fees	Expected Completion
Completed Capital Improvement Projects										
Circulation Study Updates (1991-FY15/16)					$179,024				$179,024	-
	Interchange Structures	Main St	Theater Dr to Ramada Dr	Cost to date for previous PSR, operational studies and Caltrans PSR-	$209,696				$209,696	-
	Interchange Structures	Vineyard Dr	Phase 1 (All $)	Widen 3 lanes (Bennett to Main Street) and install signals at ramps.	$9,420,261		$111,414	$1,500,000	$4,773,691	Done
	Roadway Closure	Old County Rd	Main St to Gibson Rd	Close Road	-				$0	Done
	Pedestrian Enhancement	Florence St	Las Tablas Rd to Las Tablas Creek	Low Impact Development	$688,977		$688,977		$0	Done
	Interchange Structures	Las Tablas Rd	Phase 1	Open Abutments and create a TWLTL. Install signals at Ramps. PSR costs included.	$2,691,853		$84,000	$150,000	$2,457,853	Done
	Roadway Extension	Bennett Wy	Las Tablas Rd to Petersen Ranch Rd	3 -12' lanes; 2 -5' shoulders. TS at Las Tablas Rd and Bennett Wy	$1,942,933	$786,000 (developer $)			$1,156,933	Done
	Left Turn Lane	Las Tablas Rd	Hwy 101 to Bethel Rd	Add Center Turn Lane	$312,266				$312,266	Done
	Pedestrian Enhancement	Las Tablas Rd	Pedestrian Crossing	Crosswalk with/median refuge island	$20,000		$20,000		$0	Done
	Left Turn Lane	Main St	Gibson Rd to Creekside Ranch Rd	3-12' lanes; 2-5' shoulder; Intermittent Parking;	$170,618				$170,618	Done
	Signal Installation	Main St	Vineyard Dr	Install traffic signal	$105,376				$105,376	Done
	Signal Modification	Main St	Vineyard Dr	Modify Signal	$145,207				$145,207	Done
	Transit Amenities	Las Tablas Rd	Park & Ride Lot	Construction of lot and shelters	$250,000		$250,000		$0	Done
	Bike Lanes	Vineyard Dr	Bethel Rd to Bennett Wy	Widen for Class II Bike Lanes with BTA funding	$462,226		$462,226		$0	Done
				Completed Capital Improvement Project Table	**$16,209,717**	**$786,000**	**$1,616,617**	**$1,650,000**	**$9,510,663**	-
				GRAND TOTAL	**$101,833,717**	**$4,236,000**	**$45,906,617**	**$17,209,000**	**$31,835,663**	

On July 2, 1991, the San Luis Obispo County Board of Supervisors approved the Templeton Circulation Study and adopted a resolution imposing road improvement fees on new development under the provisions of Ordinance 2379. These impact fees were established to fund the portion of roadway needs that are attributable to new development within the study area. These improvements were explicitly determined for the likely types of development that will occur in this area over the next 50 or more years. The following discussion highlights the considerations involved in establishing an equitable basis for impact fees in the Templeton area.

A. Public/Private Share of Costs – In determining an appropriate level for the impact fees, improvement costs must first be apportioned among the public and private sectors according to the benefits provided to existing and future traffic sources. Existing deficiencies are not eligible for correction with impact fee funding, and such costs must be subtracted from the cost estimates. Existing deficiencies are defined as problems present at the time of initial roadway or intersection construction (i.e. vertical and horizontal curves).

The next step in assigning eligible costs to the impact fee calculation is to estimate the portion of roadway improvement costs attributable to through traffic. These costs are not eligible for funding by impact fees. In Templeton, most through traffic uses Highway 101 or State Route 46 West. "Local" traffic, i.e. traffic generated within Templeton, creates the need for improvements at the freeway interchanges. For this reason, the improvements to the State Route 46 and Main Street interchanges are included in the impact fee calculations.

B. Fee Area – In the previous 2009 Templeton Circulation Study and Fee Update, Templeton had three distinct Fee Areas. However, based on discussions with the County, the Fee Areas were consolidated into a single Fee Area in this update due to the use of the proposed flat fee. The Templeton Study area is characterized by a natural "screenline" (U.S. 101) that spans approximately through the center of the area, thereby forming a natural transportation barrier or "traffic shed". For the most part, the recommended transportation improvements are concentrated in the urban area, adjacent to the screenline. The Fee Area consists of the area containing urbanized areas of Templeton URL, Main Street Interchange, and rural areas as the boundary for the Fee Area.

C. Distribution Among Future Traffic Sources. When the total private share of costs has been established, these costs must be further distributed among the various land uses that contribute to traffic growth. The calculated fee is based on the amount of traffic generated during the weekday afternoon (PM) peak hour for each type of new development. The amount of traffic is determined utilizing the growth in trips between the existing and buildout travel demand models and rates within the Institute of Transportation Engineers (ITE)-published *Trip Generation Manual (9th Edition).* Since the model's land use input unit is daily trips, ITE rates were utilized to factor the growth in daily trips to determine the growth in PM peak hour trips. The change in land use and corresponding number of equivalent trip units, PM peak hour trips, has been recalculated to reflect growth between existing and buildout conditions.

Impact Fee Calculation

The impact fees calculated in this 2017 TIF update will fund the full cost of the proposed transportation improvements, less costs required to be paid or dedicated by property owners and/or grants obtained from state and federal sources. In order to establish a rough proportionality between the fee amount proposed and new development, PM peak hour trip generation for added land uses has been estimated in Table 23.

TABLE 23
MODEL UPDATE LAND USE GROWTH PEAK HOUR TRIPS

Land Use (PM peak hr trips)	Templeton Fee Area
Single Family	477
Multi-Family	18
Mobile Home	0
Retail	967
Office	631
Industrial	265
Government	15
Education	0
Other	91
Total	**2,463**

As shown in Table 23, 2,463 PM peak hour trips are expected to be generated by new development in Templeton. As shown in the 2017 Capital Improvement Program (Table 22) the entire CIP is not proposed to be funded through the impact fee program (RIF). Table 24 presents a summary of the total funding required from the impact fee program, consistent with the Impact Fee totals in Table 22.

TABLE 24
REMAINING FUNDING REQUIRED FROM IMPACT FEES

Templeton Fee Area Impact Fee Funding	
Total Required Funding From Impact Fees	$22,325,000
Funds Balance (As of 6/30/2016)	$1,479,168
Net Funding Required From Impact Fees	**$20,845,832**

As shown in Table 24, the total required funding from the impact fee program, after accounting for the current fee balance is approximately $20.8 million. It was determined that a flat rate fee for all land use types is adequate to accommodate the build-out traffic volumes and recommended Capitol Improvement Program. Table 25 presents a summary of the flat fee for Templeton Fee Area.

TABLE 25
PROPOSED TEMPLETON 2017 FEE UPDATE

Templeton Flat Fee per Peak Hour Trip (PHT):	**$8,462**

As shown in Table 15, and per discussions with the County, it is recommended that a flat rate fee be carried forward with this 2017 fee update. Pass-by trips will be applied to the rate based on the land use permit. Compared to the 2009 Road Improvement Fees, the proposed flat fee results in a lower residential fee and a higher non-residential fee in the Urban and Rural Areas, and a lower fee overall for the Commercial and Industrial Areas. Buildout of the added future land uses under this proposed fee rate will result in a full-funded fee program.

Appendix

A. Land Use Trip Rates by TAZ

B. Trips by TAZ

C. Model Calibration Report

D. Travel Demand Model User Guide

E. Signal Warrants

F. Level of Service Worksheets

APPENDIX-A

LAND USE TRIP RATES BY TAZ

APPENDIX TABLE 1
EXISTING CONDITONS (2015) MODEL TRIP GENERATION RATES BY TAZ - ALL EXCEPT RETAIL

TAZ	SF Trips/DU	MF Trips/DU	MH Trips/DU	Office FAR	Office Trips/ KSF	Industrial FAR	Industrial Trips/ KSF	Gov't. FAR	Gov't. Trips/ KSF	Educ. FAR	Educ.Trips/ Student	Other FAR	Other Trips/ KSF
100	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
101	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
102	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
103	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
104	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
105	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
106	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
107	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
108	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
200	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
201	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
202	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
203	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
204	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
205	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
206	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
207	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
208	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
209	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
210	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
211	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
212	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
213	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
214	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
300	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.1	6.97
301	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
302	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
303	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	1.29	0.25	0
304	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
305	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
306	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
307	9.00	6.63	4.81	0.25	11.03	0	0	0.25	0	1	0	0.25	0
400	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
401	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
402	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
403	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
404	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
405	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
406	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
407	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
408	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
409	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
410	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
411	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	0
412	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
413	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
414	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
415	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
416	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
417	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
418	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
419	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
420	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
421	9.00	3.32	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
422	9.00	4.42	4.81	0.25	11.03	0.3	6.97	0.25	0	1	1.29	0.25	9.11
423	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
424	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
425	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
426	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
427	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
428	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
429	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
430	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
431	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
432	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
433	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
434	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
435	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	1.29	0.25	0
436	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
437	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
438	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
439	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
440	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
441	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
442	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
443	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	1.71	0.25	0

APPENDIX TABLE 1
EXISTING CONDITONS (2015) MODEL TRIP GENERATION RATES BY TAZ - ALL EXCEPT RETAIL

TAZ	SF Trips/DU	MF Trips/DU	MH Trips/DU	Office FAR	Office Trips/ KSF	Industrial FAR	Industrial Trips/ KSF	Gov't. FAR	Gov't. Trips/ KSF	Educ. FAR	Educ.Trips/ Student	Other FAR	Other Trips/ KSF
444	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	1.71	0.25	0
445	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.455	0.25	0
446	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	22.88
447	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
448	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
449	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
450	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
451	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
452	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
453	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
454	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
455	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
456	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
457	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
458	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	0
459	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
500	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	0	1	0	0.25	0
501	9.00	6.63	4.81	0.25	11.03	0.25	6.97	0.25	0	1	0	0.25	0
502	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
503	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
504	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
505	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
506	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
507	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
600	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
601	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
602	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
603	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
604	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	9.11
605	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
606	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
607	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0
608	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	0	1	0	0.25	0

APPENDIX TABLE 3
BUILDOUT CONDITONS (2035) MODEL TRIP GENERATION RATES FOR VACANT PARCELS BY TAZ - ALL EXCEPT RETAIL

TAZ	SF Trips/ DU	MF Trips/ DU	MH Trips/ DU	Office FAR	Office Trips/ KSF	Industrial FAR	Industrial Trips/ KSF	Gov't. FAR	Gov't. Trips/ KSF	Educ. FAR	Educ.Trips/ Student	Other FAR	Other Trips/ KSF
100	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
101	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
102	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.05	3.48
103	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
104	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.05	3.48
105	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
106	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
107	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
108	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
200	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.05	3.48
201	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
202	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
203	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
204	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
205	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
206	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
207	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
208	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
209	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
210	3.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
211	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
212	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
213	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.05	3.48
214	6.00	6.63	2.40	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
300	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
301	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
302	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
303	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.29	0.1	3.48
304	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11	1	0	0.25	9.11
305	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
306	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
307	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.1	6.47
400	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
401	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
402	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
403	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
404	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
405	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0	0	1	0	0.25	9.11
406	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
407	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
408	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
409	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
410	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
411	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
412	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
413	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
414	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
415	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
416	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
417	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
418	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
419	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
420	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
421	9.00	3.32	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
422	9.00	4.42	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.29	0.25	9.11
423	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
424	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
425	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
426	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
427	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11	1	0	0.25	9.11
428	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
429	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
430	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
431	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
432	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
433	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
434	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
435	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.29	0.25	9.11
436	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
437	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
438	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11

APPENDIX TABLE 3
BUILDOUT CONDITONS (2035) MODEL TRIP GENERATION RATES FOR VACANT PARCELS BY TAZ - ALL EXCEPT RETAIL

TAZ	SF Trips/ DU	MF Trips/ DU	MH Trips/ DU	Office FAR	Office Trips/ KSF	Industrial FAR	Industrial Trips/ KSF	Gov't. FAR	Gov't. Trips/ KSF	Educ. FAR	Educ.Trips/ Student	Other FAR	Other Trips/ KSF
439	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
440	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.1	3.48
441	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.1	3.48
442	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.1	3.48
443	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.1	11.01	1	1.71	0.25	9.11
444	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.71	0.25	9.11
445	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	1.455	0.25	9.11
446	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
447	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
448	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
449	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
450	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
451	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
452	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
453	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
454	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
455	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
456	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
457	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
458	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
459	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
500	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	11.01	1	0	0.25	9.11
501	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	11.01	1	0	0.25	9.11
502	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	11.01	1	0	0.25	9.11
503	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	11.01	1	0	0.25	9.11
504	9.00	6.63	4.81	0.25	11.03	0.1	6.97	0.25	11.01	1	0	0.25	9.11
505	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
506	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
507	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
600	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.1	11.01	1	0	0.25	9.11
601	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
602	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
603	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
604	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
605	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
606	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
607	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11
608	9.00	6.63	4.81	0.25	11.03	0.3	6.97	0.25	11.01	1	0	0.25	9.11

Appendix-B

TRIPS BY TAZ

APPENDIX TABLE 2
EXISTING CONDITIONS (2015) MODEL TRIP GENERATION VOLUMES BY TAZ

TAZ	SF Trips	MF Trips	MH Trips	Retail Trips	Office Trips	Industrial Trips	Govt Trips	Educ Trips	Other Trips
100	387	7	14	0	0	0	0	0	0
101	369	0	19	174	0	0	0	0	0
102	351	7	0	4	0	0	0	0	0
103	216	0	14	0	0	0	0	0	0
104	81	0	5	0	0	0	0	0	0
105	18	0	0	0	0	0	0	0	0
106	63	0	0	55	0	0	0	0	0
107	81	0	5	0	0	0	0	0	0
108	72	7	5	0	0	0	0	0	0
200	48	0	0	0	0	0	0	0	0
201	126	7	0	0	0	0	0	0	0
202	114	0	5	0	0	0	0	0	0
203	84	0	5	0	0	0	0	0	0
204	180	0	22	0	0	0	0	0	0
205	195	0	24	0	0	0	0	0	0
206	75	7	2	0	0	0	0	0	0
207	165	7	7	0	0	0	0	0	0
208	54	0	12	0	0	0	0	0	0
209	69	0	12	0	0	0	0	0	0
210	132	0	24	0	0	0	0	0	0
211	378	7	14	0	0	0	0	0	0
212	66	13	0	0	0	0	0	0	0
213	108	0	12	0	0	0	0	0	0
214	18	7	0	0	0	0	0	0	0
300	54	0	0	0	0	0	0	0	1,557
301	306	0	10	0	0	0	0	0	0
302	333	0	14	0	0	0	0	0	0
303	369	0	5	0	0	0	0	697	0
304	0	0	0	0	0	0	0	0	0
305	441	0	0	0	0	0	0	0	0
306	666	13	24	0	0	0	0	0	0
307	450	7	0	0	0	0	0	0	0
400	117	0	0	0	0	0	0	0	0
401	108	0	0	0	0	0	0	0	0
402	27	0	0	75	0	0	0	0	0
403	180	0	0	0	0	0	0	0	0
404	0	0	919	0	195	0	0	0	0
405	1161	0	813	271	0	0	0	0	0
406	9	0	0	0	0	0	0	0	0
407	36	0	0	338	0	0	0	0	0
408	279	0	0	0	0	0	0	0	0
409	144	0	0	0	0	0	0	0	0
410	162	0	0	0	0	0	0	0	0
411	9	0	0	0	0	0	170	0	0
412	405	0	0	0	0	0	0	0	0
413	261	0	0	0	0	0	0	0	0
414	864	239	0	0	0	0	0	0	0
415	1026	0	0	0	0	0	0	0	0
416	450	0	0	0	0	0	0	0	0
417	513	0	0	0	2,458	0	0	0	0
418	0	0	0	0	482	0	0	0	0
419	378	0	0	0	81	0	0	0	0
420	0	0	0	487	845	0	0	0	0
421	0	133	0	733	804	0	0	0	0
422	0	234	0	0	245	0	0	19	500

APPENDIX TABLE 2
EXISTING CONDITIONS (2015) MODEL TRIP GENERATION VOLUMES BY TAZ

TAZ	SF Trips	MF Trips	MH Trips	Retail Trips	Office Trips	Industrial Trips	Govt Trips	Educ Trips	Other Trips
423	306	0	0	0	0	0	0	0	1,005
424	846	0	0	0	0	0	0	0	0
425	0	0	0	0	0	0	0	0	0
426	153	0	0	0	0	0	0	0	0
427	252	0	0	0	0	0	0	0	0
428	207	0	0	0	0	0	0	0	0
429	252	0	0	0	0	0	0	0	0
430	234	0	0	0	0	0	0	0	0
431	117	0	0	0	0	0	0	0	483
432	81	0	0	833	0	0	0	0	208
433	198	0	0	2944	0	0	0	0	0
434	243	0	568	0	0	0	0	0	0
435	837	0	10	0	0	0	0	58	0
436	945	0	0	0	253	0	0	0	0
437	180	0	0	0	0	0	0	0	0
438	756	0	10	0	0	0	0	0	0
439	153	0	0	0	0	0	0	0	0
440	18	0	0	0	0	0	0	0	0
441	27	0	0	0	0	0	0	0	0
442	36	0	0	0	0	0	0	0	0
443	27	0	0	0	0	0	0	2,788	0
444	81	0	0	0	0	0	0	15	0
445	0	0	0	0	0	0	224	1,528	0
446	252	0	173	1671	212	154	0	0	808
447	333	40	5	1382	23	0	0	0	89
448	738	0	0	0	0	0	0	0	0
449	540	0	0	293	0	0	0	0	0
450	792	13	5	0	0	0	0	0	0
451	378	93	0	3595	336	0	0	0	155
452	423	0	14	0	0	0	0	0	0
453	243	504	0	253	333	815	0	0	0
454	54	0	0	0	0	0	0	0	0
455	1989	0	0	0	0	0	0	0	0
456	54	0	0	0	0	0	0	0	0
457	900	93	0	0	115	1,558	0	0	0
458	0	0	0	0	0	0	578	0	0
459	9	0	5	0	0	0	0	0	0
500	0	7	0	1730	278	324	0	0	0
501	18	0	0	1567	618	1,028	0	0	0
502	0	0	0	606	0	1,713	0	0	0
503	18	0	0	0	0	0	0	0	0
504	0	0	0	1133	779	1,253	0	0	0
505	0	0	0	0	0	0	0	0	0
506	0	0	0	0	0	2,206	0	0	0
507	0	0	5	0	0	0	0	0	0
600	0	0	0	14423	0	222	0	0	172
601	0	0	0	5905	0	1,504	0	0	0
602	36	0	0	0	0	0	0	0	0
603	54	0	0	0	0	0	0	0	0
604	342	7	14	0	0	0	0	0	215
605	63	7	0	0	0	0	0	0	0
606	63	0	0	0	0	0	0	0	0
607	27	0	10	0	0	0	0	0	0
608	63	0	0	0	0	0	0	0	0

APPENDIX TABLE 4
BUILDOUT CONDITIONS (2035) MODEL TRIP GENERATION VOLUMES BY TAZ

TAZ	SF Trips	MF Trips	MH Trips	Retail Trips	Office Trips	Industrial Trips	Govt Trips	Educ Trips	Other Trips
100	612	7	14	0	0	0	0	0	0
101	567	0	19	174	0	0	0	0	0
102	405	7	0	4	0	0	0	0	34
103	252	0	14	0	0	0	0	0	0
104	81	0	5	0	0	0	0	0	3
105	18	0	0	0	0	0	0	0	0
106	63	0	0	55	0	0	0	0	0
107	99	0	5	0	0	0	0	0	0
108	90	7	5	0	0	0	0	0	0
200	96	0	0	0	0	0	0	0	66
201	162	7	0	0	0	0	0	0	0
202	114	0	5	0	0	0	0	0	0
203	102	0	5	0	0	0	0	0	0
204	234	0	22	0	0	0	0	0	0
205	243	0	24	0	0	0	0	0	0
206	93	7	2	0	0	0	0	0	0
207	210	7	7	0	0	0	0	0	0
208	66	0	12	0	0	0	0	0	0
209	105	0	12	0	0	0	0	0	0
210	162	0	24	0	0	0	0	0	0
211	414	7	14	0	0	0	0	0	0
212	102	13	0	0	0	0	0	0	0
213	174	0	12	0	0	0	0	0	77
214	42	7	0	0	0	0	0	0	0
300	54	0	0	0	0	0	0	0	1,557
301	369	0	10	0	0	0	0	0	0
302	423	0	14	0	0	0	0	0	0
303	459	0	5	0	0	0	0	697	82
304	0	0	0	0	0	0	0	0	0
305	711	0	0	0	0	0	0	0	0
306	1359	13	24	0	0	0	0	0	0
307	945	7	0	0	0	0	0	0	579
400	117	0	0	0	0	0	0	0	0
401	171	0	0	0	0	0	0	0	0
402	54	0	0	75	0	0	0	0	0
403	198	0	0	0	0	0	0	0	0
404	0	0	919	0	195	0	0	0	0
405	1179	0	813	271	0	0	0	0	0
406	9	0	0	0	0	0	0	0	0
407	90	0	0	338	0	0	0	0	0
408	288	0	0	0	0	0	0	0	0
409	144	0	0	0	0	0	0	0	0
410	162	0	0	0	0	0	0	0	0
411	126	0	0	94	0	0	170	0	0
412	405	0	0	0	0	0	0	0	0
413	261	0	0	0	0	0	0	0	0
414	882	239	0	0	344	0	0	0	0
415	1026	0	0	0	0	0	0	0	0
416	468	0	0	0	0	0	0	0	0
417	513	0	0	0	2,592	0	0	0	0
418	0	0	0	1432	944	0	0	0	0
419	378	0	0	0	1,232	0	0	0	0
420	0	0	0	487	845	0	0	0	0
421	0	133	0	733	1,825	0	0	0	0
422	0	393	0	0	628	0	0	19	500

APPENDIX TABLE 4
BUILDOUT CONDITIONS (2035) MODEL TRIP GENERATION VOLUMES BY TAZ

TAZ	SF Trips	MF Trips	MH Trips	Retail Trips	Office Trips	Industrial Trips	Govt Trips	Educ Trips	Other Trips
423	306	0	0	0	0	0	0	0	1,005
424	846	0	0	0	0	0	0	0	0
425	0	0	0	377	0	0	0	0	0
426	153	0	0	0	0	0	0	0	0
427	324	0	0	0	0	0	0	0	0
428	207	0	0	0	0	0	0	0	0
429	252	0	0	0	0	0	0	0	0
430	234	0	0	0	0	0	0	0	0
431	153	0	0	0	138	0	0	0	483
432	90	0	0	1192	0	0	0	0	208
433	225	0	0	3127	0	0	0	0	0
434	396	0	568	629	0	0	0	0	0
435	855	0	10	0	0	0	0	58	0
436	1053	0	0	0	253	0	0	0	0
437	198	0	0	0	0	0	0	0	0
438	756	0	10	0	0	0	0	0	0
439	180	0	0	0	0	0	0	0	0
440	72	0	0	0	0	0	0	0	23
441	45	0	0	0	0	0	0	0	22
442	54	0	0	0	0	0	0	0	19
443	36	0	0	0	0	0	111	2,788	0
444	117	0	0	203	0	0	0	15	0
445	0	0	0	0	0	0	224	1,528	0
446	252	0	173	2326	212	154	0	0	808
447	333	40	5	1382	23	0	0	0	89
448	882	0	0	0	0	0	0	0	0
449	837	0	0	334	0	0	0	0	0
450	864	13	5	0	0	0	0	0	0
451	378	106	0	3728	336	0	0	0	155
452	477	0	14	0	0	0	0	0	0
453	243	504	0	320	333	815	0	0	0
454	54	0	0	0	0	0	0	0	0
455	2241	0	0	0	519	0	0	0	0
456	54	0	0	0	520	0	0	0	0
457	900	113	0	292	115	1,558	0	0	0
458	0	0	0	1305	0	0	578	0	0
459	27	0	5	0	0	0	0	0	0
500	0	7	0	1921	278	1,406	0	0	0
501	18	0	0	1590	618	1,184	0	0	0
502	0	0	0	606	0	2,094	0	0	0
503	18	0	0	0	0	0	0	0	0
504	0	0	0	3195	779	1,536	0	0	0
505	0	0	0	0	0	0	0	0	0
506	0	0	0	3089	0	2,206	0	0	0
507	0	0	5	0	0	0	0	0	0
600	0	0	0	16518	0	222	298	0	172
601	18	0	0	6115	0	1,504	0	0	0
602	288	0	0	103	0	0	0	0	0
603	90	0	0	0	0	0	0	0	0
604	810	7	14	0	0	0	0	0	215
605	117	7	0	0	0	0	0	0	0
606	135	0	0	0	0	0	0	0	0
607	63	0	10	0	0	0	0	0	0
608	144	0	0	0	0	0	0	0	0

Appendix-C

MODEL CALIBRATION REPORT

2015 Travel Demand Model and Circulation Study Update for the Templeton Community

Existing Conditions Model Calibration Report

Prepared for:

County of San Luis Obispo

Prepared by:

omni · means
ENGINEERING SOLUTIONS

2015 Travel Demand Model (TDM) and Circulation Study Update for the Templeton Community

Existing Conditions Model Calibration Report

Prepared for:

County of San Luis Obispo

County Government Center, Room 206

San Luis Obispo, CA 93408

Prepared by:

Omni-Means, Ltd.

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September 2016

25-6462-08

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Introduction

San Luis Obispo County has retained Omni-Means to update the Templeton Travel Demand Model (TDM), Circulation Study, and the Traffic Impact Fee. In 2008, Omni-Means updated the Templeton TDM, and previously upgraded the prior model to the *Cube* transportation planning software. This report has been prepared in order to document the supporting technical documentation for the Templeton Travel Demand Model (TDM) calibration of the 2015 Existing Conditions. The existing traffic flow conditions were simulated in the Templeton Travel Demand Model. The Model is used to forecast future travel within the Templeton area and to determine the future circulation improvements to support the capacity needs identified.

Model Calibration

The previous section described the creation of a complete but "un-validated" base year model, i.e. the model may not accurately reflect real-world travel demand. For "calibrating" the model to available field data, several model runs with different parameter adjustments were tested in order that average daily traffic forecasts at critical locations and screen-line analyses yielded satisfactory levels of accuracy. Localized adjustments that included trip generation adjustments for specific zones, refinement of link speeds and capacities, adjustment of congested travel time expressions etc., were tested until realistic and acceptable forecasts were obtained.

Calibrating the model so that it reasonably reflects real world travel demand requires matching the model estimate on a set of links against traffic counts. The existing traffic counts are compared to model link outputs by their difference. The associated percent model difference is then compared to an industry standard acceptable percent error target for each segment, by facility type, by screenlines, and by a system-wide correlation.

Table 3 presents the calibration for each selected facility used in the calibration process.

TABLE 3: TEMPLETON TRAVEL DEMAND MODEL - CALIBRATION SUMMARY

Roadway	CALIB01 Location	Facility Type	Daily Count Year	Daily Count	Model Forecast	Model Error %	Target Error %	Squared Error
U.S. 101	South of Vineyard Drive	Freeway	2014	61,800	61,880	0.1%	7%	0.00%
	Between Vineyard Drive and Las Tablas Road	Freeway	2014	56,900	57,780	1.5%	7%	0.02%
	Between Las Tablas Road and Main Street	Freeway	2014	57,700	61,840	7.2%	7%	0.51%
	Between Main Street and S.R. 46 West	Freeway	2014	54,200	54,440	0.4%	7%	0.00%
	North of S.R. 46 West	Freeway	2014	62,700	62,880	0.3%	7%	0.00%
S.R. 46 West	East of Bethel Road	Highway	2015	6,900	6,550	5.1%	10%	0.26%
	West of Vineyard Drive	Highway	2015	5,807	5,870	1.1%	10%	0.01%
Bennet Way	South of Vineyard Drive	Collector	2015	1,010	810	19.8%	25%	3.92%
	South of Las Tablas Road	Collector	2015	1,440	1,390	3.5%	25%	0.12%
	North of Las Tablas Road	Collector	2015	2,359	2,450	3.9%	25%	0.15%
Bethel Road	South of Vineyard Drive	Collector	2015	1,324	860	35.0%	25%	12.28%
	North of Vineyard Drive	Collector	2015	2,128	1,420	33.3%	25%	11.07%
	North of Brambles Court	Collector	2015	773	1,040	34.5%	25%	11.93%
El Pomar Drive	North of Templeton Road	Arterial	2015	3,083	3,550	15.1%	15%	2.29%
	West of South El Pomar Road	Arterial	2015	927	1,040	12.2%	15%	1.49%
Florence Street	West of Old County Road	Collector	2015	2,007	2,520	25.6%	25%	6.53%
Las Tablas Road	West of Bethel Road	Arterial	2015	1,126	1,420	26.1%	15%	6.82%
	East of Bethel Road	Arterial	2015	2,929	3,590	22.6%	15%	5.09%
	West of Duncan Rd	Collector	2015	15,671	12,960	17.3%	25%	2.99%
	West of Florence St	Collector	2015	7,827	7,800	0.3%	25%	0.00%
	West of Main Street	Collector	2015	2,888	3,490	20.8%	25%	4.35%
Main Street	North of Vineyard Drive	Arterial	2015	7,608	6,890	9.4%	15%	0.89%
	South of Vineyard Drive	Collector	2015	2,815	2,990	6.2%	25%	0.39%
	North of Sixth Street	Arterial	2015	6,836	6,180	9.6%	15%	0.92%
	North of Creekside Ranch Road	Collector	2015	7,199	7,240	0.6%	25%	0.00%
Neal Springs Road	North of El Pomar Drive	Collector	2015	1,572	1,790	13.9%	25%	1.92%
Old County Road	North of Vineyard Drive	Collector	2015	2,378	2,850	19.8%	25%	3.94%
	North of Florence Street	Collector	2015	1,309	920	29.7%	25%	8.83%
Peterson Ranch Road	East of Bethel Road	Collector	2015	394	280	28.9%	25%	8.37%
Ramada Drive	North of Main Street	Collector	2015	5,073	5,160	1.7%	25%	0.03%
	South of S.R. 46 West	Collector	2015	5,722	5,790	1.2%	25%	0.01%
River Road	North of Neal Springs Drive	Collector	2015	1,609	1,590	1.2%	25%	0.01%
Rossi Road	South of Vineyard Drive	Collector	2015	4,658	4,610	1.0%	25%	0.01%
Santa Rita Road	South of Vineyard Drive	Collector	2015	627	810	29.2%	25%	8.52%
	South of Templeton Hills Road	Collector	2015	470	380	19.1%	25%	3.67%
Sixth Street	West of Main Street	Collector	2015	1,039	1,170	12.6%	25%	1.59%
South El Pomar Road	East of Templeton Road	Collector	2015	677	550	18.8%	25%	3.52%
Templeton Road	East of Main Street	Collector	2015	4,586	5,400	17.7%	25%	3.15%
	South of El Pomar Drive	Collector	2015	1,667	1,680	0.8%	25%	0.01%
Templeton Hills Road	East of Bethel Road	Collector	2015	307	170	44.6%	25%	19.91%
Theatre Drive	South of Templeton Cemetery Road	Collector	2015	8,136	9,030	11.0%	25%	1.21%
	South of S.R. 46 West	Collector	2015	8,642	9,140	5.8%	25%	0.33%
Vineyard Drive	West of S.R. 46 West	Collector	2015	1,647	1,380	16.2%	25%	2.63%
	West of Bethel Road	Collector	2015	4,351	4,470	2.7%	25%	0.07%
	East of Bethel Road	Collector	2015	6,079	5,330	12.3%	25%	1.52%
	West of U.S. 101	Arterial	2015	12,571	12,330	1.9%	15%	0.04%
	East of U.S. 101	Arterial	2015	10,520	10,520	0.0%	15%	0.00%

Road Type

The travel demand model validation is based on criteria created by the Federal Highway Administration (*FHWA, Calibration and Adjustment of System Planning Models, 1990.)* and Caltrans (*California Department of Transportation, Travel Forecasting Guidelines, 1992.)*. Table 4 presents the Federal Highway Administration (FHWA)-recommended absolute error targets for each facility type. The Root-Mean-Squared Error (RMSE) more heavily weights large errors.

TABLE 4: TEMPLETON TDM CALIBRATION SUMMARY BY FACILITY TYPE

Roadway Classification	Traffic Count	Model Volume	% Error Model	% Error Target	RMSE Model	RMSE Target
Freeway	444,380	446,560	0.5%	7.0%	2.33%	15.0%
Highway	12,707	12,420	2.3%	10.0%	3.67%	40.0%
Arterial	49,486	50,710	2.5%	15.0%	14.49%	40.0%
Collector	104,498	102,280	2.1%	25.0%	20.12%	50.0%
Total	611,071	611,970	0.1%	5.0%	37.34%	35.0%

1. Federal Highway Administration, Calibration and Adjustment of System Planning Models, 1990.
2. California Department of Transportation, Travel Forecasting Guidelines, 1992.

Table 4 shows that the model satisfies each facility-specific absolute percent-error target and the RMSE targets for all facilities.

Screenlines

Screenlines are imaginary boundaries that measure the total traffic across multiple parallel routes. Screenlines allow for calibration across areas rather than at specific sites. Traffic count locations were selected such that five screenlines were defined for the Templeton TDM. Table 5 shows the model screenline calibration results. All screenline results are within recommended percent error targets.

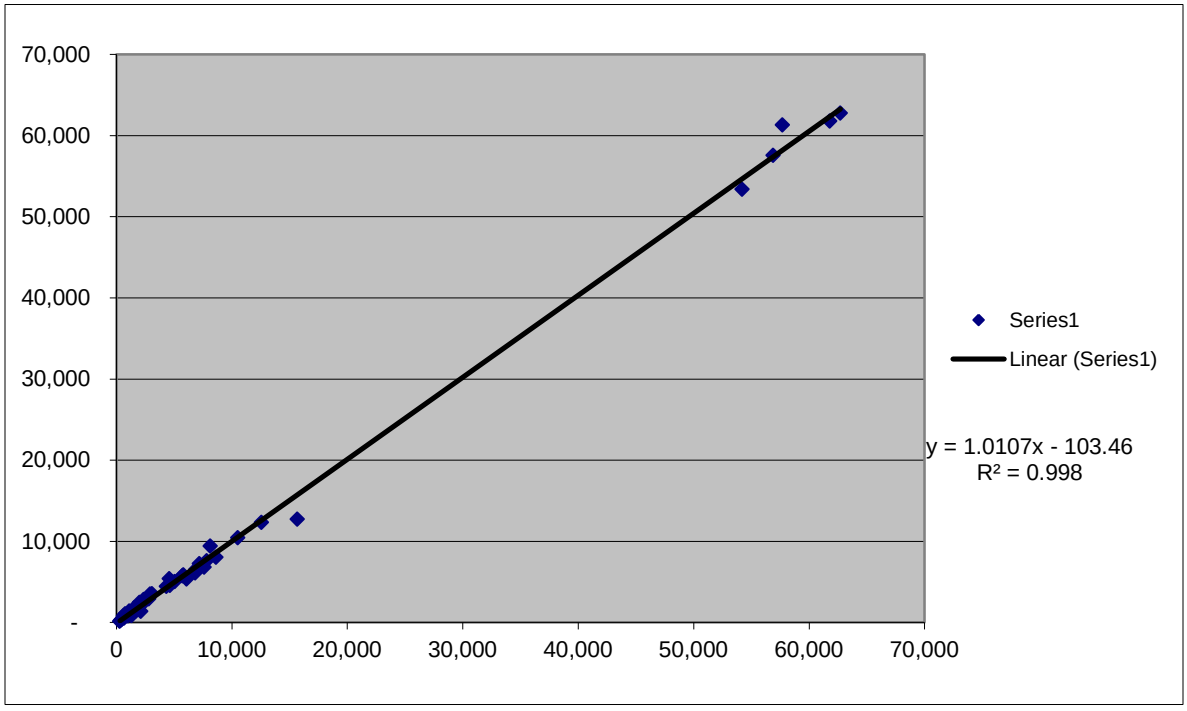
TABLE 5: TEMPLETON TDM SCREENLINE SUMMARY

Screenline	Traffic Count	Model Volume	% Error Model	% Error Target
West of US 101	**51,920**	**50,010**	**3.7%**	**15.0%**
Vineyard Dr w/o US 101	12,571	12,330		
Las Tablas Rd w/o US 101	15,671	12,960		
SR 46 w/o US 101	6,900	6,550		
Theater Dr n/o Main St	8,642	9,140		
Theater Dr s/o SR 46	8,136	9,030		
East of US 101	**36,341**	**36,510**	**0.5%**	**15.0%**
Vineyard Dr e/o US 101	10,520	10,520		
Las Tablas Rd e/o US 101	7,827	7,800		
Main St e/o US 101	7,199	7,240		
Ramada Dr s/o SR 46	5,722	5,790		
Ramada Dr n/o Main St	5,073	5,160		
East of Bethel Rd	**16,609**	**15,920**	**4.1%**	**15.0%**
SR 46 e/o Bethel Rd	6,900	6,550		
Peterson Ranch Rd e/o Bethel Rd	394	280		

Las Tablas Rd e/o Bethel Rd	2,929	3,590		
Templeton Hills Rd e/o Bethel Rd	307	170		
Vineyard Dr e/o Bethel Rd	6,079	5,330		
North of Petterson Ranch Rd	**67,244**	**71,910**	**6.9%**	**15.0%**
Bethel Rd n/o Brambles Ct	773	1,040		
US 101 n/o Las Tablas	57,700	61,840		
Main St s/o US 101	7,199	7,240		
Neal Springs Rd n/o El Pomar Dr	1,572	1,790		
North of Vineyard Dr	**72,897**	**76,550**	**5.0%**	**15.0%**
Bethel Rd n/o Vineyard Dr	2,128	1,420		
US 101 n/o Vineyard Dr	57,700	61,840		
Old Country Rd n/o Vineyard Dr	2,378	2,850		
Main St n/o Vineyard Dr	7,608	6,890		
el Pomar Dr n/o Templeton Rd	3,083	3,550		

Region-wide Correlation Coefficient

The correlation coefficient represents the model forecasts of each segment compared to the traffic counts on a system-wide basis, and how close they are correlated. The region-wide model correlation was calculated by plotting the model forecasts against the roadway counts. An acceptable correlation coefficient is 0.88. As shown in the following chart, which plots model traffic forecasts to the most recent traffic counts, the model correlation coefficient is 0.998, meaning the model explains slightly more than 99% of the variability in the traffic counts.



Appendix-D

TRAVEL DEMAND MODEL USER GUIDE

Templeton Travel Demand Model User Guide

This section presents instructions to guide the general user of the Templeton TDM on how to make some basic changes/revisions to the model.

Land Use Revisions – can be performed within *ArcView* GIS Environment or using the *Excel* spreadsheet software depending upon the nature and extent of revisions. Simple revisions such as changing trip generation rates can be performed by modifying the trip generation pre-processor spreadsheet using *Excel*. For more extensive revisions involving changes to zonal land uses, modification to TAZ definitions etc., it is recommended that *ArcView* GIS software be used to update the TAZ map. If TAZ boundaries are modified or new TAZs added, the TAZ attribute for the parcels affected by the changes may be updated using *Excel.* In such cases, updated land use summaries should be prepared using *Excel* and then newly imported into the trip generation pre-processor. The revised/updated land use database should be exported in DBF format for use with *Cube* software (Citilabs).

Street Network Revisions – can be performed within the *Cube* environment or can be performed using *ArcView* and freshly imported into *Cube*. *Cube* offers capabilities to edit links, nodes, add/update link attributes etc. For the most part, it is recommended that small to medium scale network changes be performed in *Cube* itself as this minimizes the steps involved. The user should refer to the *Cube* software user manual and/or on-line help for a complete comprehension of *Cube* capabilities.

The user may also desire to perform network edits using *ArcView*. *ArcView* offers capabilities to perform edits to the network shape-file and the attached link attributes file in DBF format. The user may wish to export the *Cube* format network that requires edits into by using *Cube*'s "Export to Link Shape File" function. The user should refer to ESRI's *ArcView* Software Manual and/or on-line help for making network edits within the *ArcView* environment. The shape-file-attribute file combination can be imported into *Cube* and can be used to build a new *Cube* network. The user should note that the *Cube* network is only a "stick figure" representation of the *ArcView* shape-file, which is accurate enough for traffic modeling purposes. Using *ArcView* is recommended if the user needs realistic overlay and plotting capabilities for the *Cube* network. If the user prefers to use *ArcView*, then a *Cube* accessory utility known as *GIS Tools*, should be procured from Citilabs.

Job-Stream Script Revisions – can be performed using common text editors like *Notepad* or *Wordpad*, or using *Cube* itself. Since the job-stream is only a simple text file written in *Cube* scripting language, the user can potentially modify it extensively to incorporate additional modules as needed. Existing modules, command functions and parameters can also be revised as needed. The model's job-stream file currently offers the user capability to modify number and range of TAZs analyzed, trip production-attraction equations, trip distribution parameters, K-factors, external-external trips, and trip assignment functions that include link capacities and congested travel time expressions. The user should refer to the *Cube* software user manual for a complete understanding of the different command functions used in the job-stream. The user should also check with the *Cube* software user manual for syntax if any new modules, commands, or parameters are created within the job-stream file.

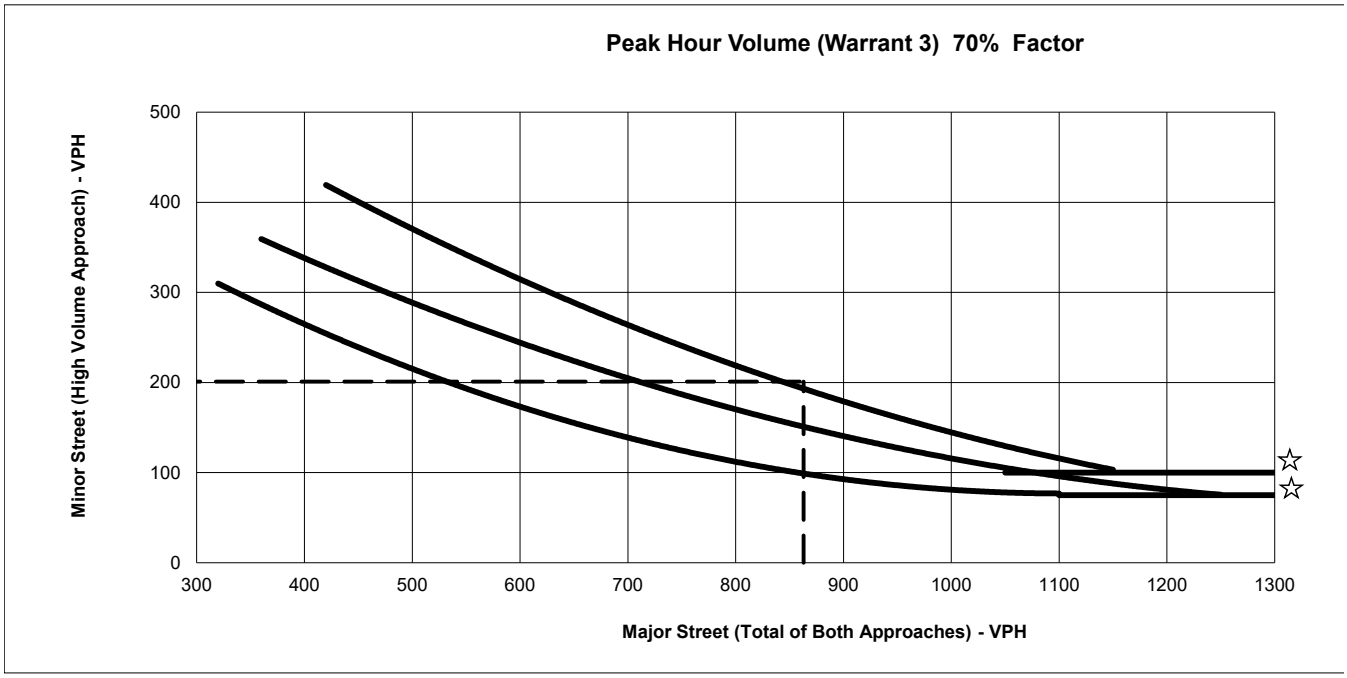
Other Revisions – The user can also modify/revise model accessories like the friction factor file and turn-penalty file as needed. These files are also simple text files that can be modified using common text editors like *Notepad* or *Wordpad*.

Appendix-E

SIGNAL WARRANTS

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

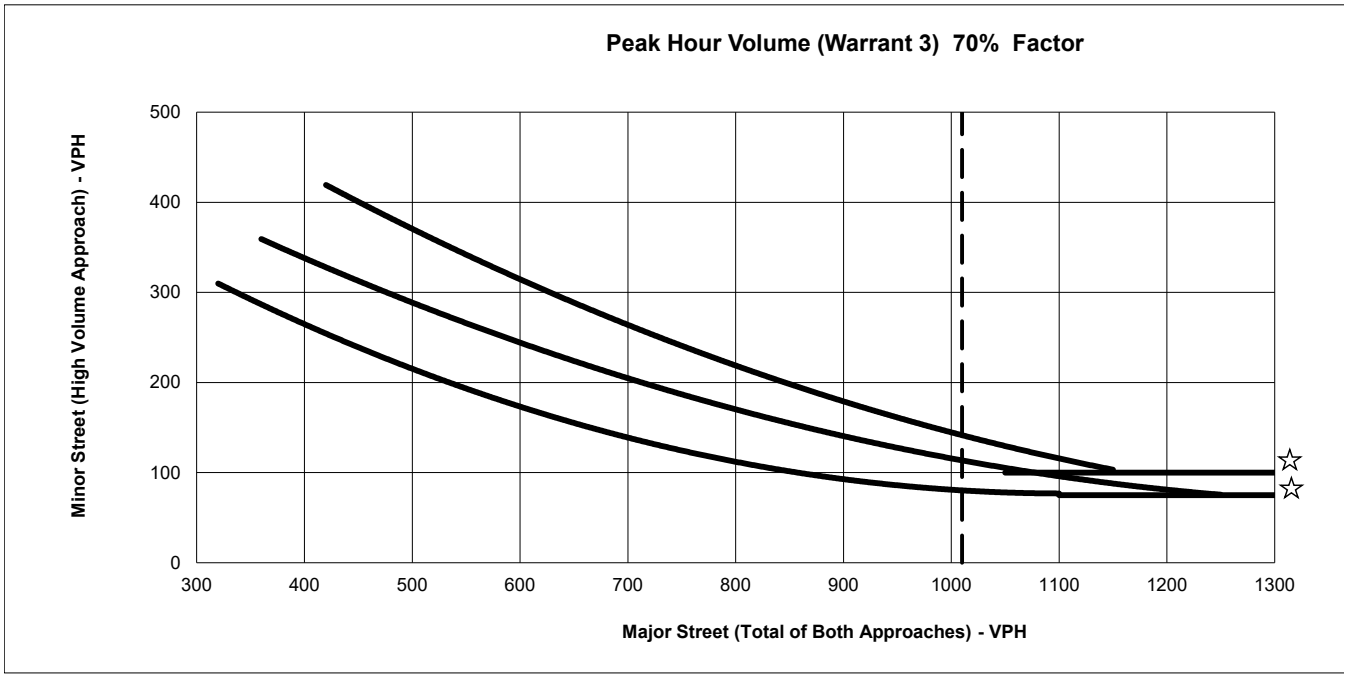
EXISTING (PM)

		Number of Lanes
Major Approach	Main St	1
Minor Approach	US 101 SB Ramps	1

Major St. Volume:	863
Minor St. Volume:	201
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

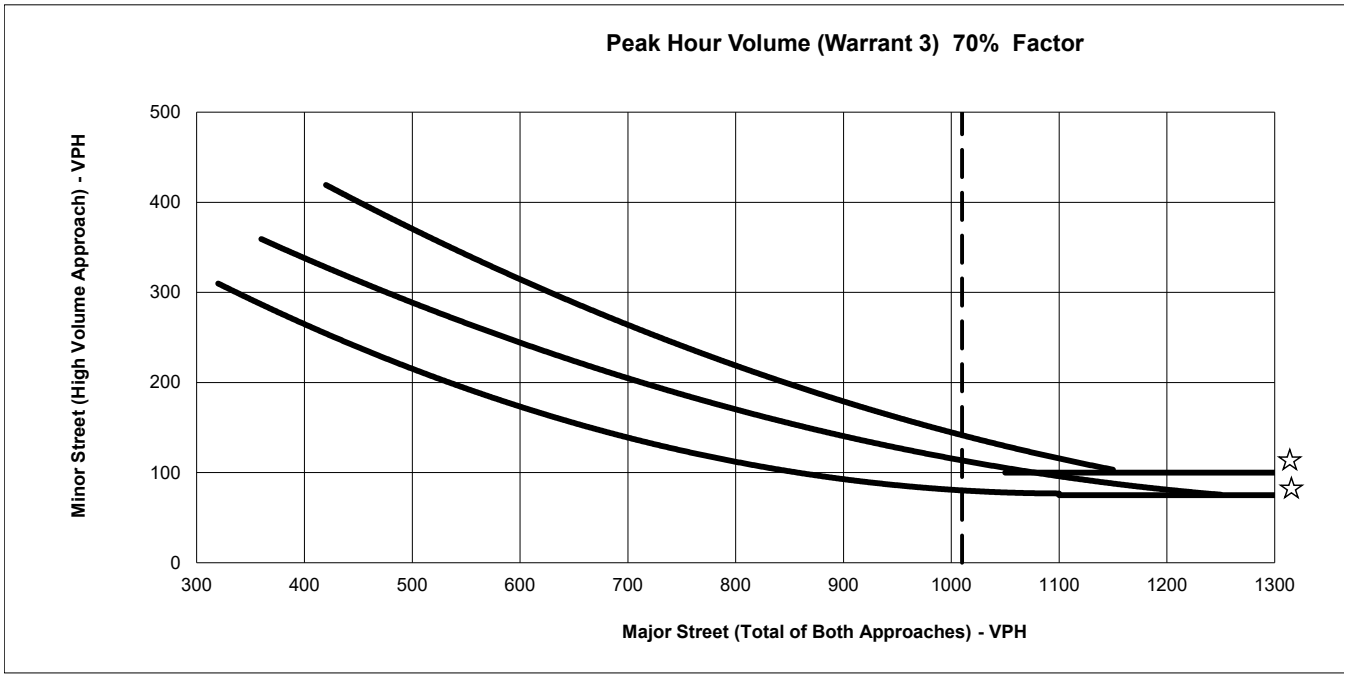
2035 BUILDOUT (PM)

		Number of Lanes
Major Approach	SR 46 W	1
Minor Approach	Vineyard Dr	1

Major St. Volume:	1010
Minor St. Volume:	550
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

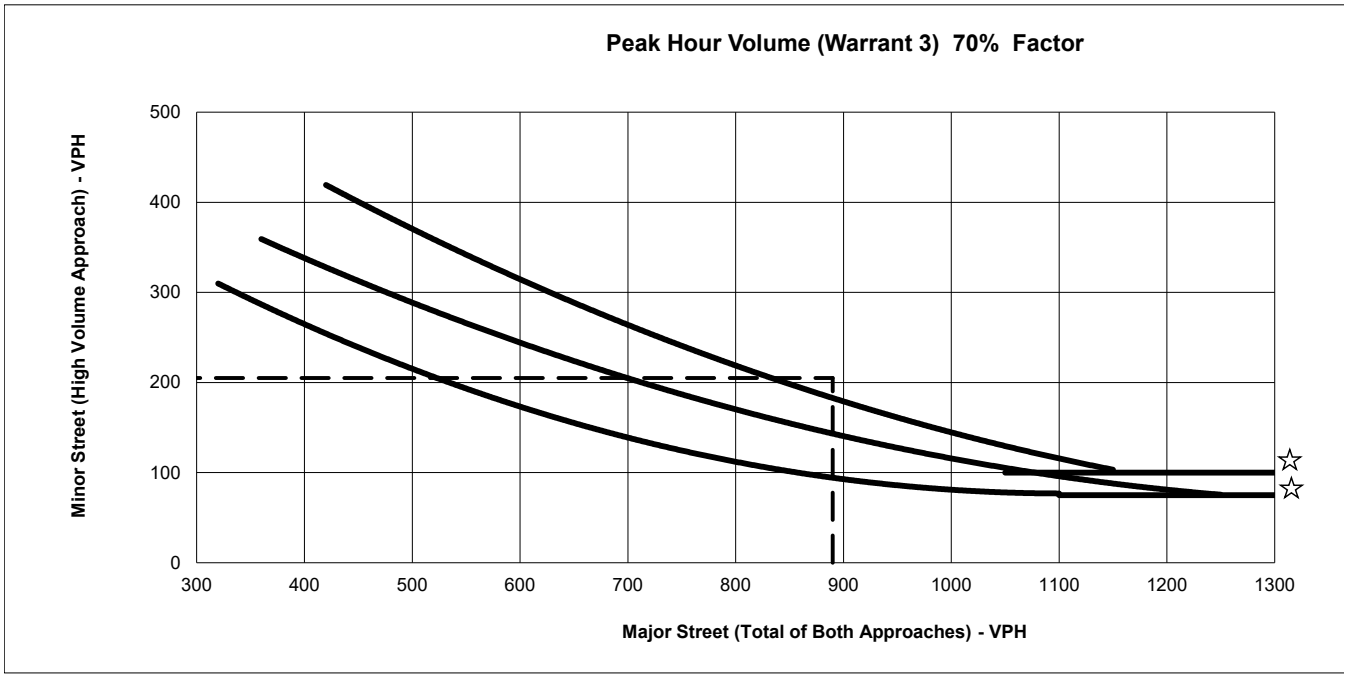
2035 BUILDOUT (PM)

		Number of Lanes
Major Approach	Main St	1
Minor Approach	US 101 NB Ramps	1

Major St. Volume:	1010
Minor St. Volume:	550
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

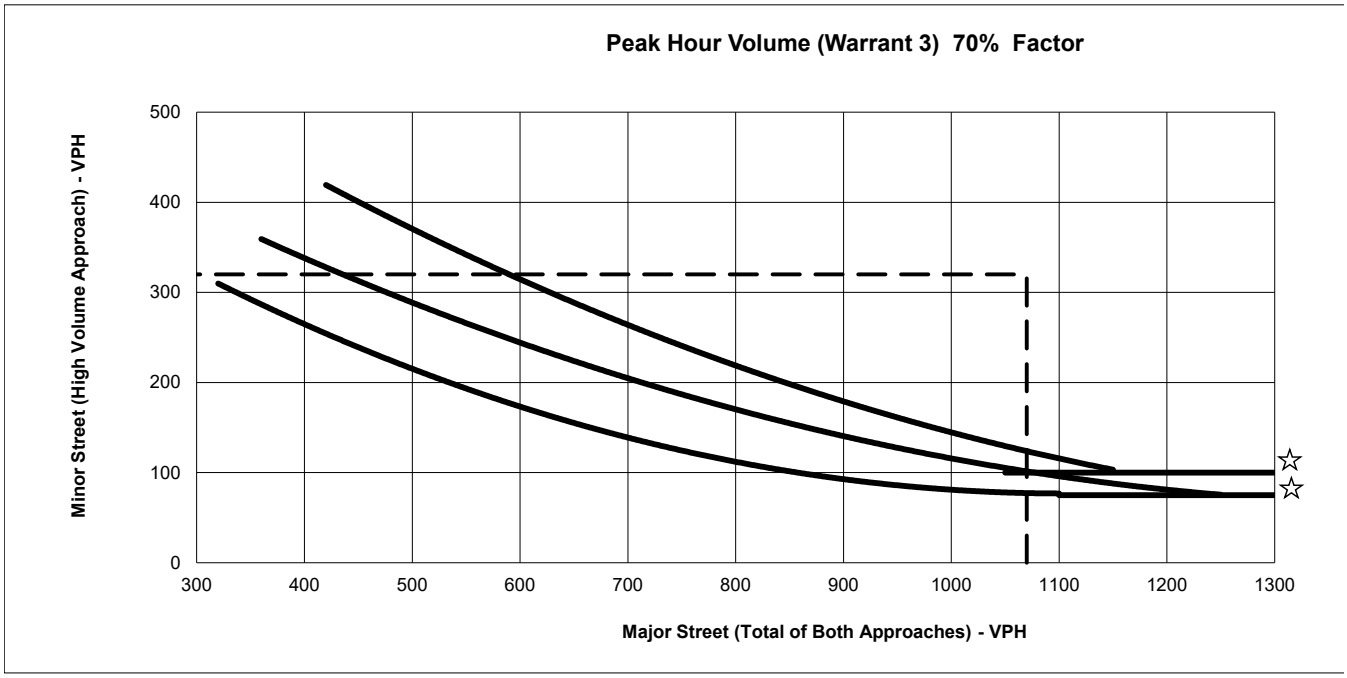
2035 BUILDOUT (AM)

		Number of Lanes
Major Approach	Las Tablas	1
Minor Approach	Florence	1

Major St. Volume:	890
Minor St. Volume:	205
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

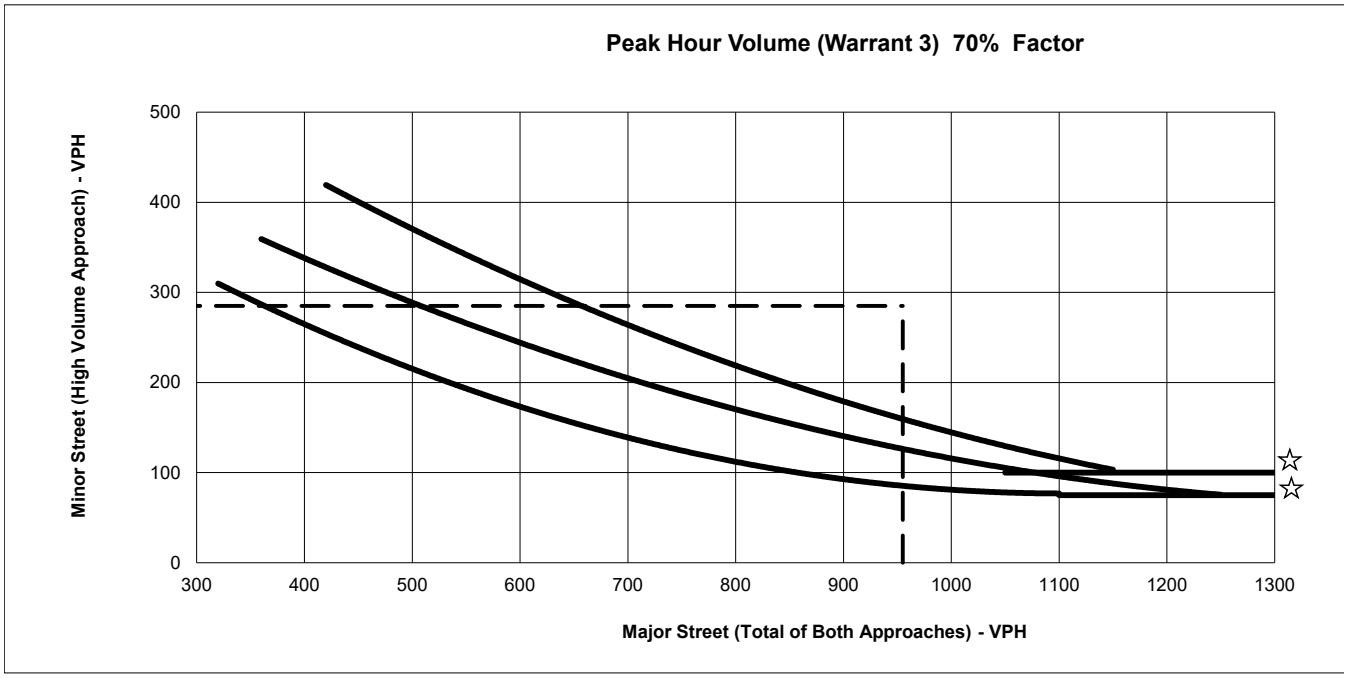
2035 BUILDOUT (PM)

		Number of Lanes
Major Approach	Main St	1
Minor Approach	Ramada	1

Major St. Volume:	1070
Minor St. Volume:	320
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

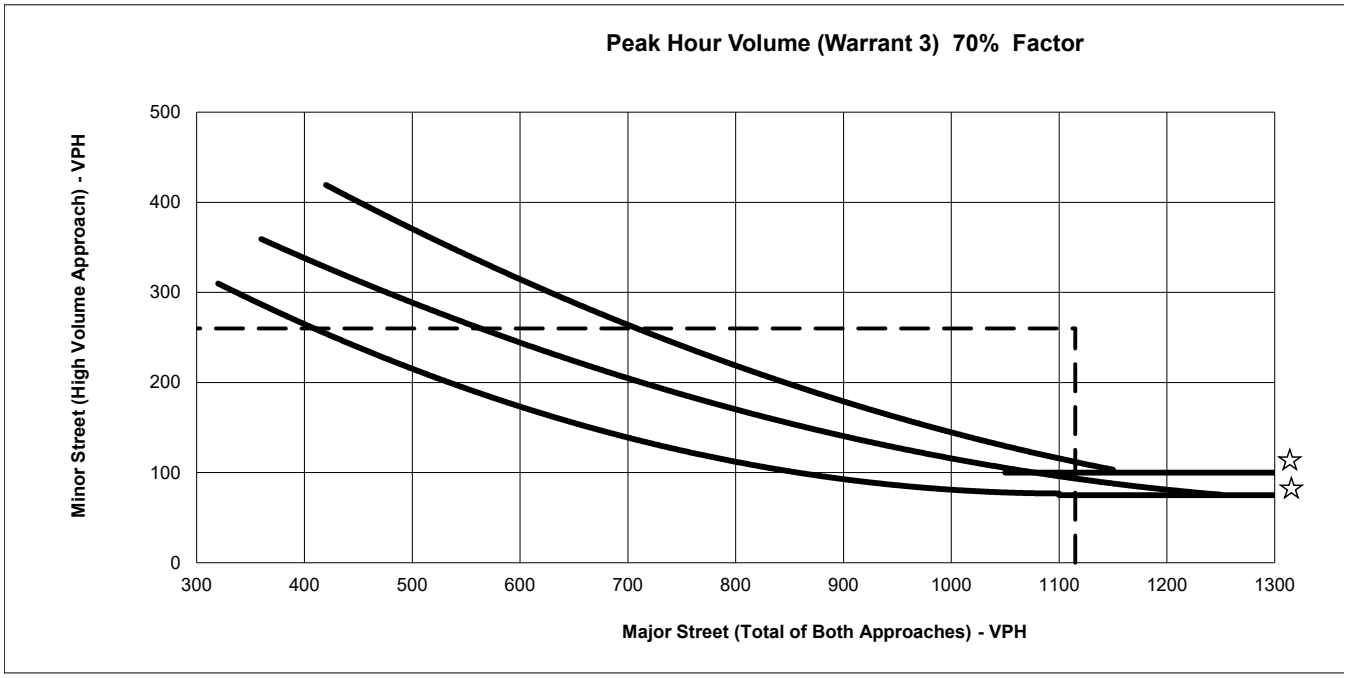
2035 BUILDOUT (AM)

		Number of Lanes
Major Approach	Vineyard	1
Minor Approach	Bethel	2

Major St. Volume:	955
Minor St. Volume:	285
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

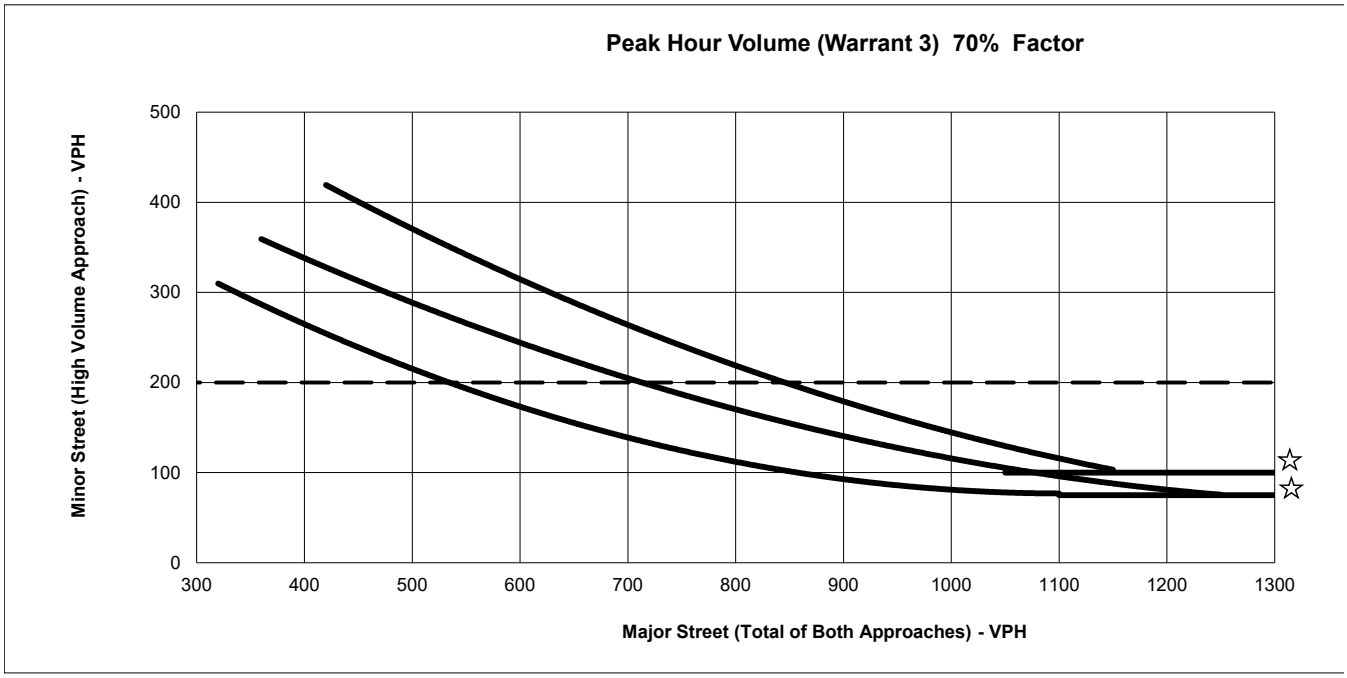
2035 BUILDOUT (AM)

		Number of Lanes
Major Approach	Vineyard	1
Minor Approach	Bennett	1

Major St. Volume:	1115
Minor St. Volume:	260
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

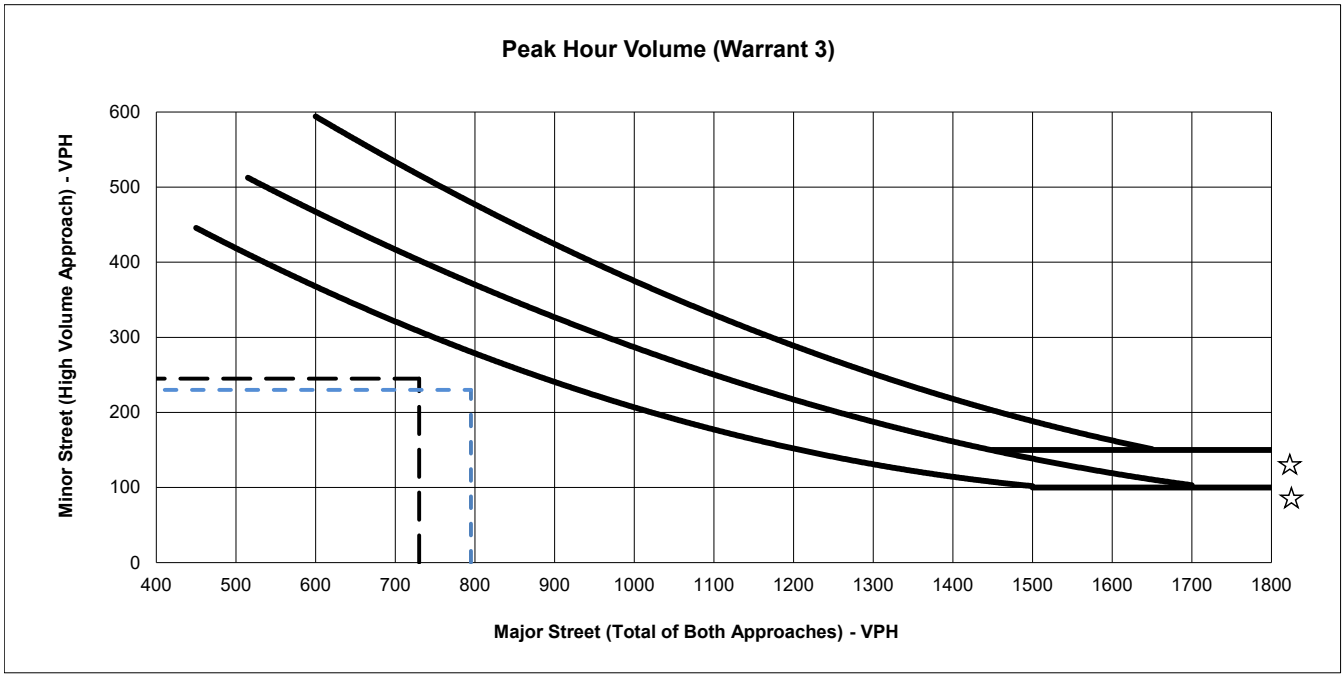
2035 BUILDOUT (AM)

		Number of Lanes
Major Approach	Vineyard	1
Minor Approach	Rossi	1

Major St. Volume:	1580
Minor St. Volume:	200
Warrant Met?:	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	470	600	590
700	325	700	415	700	540
800	285	800	370	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



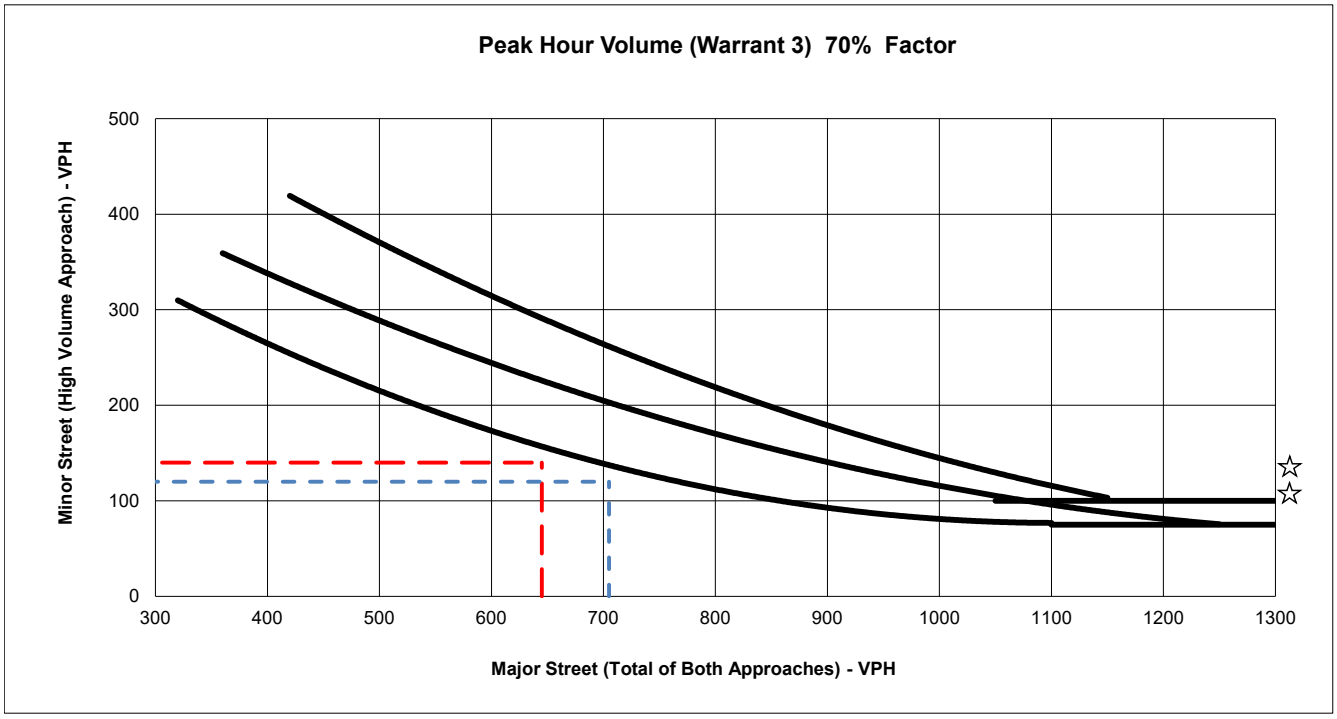
☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

2035 CIP ALT

		Number of Lanes	
Major Approach	MAIN ST	1	
Minor Approach	GIBSON/LAS TABLAS	1	Population <10,000
	AM PEAK	PM PEAK	
Major St. Volume:	730	795	
Minor St. Volume:	245	230	
Warrant Met?:			

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



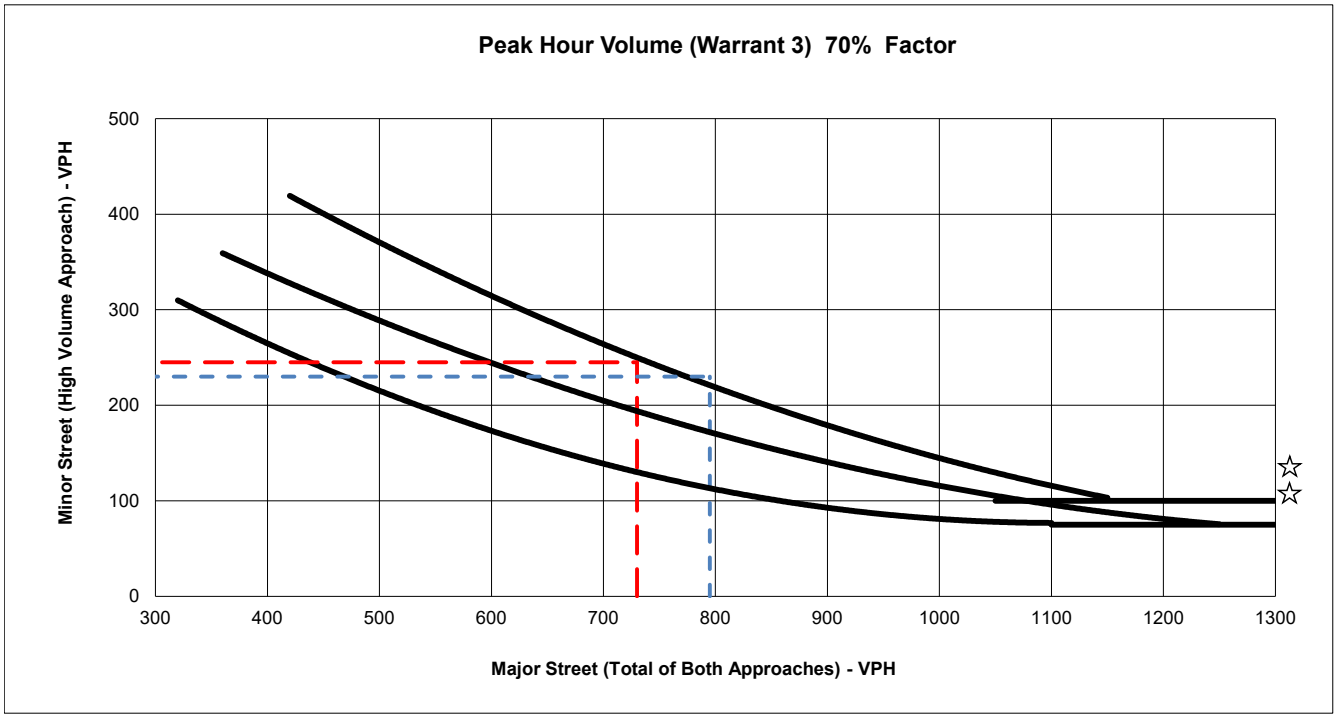
☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

2035

		Number of Lanes	
Major Approach	MAIN ST	1	
Minor Approach	GIBSON/LAS TABLAS	1	Population <10,000
	AM PEAK	PM PEAK	speed is 34-45
Major St. Volume:	645	705	
Minor St. Volume:	140	120	
Warrant Met?:	NO	NO	

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
400	265	400	340	400	N/A
500	210	500	290	500	375
600	180	600	240	600	310
700	150	700	200	700	260
800	90	800	175	800	220
900	100	900	140	900	180
1000	85	1000	120	1000	150
1100	75	1100	95	1150	100
1200	75	1200	80	1200	100
1300	75	1250	75	1300	100

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

2035 CIP ALT

		Number of Lanes	
Major Approach	MAIN ST	1	
Minor Approach	GIBSON/LAS TABLAS	1	Population <10,000
	AM PEAK	PM PEAK	speed is 34-45
Major St. Volume:	730	795	
Minor St. Volume:	245	230	
Warrant Met?:	Yes	Yes	

Appendix-F

LEVEL OF SERVICE WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	65	218	58	145	101	157	61	7	69	169	219
Future Volume (veh/h)	204	65	218	58	145	101	157	61	7	69	169	219
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	222	71	237	63	158	110	171	66	8	75	184	238
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	613	521	432	261	182	359	330	40	121	297	538
Arrive On Green	0.11	0.33	0.33	0.04	0.26	0.26	0.20	0.20	0.20	0.23	0.23	0.23
Sat Flow, veh/h	1774	1863	1583	1774	1024	713	1774	1630	198	532	1304	1583
Grp Volume(v), veh/h	222	71	237	63	0	268	171	0	74	259	0	238
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1737	1774	0	1828	1836	0	1583
Q Serve(g_s), s	6.9	2.1	9.3	2.1	0.0	10.7	6.7	0.0	2.7	10.0	0.0	9.2
Cycle Q Clear(g_c), s	6.9	2.1	9.3	2.1	0.0	10.7	6.7	0.0	2.7	10.0	0.0	9.2
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.11	0.29		1.00
Lane Grp Cap(c), veh/h	422	613	521	432	0	443	359	0	370	418	0	538
V/C Ratio(X)	0.53	0.12	0.46	0.15	0.00	0.60	0.48	0.00	0.20	0.62	0.00	0.44
Avail Cap(c_a), veh/h	448	613	521	453	0	443	359	0	370	418	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	18.5	20.9	20.4	0.0	25.9	27.8	0.0	26.2	27.4	0.0	20.3
Incr Delay (d2), s/veh	1.0	0.4	2.9	0.2	0.0	6.0	4.5	0.0	1.2	6.7	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.2	4.5	1.0	0.0	5.9	3.7	0.0	1.5	5.8	0.0	4.4
LnGrp Delay(d),s/veh	19.0	18.9	23.8	20.6	0.0	31.9	32.3	0.0	27.4	34.2	0.0	22.9
LnGrp LOS	B	B	C	C		C	C		C	C		C
Approach Vol, veh/h		530			331			245			497	
Approach Delay, s/veh		21.1			29.8			30.8			28.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	24.2		20.0	7.0	30.0		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	20.0		16.0	4.0	26.0		18.0
Max Q Clear Time (g_c+I1), s	8.9	12.7		8.7	4.1	11.3		12.0
Green Ext Time (p_c), s	0.1	1.6		0.5	0.0	2.4		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	229	480	445	76	7	232
Future Vol, veh/h	229	480	445	76	7	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	522	484	83	8	252

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	566	0	-	0	1545	525
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	1020	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1006	-	-	-	126	552
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	348	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1006	-	-	-	95	552
Mov Cap-2 Maneuver	-	-	-	-	95	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	262	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1006	-	-	-	95	552
HCM Lane V/C Ratio	0.247	-	-	-	0.08	0.457
HCM Control Delay (s)	9.8	-	-	-	46.2	16.9
HCM Lane LOS	A	-	-	-	E	C
HCM 95th %tile Q(veh)	1	-	-	-	0.3	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	529	0	0	509	168	168	2	180	0	0	0
Future Volume (veh/h)	82	529	0	0	509	168	168	2	180	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	89	575	0	0	553	183	183	2	196			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	113	1386	0	0	1174	997	274	3	247			
Arrive On Green	0.13	1.00	0.00	0.00	0.63	0.63	0.16	0.16	0.16			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1756	19	1583			
Grp Volume(v), veh/h	89	575	0	0	553	183	185	0	196			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1775	0	1583			
Q Serve(g_s), s	3.9	0.0	0.0	0.0	12.5	3.9	7.9	0.0	9.5			
Cycle Q Clear(g_c), s	3.9	0.0	0.0	0.0	12.5	3.9	7.9	0.0	9.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	113	1386	0	0	1174	997	277	0	247			
V/C Ratio(X)	0.78	0.41	0.00	0.00	0.47	0.18	0.67	0.00	0.79			
Avail Cap(c_a), veh/h	200	1386	0	0	1174	997	399	0	356			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.83	0.83	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.4	0.0	0.0	0.0	7.8	6.2	31.8	0.0	32.5			
Incr Delay (d2), s/veh	9.5	0.8	0.0	0.0	1.4	0.4	2.8	0.0	7.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.2	0.3	0.0	0.0	6.7	1.8	4.1	0.0	4.7			
LnGrp Delay(d),s/veh	43.8	0.8	0.0	0.0	9.1	6.6	34.6	0.0	40.1			
LnGrp LOS	D	A			A	A	C		D			
Approach Vol, veh/h		664			736			381				
Approach Delay, s/veh		6.5			8.5			37.4				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.1	54.4		16.5		63.5		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	9.0	41.0		18.0		54.0		
Max Q Clear Time (g_c+I1), s	5.9	14.5		11.5		2.0		
Green Ext Time (p_c), s	0.0	8.6		1.0		9.9		

Intersection Summary		
HCM 2010 Ctrl Delay		14.0
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	430	212	290	387	0	32	0	181	0	0	0
Future Volume (veh/h)	0	430	212	290	387	0	32	0	181	0	0	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	0	467	230	315	421	0	35	0	197	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	944	803	344	1399	0	264	0	236	0	2	2
Arrive On Green	0.00	0.51	0.51	0.39	1.00	0.00	0.15	0.00	0.15	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	1774	0	1583	0	1863	1583
Grp Volume(v), veh/h	0	467	230	315	421	0	35	0	197	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1774	0	1583	0	1863	1583
Q Serve(g_s), s	0.0	13.2	6.7	13.5	0.0	0.0	1.4	0.0	9.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.2	6.7	13.5	0.0	0.0	1.4	0.0	9.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	944	803	344	1399	0	264	0	236	0	2	2
V/C Ratio(X)	0.00	0.49	0.29	0.91	0.30	0.00	0.13	0.00	0.84	0.00	0.00	0.00
Avail Cap(c_a), veh/h	89	944	803	355	1399	0	355	0	317	0	373	317
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.0	11.4	23.8	0.0	0.0	29.6	0.0	33.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.9	24.3	0.5	0.0	0.2	0.0	13.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	3.1	8.8	0.2	0.0	0.7	0.0	5.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.8	12.3	48.1	0.5	0.0	29.8	0.0	46.4	0.0	0.0	0.0
LnGrp LOS		B	B	D	A		C		D			
Approach Vol, veh/h		697			736			232			0	
Approach Delay, s/veh		14.0			20.9			43.9			0.0	
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	64.1		15.9	19.5	44.5		0.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	16.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	2.0		11.7	15.5	15.2		0.0
Green Ext Time (p_c), s	0.0	6.6		0.3	0.1	0.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	601	18	60	359	14	41
Future Vol, veh/h	601	18	60	359	14	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	653	20	65	390	15	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	673	0	1184	663
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	521	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	918	-	209	461
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	918	-	194	461
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	194	461	-	-	918	-
HCM Lane V/C Ratio	0.078	0.097	-	-	0.071	-
HCM Control Delay (s)	25.1	13.6	-	-	9.2	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	555	0	14	350	9	5	0	57	7	1	1
Future Vol, veh/h	0	555	0	14	350	9	5	0	57	7	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	260	-	-	100	-	-	-	-	110	-	-	110
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	603	0	15	380	10	5	0	62	8	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	603	0	0	1019	1024	603	1019	1019	385
Stage 1	-	-	-	-	-	-	603	603	-	416	416	-
Stage 2	-	-	-	-	-	-	416	421	-	603	603	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1169	-	-	975	-	-	215	235	499	215	237	663
Stage 1	-	-	-	-	-	-	486	488	-	614	592	-
Stage 2	-	-	-	-	-	-	614	589	-	486	488	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1169	-	-	975	-	-	211	231	499	186	233	663
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	231	-	186	233	-
Stage 1	-	-	-	-	-	-	486	488	-	614	583	-
Stage 2	-	-	-	-	-	-	602	580	-	426	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	14	23.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	211	499	1169	-	-	975	-	-	191	663
HCM Lane V/C Ratio	0.026	0.124	-	-	-	0.016	-	-	0.046	0.002
HCM Control Delay (s)	22.5	13.2	0	-	-	8.8	-	-	24.7	10.4
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.4	0	-	-	0	-	-	0.1	0

Intersection	
Intersection Delay, s/veh	17.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	89	272	1	0	38	267	27	0	13	40	136
Future Vol, veh/h	0	89	272	1	0	38	267	27	0	13	40	136
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	97	296	1	0	41	290	29	0	14	43	148
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	20.7	18.4	13.3
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	7%	25%	11%	90%	0%
Vol Thru, %	21%	75%	80%	10%	0%
Vol Right, %	72%	0%	8%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	362	332	50	156
LT Vol	13	89	38	45	0
Through Vol	40	272	267	5	0
RT Vol	136	1	27	0	156
Lane Flow Rate	205	393	361	54	170
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.37	0.669	0.613	0.117	0.309
Departure Headway (Hd)	6.484	6.118	6.115	7.75	6.57
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	553	590	588	461	546
Service Time	4.548	4.167	4.166	5.512	4.332
HCM Lane V/C Ratio	0.371	0.666	0.614	0.117	0.311
HCM Control Delay	13.3	20.7	18.4	11.5	12.3
HCM Lane LOS	B	C	C	B	B
HCM 95th-tile Q	1.7	5	4.1	0.4	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	45	5	156
Future Vol, veh/h	0	45	5	156
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	49	5	170
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.1
HCM LOS	B

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	160	230	217	69	39	84
Future Vol, veh/h	160	230	217	69	39	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	6	-	6	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	182	261	247	78	44	95

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	325	0	-	0	911	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	625	-
Critical Hdwy	4.15	-	-	-	7.65	6.85
Critical Hdwy Stg 1	-	-	-	-	6.65	-
Critical Hdwy Stg 2	-	-	-	-	6.65	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1218	-	-	-	222	711
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	429	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1218	-	-	-	183	711
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1218	-	-	-	183	711
HCM Lane V/C Ratio	0.149	-	-	-	0.242	0.134
HCM Control Delay (s)	8.5	0	-	-	30.8	10.8
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.9	0.5

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	8	21	7	12	20	9	217	9	13	245	47
Future Vol, veh/h	67	8	21	7	12	20	9	217	9	13	245	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	9	23	8	13	22	10	236	10	14	266	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	598	585	292	596	606	241	317	0	0	246	0	0
Stage 1	320	320	-	260	260	-	-	-	-	-	-	-
Stage 2	278	265	-	336	346	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	414	423	747	415	411	798	1243	-	-	1320	-	-
Stage 1	692	652	-	745	693	-	-	-	-	-	-	-
Stage 2	728	689	-	678	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	387	415	747	390	403	798	1243	-	-	1320	-	-
Mov Cap-2 Maneuver	387	415	-	390	403	-	-	-	-	-	-	-
Stage 1	686	645	-	739	687	-	-	-	-	-	-	-
Stage 2	689	683	-	642	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	12.3	0.3	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1243	-	-	435	536	1320	-	-
HCM Lane V/C Ratio	0.008	-	-	0.24	0.079	0.011	-	-
HCM Control Delay (s)	7.9	-	-	15.9	12.3	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.3	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	1	56	0	0	0	19	231	0	1	338	18
Future Vol, veh/h	23	1	56	0	0	0	19	231	0	1	338	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	1	61	0	0	0	21	251	0	1	367	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	671	671	377	702	681	251	387	0	0	251	0	0
Stage 1	379	379	-	292	292	-	-	-	-	-	-	-
Stage 2	292	292	-	410	389	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	370	378	670	353	373	788	1171	-	-	1314	-	-
Stage 1	643	615	-	716	671	-	-	-	-	-	-	-
Stage 2	716	671	-	619	608	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	364	370	670	315	365	788	1171	-	-	1314	-	-
Mov Cap-2 Maneuver	364	370	-	315	365	-	-	-	-	-	-	-
Stage 1	629	614	-	701	657	-	-	-	-	-	-	-
Stage 2	701	657	-	561	607	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	0	0.6	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1171	-	-	535	-	1314	-	-
HCM Lane V/C Ratio	0.018	-	-	0.163	-	0.001	-	-
HCM Control Delay (s)	8.1	0	-	13	0	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	-	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	1	100	0	1	2	97	242	2	1	352	29
Future Vol, veh/h	26	1	100	0	1	2	97	242	2	1	352	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	1	109	0	1	2	105	263	2	1	383	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	878	877	398	930	891	264	414	0	0	265	0	0
Stage 1	401	401	-	475	475	-	-	-	-	-	-	-
Stage 2	477	476	-	455	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	268	287	652	248	282	775	1145	-	-	1299	-	-
Stage 1	626	601	-	570	557	-	-	-	-	-	-	-
Stage 2	569	557	-	585	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	256	652	189	251	775	1145	-	-	1299	-	-
Mov Cap-2 Maneuver	244	256	-	189	251	-	-	-	-	-	-	-
Stage 1	558	600	-	508	497	-	-	-	-	-	-	-
Stage 2	505	497	-	486	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	12.9	2.4	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1145	-	-	481	457	1299	-	-
HCM Lane V/C Ratio	0.092	-	-	0.287	0.007	0.001	-	-
HCM Control Delay (s)	8.5	0	-	15.5	12.9	7.8	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	1.2	0	0	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	80	96	45	16	37
Future Vol, veh/h	50	80	96	45	16	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	87	104	49	17	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	296	38	58	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	695	1034	1546	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	647	1034	1546	-	-	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	5.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1546	-	841	-	-
HCM Lane V/C Ratio	0.067	-	0.168	-	-
HCM Control Delay (s)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	134	218	20	266	1	130	1	12	0	0	0
Future Vol, veh/h	0	134	218	20	266	1	130	1	12	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	146	237	22	289	1	141	1	13	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	290	0	0	383	0	0	597	598	264	604	716	290
Stage 1	-	-	-	-	-	-	264	264	-	333	333	-
Stage 2	-	-	-	-	-	-	333	334	-	271	383	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1175	-	-	415	416	775	410	356	749
Stage 1	-	-	-	-	-	-	741	690	-	681	644	-
Stage 2	-	-	-	-	-	-	681	643	-	735	612	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1272	-	-	1175	-	-	408	407	775	396	348	749
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	407	-	396	348	-
Stage 1	-	-	-	-	-	-	741	690	-	681	630	-
Stage 2	-	-	-	-	-	-	666	629	-	721	612	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	17.6	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	408	725	1272	-	-	1175	-	-	-
HCM Lane V/C Ratio	0.346	0.019	-	-	-	0.019	-	-	-
HCM Control Delay (s)	18.4	10.1	0	-	-	8.1	0	-	0
HCM Lane LOS	C	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.5	0.1	0	-	-	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	387	1	29	749	62	3	0	75	145	0	10
Future Volume (veh/h)	6	387	1	29	749	62	3	0	75	145	0	10
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	7	421	1	32	814	67	3	0	82	158	0	11
Adj No. of Lanes	1	2	0	1	1	0	0	1	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	2229	5	681	1076	89	51	8	314	382	382	325
Arrive On Green	0.01	0.62	0.62	0.03	0.63	0.63	0.21	0.00	0.21	0.21	0.00	0.21
Sat Flow, veh/h	1774	3622	9	1774	1698	140	15	41	1531	1311	1863	1583
Grp Volume(v), veh/h	7	206	216	32	0	881	85	0	0	158	0	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	0	1838	1588	0	0	1311	1863	1583
Q Serve(g_s), s	0.1	3.9	3.9	0.5	0.0	26.3	0.0	0.0	0.0	3.6	0.0	0.4
Cycle Q Clear(g_c), s	0.1	3.9	3.9	0.5	0.0	26.3	3.5	0.0	0.0	7.1	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.08	0.04		0.96	1.00		1.00
Lane Grp Cap(c), veh/h	291	1089	1145	681	0	1165	373	0	0	382	382	325
V/C Ratio(X)	0.02	0.19	0.19	0.05	0.00	0.76	0.23	0.00	0.00	0.41	0.00	0.03
Avail Cap(c_a), veh/h	369	1089	1145	726	0	1165	373	0	0	382	382	325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	6.5	6.5	5.2	0.0	10.0	26.0	0.0	0.0	27.2	0.0	24.8
Incr Delay (d2), s/veh	0.0	0.4	0.4	0.0	0.0	4.6	1.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.1	0.2	0.0	14.7	1.7	0.0	0.0	3.1	0.0	0.2
LnGrp Delay(d),s/veh	9.6	6.9	6.9	5.2	0.0	14.6	27.4	0.0	0.0	27.9	0.0	24.9
LnGrp LOS	A	A	A	A		B	C			C		C
Approach Vol, veh/h		429			913			85			169	
Approach Delay, s/veh		6.9			14.3			27.4			27.7	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	52.0		20.0	4.6	53.4		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.5	5.9		5.5	2.1	28.3		9.1
Green Ext Time (p_c), s	0.0	11.5		0.7	0.0	8.8		0.5

Intersection Summary		
HCM 2010 Ctrl Delay		14.5
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	5	78	4	0	116	25	15	0	3	30	157	0	23	39	0
Future Vol, veh/h	0	5	78	4	0	116	25	15	0	3	30	157	0	23	39	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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	85	4	0	126	27	16	0	3	33	171	0	25	42	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	9.1	8.5	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	6%	74%	37%
Vol Thru, %	16%	90%	16%	63%
Vol Right, %	83%	5%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	87	156	62
LT Vol	3	5	116	23
Through Vol	30	78	25	39
RT Vol	157	4	15	0
Lane Flow Rate	207	95	170	67
Geometry Grp	1	1	1	1
Degree of Util (X)	0.239	0.124	0.223	0.091
Departure Headway (Hd)	4.164	4.731	4.743	4.875
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	861	756	756	734
Service Time	2.191	2.772	2.781	2.912
HCM Lane V/C Ratio	0.24	0.126	0.225	0.091
HCM Control Delay	8.5	8.4	9.1	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.4	0.9	0.3

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	133	72	18	110	16	55	38	15	21	44	4
Future Vol, veh/h	2	133	72	18	110	16	55	38	15	21	44	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	145	78	20	120	17	60	41	16	23	48	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	137	0	0	223	0	0	379	364	184	376	394	128
Stage 1	-	-	-	-	-	-	188	188	-	167	167	-
Stage 2	-	-	-	-	-	-	191	176	-	209	227	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1447	-	-	1346	-	-	579	564	858	581	542	922
Stage 1	-	-	-	-	-	-	814	745	-	835	760	-
Stage 2	-	-	-	-	-	-	811	753	-	793	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1447	-	-	1346	-	-	529	554	858	530	532	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	529	554	-	530	532	-
Stage 1	-	-	-	-	-	-	812	744	-	833	748	-
Stage 2	-	-	-	-	-	-	743	741	-	733	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1	12.7	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	539	858	1447	-	-	1346	-	-	531	922
HCM Lane V/C Ratio	0.188	0.019	0.002	-	-	0.015	-	-	0.133	0.005
HCM Control Delay (s)	13.2	9.3	7.5	0	-	7.7	0	-	12.8	8.9
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.7	0.1	0	-	-	0	-	-	0.5	0

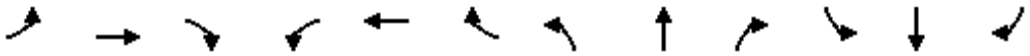
Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	4	23	176	11	41
Future Vol, veh/h	195	4	23	176	11	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	4	25	191	12	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	455	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	563	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	551	826
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	782	-

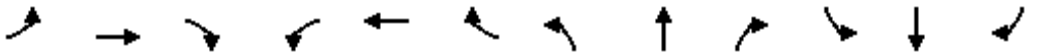
Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	747	-	-	1354	-
HCM Lane V/C Ratio	0.076	-	-	0.018	-
HCM Control Delay (s)	10.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	294	0	0	99	170	53	4	105	0	0	0
Future Volume (vph)	210	294	0	0	99	170	53	4	105	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7			3.7	3.7	4.1	4.1				
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.86				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1531	1606			1696	1442	1612	1451				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1531	1606			1696	1442	1612	1451				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	231	323	0	0	109	187	58	4	115	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	140	0	103	0	0	0	0
Lane Group Flow (vph)	208	346	0	0	109	47	58	16	0	0	0	0
Heavy Vehicles (%)	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type	Split	NA			NA	Perm	Perm	NA				
Protected Phases	6	6			3 5			4				
Permitted Phases						3 5	4					
Actuated Green, G (s)	32.7	32.7			19.0	19.0	8.1	8.1				
Effective Green, g (s)	32.7	32.7			19.0	19.0	8.1	8.1				
Actuated g/C Ratio	0.44	0.44			0.25	0.25	0.11	0.11				
Clearance Time (s)	3.7	3.7					4.1	4.1				
Vehicle Extension (s)	2.0	2.0					2.0	2.0				
Lane Grp Cap (vph)	667	700			429	365	174	156				
v/s Ratio Prot	0.14	c0.22			c0.06			0.01				
v/s Ratio Perm						0.03	c0.04					
v/c Ratio	0.31	0.49			0.25	0.13	0.33	0.11				
Uniform Delay, d1	13.8	15.2			22.3	21.6	31.0	30.2				
Progression Factor	0.74	0.71			0.53	0.00	1.00	1.00				
Incremental Delay, d2	1.2	2.2			0.1	0.1	0.4	0.1				
Delay (s)	11.4	12.9			11.9	0.1	31.4	30.3				
Level of Service	B	B			B	A	C	C				
Approach Delay (s)		12.3			4.4			30.6			0.0	
Approach LOS		B			A			C			A	

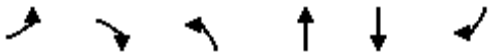
Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	307	30	33	119	0	0	0	0	197	0	253
Future Volume (vph)	0	307	30	33	119	0	0	0	0	197	0	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		3.0	4.9						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						1.00	0.88
Frpb, ped/bikes		1.00		1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00						1.00	1.00
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.95	1.00
Satd. Flow (prot)		1718		1656	1743						1656	2608
Flt Permitted		1.00		0.95	1.00						0.95	1.00
Satd. Flow (perm)		1718		1656	1743						1656	2608
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	357	35	38	138	0	0	0	0	229	0	294
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	388	0	38	138	0	0	0	0	0	229	294
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type		NA		Prot	NA					Split	NA	Prot
Protected Phases		2 8		1	6					7	7	7
Permitted Phases												
Actuated Green, G (s)		35.5		4.6	14.3						16.8	16.8
Effective Green, g (s)		35.5		4.6	14.3						16.8	16.8
Actuated g/C Ratio		0.47		0.06	0.19						0.22	0.22
Clearance Time (s)				3.0	4.9						4.9	4.9
Vehicle Extension (s)				2.5	2.0						2.0	2.0
Lane Grp Cap (vph)		813		101	332						370	584
v/s Ratio Prot		c0.23		0.02	c0.08						c0.14	0.11
v/s Ratio Perm												
v/c Ratio		0.48		0.38	0.42						0.62	0.50
Uniform Delay, d1		13.4		33.8	26.7						26.2	25.5
Progression Factor		0.21		0.92	1.48						1.00	1.00
Incremental Delay, d2		0.2		1.7	0.3						2.2	0.2
Delay (s)		3.0		32.9	39.8						28.4	25.7
Level of Service		A		C	D						C	C
Approach Delay (s)		3.0			38.3			0.0			26.9	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	245	154	101	48	37	168
Future Volume (vph)	245	154	101	48	37	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1		3.7	3.7	3.7
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.97	1.00	1.00
Satd. Flow (prot)	1583	1387		1612	1667	1396
Flt Permitted	0.95	1.00		0.97	1.00	1.00
Satd. Flow (perm)	1583	1387		1612	1667	1396
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	269	169	111	53	41	185
RTOR Reduction (vph)	0	77	0	0	0	167
Lane Group Flow (vph)	269	92	0	164	41	18
Confl. Bikes (#/hr)		1				1
Heavy Vehicles (%)	14%	14%	14%	14%	14%	14%
Turn Type	Prot	Perm	Split	NA	NA	Perm
Protected Phases	4 6		5	5	3	
Permitted Phases		4 6				3
Actuated Green, G (s)	40.8	40.8		11.9	7.1	7.1
Effective Green, g (s)	40.8	40.8		11.9	7.1	7.1
Actuated g/C Ratio	0.54	0.54		0.16	0.09	0.09
Clearance Time (s)				3.7	3.7	3.7
Vehicle Extension (s)				2.0	2.0	2.0
Lane Grp Cap (vph)	861	754		255	157	132
v/s Ratio Prot	c0.17			c0.10	c0.02	
v/s Ratio Perm		0.07				0.01
v/c Ratio	0.31	0.12		0.64	0.26	0.13
Uniform Delay, d1	9.4	8.4		29.6	31.5	31.1
Progression Factor	0.25	0.08		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0		4.1	0.3	0.2
Delay (s)	2.4	0.7		33.7	31.8	31.3
Level of Service	A	A		C	C	C
Approach Delay (s)	1.7			33.7	31.4	
Approach LOS	A			C	C	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	234	25	246	222	26	123
Future Volume (veh/h)	234	25	246	222	26	123
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	266	28	280	252	30	140
Adj No. of Lanes	1	1	2	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	507	431	515	1031	290	259
Arrive On Green	0.28	0.28	0.15	0.56	0.17	0.17
Sat Flow, veh/h	1827	1553	3375	1827	1740	1553
Grp Volume(v), veh/h	266	28	280	252	30	140
Grp Sat Flow(s),veh/h/ln	1827	1553	1688	1827	1740	1553
Q Serve(g_s), s	3.7	0.4	2.3	2.1	0.4	2.5
Cycle Q Clear(g_c), s	3.7	0.4	2.3	2.1	0.4	2.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	507	431	515	1031	290	259
V/C Ratio(X)	0.52	0.06	0.54	0.24	0.10	0.54
Avail Cap(c_a), veh/h	1964	1669	2154	3375	1578	1408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.1	7.9	11.7	3.3	10.5	11.4
Incr Delay (d2), s/veh	0.8	0.1	0.9	0.1	0.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.2	1.1	1.0	0.2	1.2
LnGrp Delay(d),s/veh	9.9	8.0	12.5	3.4	10.7	13.1
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	294			532	170	
Approach Delay, s/veh	9.7			8.2	12.7	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	8.5	12.3				20.8
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		27.0	19.0	32.0				55.0
Max Q Clear Time (g_c+I1), s		4.5	4.3	5.7				4.1
Green Ext Time (p_c), s		0.5	0.8	2.7				2.8

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	300	0	0	287	109	311	1	52	0	0	0
Future Volume (veh/h)	160	300	0	0	287	109	311	1	52	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1937	1937	1900	1863	1863			
Adj Flow Rate, veh/h	174	326	0	0	312	0	338	1	57			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	529	978	0	0	763	649	663	2	594			
Arrive On Green	0.16	1.00	0.00	0.00	0.39	0.00	0.38	0.38	0.38			
Sat Flow, veh/h	1774	1863	0	0	1937	1647	1769	5	1583			
Grp Volume(v), veh/h	174	326	0	0	312	0	339	0	57			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1937	1647	1774	0	1583			
Q Serve(g_s), s	4.4	0.0	0.0	0.0	9.3	0.0	11.8	0.0	1.9			
Cycle Q Clear(g_c), s	4.4	0.0	0.0	0.0	9.3	0.0	11.8	0.0	1.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	529	978	0	0	763	649	665	0	594			
V/C Ratio(X)	0.33	0.33	0.00	0.00	0.41	0.00	0.51	0.00	0.10			
Avail Cap(c_a), veh/h	629	978	0	0	763	649	665	0	594			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.94	0.94	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.0	0.0	0.0	0.0	17.5	0.0	19.3	0.0	16.2			
Incr Delay (d2), s/veh	0.3	0.9	0.0	0.0	1.6	0.0	2.8	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	0.2	0.0	0.0	5.3	0.0	6.3	0.0	2.1			
LnGrp Delay(d),s/veh	11.3	0.9	0.0	0.0	19.1	0.0	22.1	0.0	16.5			
LnGrp LOS	B	A			B		C		B			
Approach Vol, veh/h		500			312			396				
Approach Delay, s/veh		4.5			19.1			21.3				
Approach LOS		A			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		46.0		34.0	10.5	35.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		42.0		30.0	11.0	27.0		
Max Q Clear Time (g_c+I1), s		2.0		13.8	6.4	11.3		
Green Ext Time (p_c), s		4.2		2.1	0.2	3.4		

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	389	218	123	475	0	0	0	0	71	0	322
Future Volume (veh/h)	0	389	218	123	475	0	0	0	0	71	0	322
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1937	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	423	0	134	516	0				77	0	350
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1016	899	583	1211	0				443	0	395
Arrive On Green	0.00	0.55	0.00	0.11	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	1863	1647	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	423	0	134	516	0				77	0	350
Grp Sat Flow(s),veh/h/ln	0	1863	1647	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	10.7	0.0	2.5	0.0	0.0				2.7	0.0	17.0
Cycle Q Clear(g_c), s	0.0	10.7	0.0	2.5	0.0	0.0				2.7	0.0	17.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1016	899	583	1211	0				443	0	395
V/C Ratio(X)	0.00	0.42	0.00	0.23	0.43	0.00				0.17	0.00	0.89
Avail Cap(c_a), veh/h	0	1016	899	663	1211	0				510	0	455
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.97	0.00	0.90	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.7	0.0	6.8	0.0	0.0				23.5	0.0	28.9
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.2	1.0	0.0				0.2	0.0	16.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.0	1.2	0.3	0.0				1.3	0.0	9.2
LnGrp Delay(d),s/veh	0.0	11.9	0.0	7.0	1.0	0.0				23.7	0.0	45.8
LnGrp LOS		B		A	A					C		D
Approach Vol, veh/h		423			650						427	
Approach Delay, s/veh		11.9			2.2						41.8	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.4	47.7				56.0		24.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	8.0	37.0				49.0		23.0
Max Q Clear Time (g_c+I1), s	4.5	12.7				2.0		19.0
Green Ext Time (p_c), s	0.1	6.3				7.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	261	0	0	170	131	118	1	129	0	0	0
Future Vol, veh/h	40	261	0	0	170	131	118	1	129	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	4	-	-	6	-	-	6	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	44	290	0	0	189	146	131	1	143	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	334	0	-	-	-	0	641	713	290
Stage 1	-	-	-	-	-	-	379	379	-
Stage 2	-	-	-	-	-	-	262	334	-
Critical Hdwy	4.14	-	-	-	-	-	8.34	7.74	6.84
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	6.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.34	6.74	-
Follow-up Hdwy	2.236	-	-	-	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	1214	-	0	0	-	-	311	280	709
Stage 1	-	-	0	0	-	-	563	539	-
Stage 2	-	-	0	0	-	-	677	572	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1214	-	-	-	-	-	301	268	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	268	-
Stage 1	-	-	-	-	-	-	539	516	-
Stage 2	-	-	-	-	-	-	677	572	-

Approach	EB	WB	NB
HCM Control Delay, s	1.1	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	301	709	1214	-	-	-
HCM Lane V/C Ratio	0.439	0.202	0.037	-	-	-
HCM Control Delay (s)	26	11.4	8.1	0	-	-
HCM Lane LOS	D	B	A	A	-	-
HCM 95th %tile Q(veh)	2.1	0.8	0.1	-	-	-

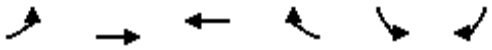
Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	136	137	90	198	0	0	0	0	165	1	32
Future Vol, veh/h	0	136	137	90	198	0	0	0	0	165	1	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	153	154	101	222	0	0	0	0	185	1	36

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	307	0	0				655	732	222
Stage 1	-	-	-	-	-	-				425	425	-
Stage 2	-	-	-	-	-	-				230	307	-
Critical Hdwy	-	-	-	4.14	-	-				7.64	7.74	6.84
Critical Hdwy Stg 1	-	-	-	-	-	-				6.64	6.74	-
Critical Hdwy Stg 2	-	-	-	-	-	-				6.64	6.74	-
Follow-up Hdwy	-	-	-	2.236	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	1242	-	0				344	271	783
Stage 1	0	-	-	-	-	0				569	506	-
Stage 2	0	-	-	-	-	0				744	593	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1242	-	-				312	0	783
Mov Cap-2 Maneuver	-	-	-	-	-	-				312	0	-
Stage 1	-	-	-	-	-	-				516	0	-
Stage 2	-	-	-	-	-	-				744	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	32.4
HCM LOS			D

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1242	-	346
HCM Lane V/C Ratio	-	-	0.081	-	0.643
HCM Control Delay (s)	-	-	8.2	0	32.4
HCM Lane LOS	-	-	A	A	D
HCM 95th %tile Q(veh)	-	-	0.3	-	4.2



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	78	279	350	22	58	118
Future Volume (vph)	78	279	350	22	58	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	4.9		4.9	4.9
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1845	3474		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1845	3474		1752	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	83	297	372	23	62	126
RTOR Reduction (vph)	0	0	6	0	0	112
Lane Group Flow (vph)	83	297	389	0	62	14
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6 7		8	
Permitted Phases						8
Actuated Green, G (s)	17.5	27.3	31.1		8.2	8.2
Effective Green, g (s)	17.5	27.3	31.1		8.2	8.2
Actuated g/C Ratio	0.23	0.36	0.41		0.11	0.11
Clearance Time (s)	3.5	5.3			4.9	4.9
Vehicle Extension (s)	2.0	2.0			1.0	1.0
Lane Grp Cap (vph)	408	671	1440		191	171
v/s Ratio Prot	0.05	c0.16	c0.11		c0.04	
v/s Ratio Perm						0.01
v/c Ratio	0.20	0.44	0.27		0.32	0.08
Uniform Delay, d1	23.1	18.1	14.5		30.8	30.0
Progression Factor	1.00	1.00	0.07		1.00	1.00
Incremental Delay, d2	1.1	2.1	0.0		0.4	0.1
Delay (s)	24.3	20.2	1.0		31.2	30.1
Level of Service	C	C	A		C	C
Approach Delay (s)		21.1	1.0		30.5	
Approach LOS		C	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	31.2%	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												
Traffic Volume (veh/h)	206	111	24	3	89	62	66	9	2	107	5	174
Future Volume (veh/h)	206	111	24	3	89	62	66	9	2	107	5	174
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	215	116	25	3	93	65	69	9	2	111	5	181
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	513	680	578	419	264	184	366	305	68	373	17	522
Arrive On Green	0.11	0.36	0.36	0.00	0.26	0.26	0.21	0.21	0.21	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	1774	1022	714	1774	1477	328	1701	77	1583
Grp Volume(v), veh/h	215	116	25	3	0	158	69	0	11	116	0	181
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1737	1774	0	1805	1778	0	1583
Q Serve(g_s), s	6.5	3.3	0.8	0.1	0.0	5.8	2.5	0.0	0.4	4.2	0.0	6.7
Cycle Q Clear(g_c), s	6.5	3.3	0.8	0.1	0.0	5.8	2.5	0.0	0.4	4.2	0.0	6.7
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.18	0.96		1.00
Lane Grp Cap(c), veh/h	513	680	578	419	0	448	366	0	372	390	0	522
V/C Ratio(X)	0.42	0.17	0.04	0.01	0.00	0.35	0.19	0.00	0.03	0.30	0.00	0.35
Avail Cap(c_a), veh/h	569	680	578	505	0	448	366	0	372	390	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	16.7	15.9	21.2	0.0	23.5	25.4	0.0	24.6	25.3	0.0	19.7
Incr Delay (d2), s/veh	0.5	0.5	0.1	0.0	0.0	2.2	1.1	0.0	0.1	1.9	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.8	0.4	0.0	0.0	3.0	1.3	0.0	0.2	2.3	0.0	3.2
LnGrp Delay(d),s/veh	17.2	17.2	16.0	21.2	0.0	25.7	26.5	0.0	24.7	27.2	0.0	21.5
LnGrp LOS	B	B	B	C		C	C		C	C		C
Approach Vol, veh/h		356			161			80			297	
Approach Delay, s/veh		17.1			25.6			26.3			23.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.5	24.0		20.0	4.3	32.3		21.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	11.0	20.0		16.0	4.0	27.0		17.0
Max Q Clear Time (g_c+I1), s	8.5	7.8		4.5	2.1	5.3		8.7
Green Ext Time (p_c), s	0.1	0.6		0.1	0.0	0.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

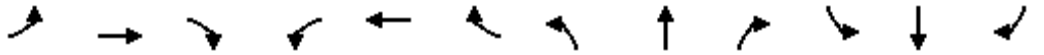
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	332	312	17	9	68
Future Vol, veh/h	51	332	312	17	9	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	346	325	18	9	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	343	0	-	0	786	334
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1216	-	-	-	361	708
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1216	-	-	-	345	708
Mov Cap-2 Maneuver	-	-	-	-	345	-
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1216	-	-	-	345	708
HCM Lane V/C Ratio	0.044	-	-	-	0.027	0.1
HCM Control Delay (s)	8.1	-	-	-	15.7	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	160	0	0	325	55	226	1	223	0	0	0
Future Volume (veh/h)	129	160	0	0	325	55	226	1	223	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	137	170	0	0	346	59	240	1	237			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	170	1326	0	0	1054	896	332	1	298			
Arrive On Green	0.19	1.00	0.00	0.00	0.57	0.57	0.19	0.19	0.19			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1767	7	1583			
Grp Volume(v), veh/h	137	170	0	0	346	59	241	0	237			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	5.9	0.0	0.0	0.0	7.9	1.3	10.2	0.0	11.4			
Cycle Q Clear(g_c), s	5.9	0.0	0.0	0.0	7.9	1.3	10.2	0.0	11.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	170	1326	0	0	1054	896	334	0	298			
V/C Ratio(X)	0.81	0.13	0.00	0.00	0.33	0.07	0.72	0.00	0.80			
Avail Cap(c_a), veh/h	310	1326	0	0	1054	896	510	0	455			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.6	0.0	0.0	0.0	9.3	7.8	30.5	0.0	31.0			
Incr Delay (d2), s/veh	8.4	0.2	0.0	0.0	0.8	0.1	3.0	0.0	5.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.3	0.1	0.0	0.0	4.3	0.6	5.3	0.0	5.5			
LnGrp Delay(d),s/veh	40.0	0.2	0.0	0.0	10.1	8.0	33.5	0.0	36.5			
LnGrp LOS	D	A			B	A	C		D			
Approach Vol, veh/h		307			405			478				
Approach Delay, s/veh		18.0			9.8			35.0				
Approach LOS		B			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.7	49.3		19.0		61.0		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	14.0	31.0		23.0		49.0		
Max Q Clear Time (g_c+I1), s	7.9	9.9		13.4		2.0		
Green Ext Time (p_c), s	0.2	2.0		1.6		0.9		

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	235	228	165	386	0	162	0	54	0	0	0
Future Volume (veh/h)	1	235	228	165	386	0	162	0	54	0	0	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	1	258	251	181	424	0	178	0	59	0	0	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1112	945	220	1342	0	228	0	204	0	2	2
Arrive On Green	0.00	0.60	0.60	0.25	1.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	1774	0	1583	0	1863	1583
Grp Volume(v), veh/h	1	258	251	181	424	0	178	0	59	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1774	0	1583	0	1863	1583
Q Serve(g_s), s	0.0	5.2	6.1	7.7	0.0	0.0	7.8	0.0	2.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.2	6.1	7.7	0.0	0.0	7.8	0.0	2.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1112	945	220	1342	0	228	0	204	0	2	2
V/C Ratio(X)	0.45	0.23	0.27	0.82	0.32	0.00	0.78	0.00	0.29	0.00	0.00	0.00
Avail Cap(c_a), veh/h	89	1112	945	355	1342	0	355	0	317	0	373	317
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	39.9	7.5	7.7	29.2	0.0	0.0	33.8	0.0	31.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	102.0	0.5	0.7	7.5	0.6	0.0	5.8	0.0	0.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.8	2.8	4.2	0.2	0.0	4.2	0.0	1.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	141.9	8.0	8.4	36.7	0.6	0.0	39.5	0.0	32.3	0.0	0.0	0.0
LnGrp LOS	F	A	A	D	A		D		C			
Approach Vol, veh/h		510			605			237			0	
Approach Delay, s/veh		8.5			11.4			37.7			0.0	
Approach LOS		A			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.1	61.6		14.3	13.9	51.8		0.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	16.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.0	2.0		9.8	9.7	8.1		0.0
Green Ext Time (p_c), s	0.0	2.5		0.6	0.2	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	281	29	205	343	36	183
Future Vol, veh/h	281	29	205	343	36	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	299	31	218	365	38	195

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	330	0	1116	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	801	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1229	-	230	725
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	442	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1229	-	189	725
Mov Cap-2 Maneuver	-	-	-	-	189	-
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	364	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	189	725	-	-	1229	-
HCM Lane V/C Ratio	0.203	0.269	-	-	0.177	-
HCM Control Delay (s)	28.8	11.8	-	-	8.6	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.1	-	-	0.6	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	275	7	50	324	5	5	0	32	3	0	2
Future Vol, veh/h	1	275	7	50	324	5	5	0	32	3	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	260	-	-	100	-	-	-	-	110	-	-	110
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	289	7	53	341	5	5	0	34	3	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	346	0	0	296	0	0	746	747	293	762	748	344
Stage 1	-	-	-	-	-	-	295	295	-	450	450	-
Stage 2	-	-	-	-	-	-	451	452	-	312	298	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1213	-	-	1265	-	-	330	341	746	322	341	699
Stage 1	-	-	-	-	-	-	713	669	-	589	572	-
Stage 2	-	-	-	-	-	-	588	570	-	699	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1213	-	-	1265	-	-	318	326	746	298	326	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	326	-	298	326	-
Stage 1	-	-	-	-	-	-	712	668	-	588	548	-
Stage 2	-	-	-	-	-	-	562	546	-	667	666	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	11	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	318	746	1213	-	-	1265	-	-	298	699
HCM Lane V/C Ratio	0.017	0.045	0.001	-	-	0.042	-	-	0.011	0.003
HCM Control Delay (s)	16.5	10.1	8	-	-	8	-	-	17.2	10.2
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0.1	-	-	0	0

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	139	4	56	113	63	2	12	93	73	24	13
Future Vol, veh/h	11	139	4	56	113	63	2	12	93	73	24	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	160	5	64	130	72	2	14	107	84	28	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	9.6	10.3	8.8	10
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	7%	24%	75%	0%
Vol Thru, %	11%	90%	49%	25%	0%
Vol Right, %	87%	3%	27%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	154	232	97	13
LT Vol	2	11	56	73	0
Through Vol	12	139	113	24	0
RT Vol	93	4	63	0	13
Lane Flow Rate	123	177	267	111	15
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.163	0.241	0.348	0.189	0.021
Departure Headway (Hd)	4.766	4.91	4.694	6.091	5.003
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	743	724	760	584	708
Service Time	2.855	2.985	2.76	3.878	2.789
HCM Lane V/C Ratio	0.166	0.244	0.351	0.19	0.021
HCM Control Delay	8.8	9.6	10.3	10.3	7.9
HCM Lane LOS	A	A	B	B	A
HCM 95th-tile Q	0.6	0.9	1.6	0.7	0.1

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	102	242	268	47	83	176
Future Vol, veh/h	102	242	268	47	83	176
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	6	-	6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	106	252	279	49	86	183

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	328	0	-	0	768	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	464	-
Critical Hdwy	4.13	-	-	-	7.63	6.83
Critical Hdwy Stg 1	-	-	-	-	6.63	-
Critical Hdwy Stg 2	-	-	-	-	6.63	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1226	-	-	-	285	697
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1226	-	-	-	256	697
Mov Cap-2 Maneuver	-	-	-	-	256	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	540	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1226	-	-	-	256	697
HCM Lane V/C Ratio	0.087	-	-	-	0.338	0.263
HCM Control Delay (s)	8.2	0	-	-	26.1	12
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4	1.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	61	10	8	11	8	29	4	230	15	26	253	50
Future Vol, veh/h	61	10	8	11	8	29	4	230	15	26	253	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	11	8	12	8	31	4	242	16	27	266	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	625	613	293	614	631	250	319	0	0	258	0	0
Stage 1	347	347	-	258	258	-	-	-	-	-	-	-
Stage 2	278	266	-	356	373	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	397	408	746	404	398	789	1241	-	-	1307	-	-
Stage 1	669	635	-	747	694	-	-	-	-	-	-	-
Stage 2	728	689	-	661	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	368	398	746	384	388	789	1241	-	-	1307	-	-
Mov Cap-2 Maneuver	368	398	-	384	388	-	-	-	-	-	-	-
Stage 1	667	622	-	745	692	-	-	-	-	-	-	-
Stage 2	689	687	-	629	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.6	12.1	0.1	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1241	-	-	392	558	1307	-	-
HCM Lane V/C Ratio	0.003	-	-	0.212	0.091	0.021	-	-
HCM Control Delay (s)	7.9	-	-	16.6	12.1	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	15	0	35	3	0	5	14	270	0	0	265	17
Future Vol, veh/h	15	0	35	3	0	5	14	270	0	0	265	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	37	3	0	5	15	284	0	0	279	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	605	602	288	621	611	284	297	0	0	284	0	0
Stage 1	288	288	-	314	314	-	-	-	-	-	-	-
Stage 2	317	314	-	307	297	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	410	414	751	400	409	755	1264	-	-	1278	-	-
Stage 1	720	674	-	697	656	-	-	-	-	-	-	-
Stage 2	694	656	-	703	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	403	408	751	376	403	755	1264	-	-	1278	-	-
Mov Cap-2 Maneuver	403	408	-	376	403	-	-	-	-	-	-	-
Stage 1	710	674	-	687	647	-	-	-	-	-	-	-
Stage 2	680	647	-	669	668	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	11.7	0.4	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1264	-	-	596	548	1278	-	-
HCM Lane V/C Ratio	0.012	-	-	0.088	0.015	-	-	-
HCM Control Delay (s)	7.9	0	-	11.6	11.7	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	4	1	9	1	0	2	8	266	2	5	298	6
Future Vol, veh/h	4	1	9	1	0	2	8	266	2	5	298	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	9	1	0	2	8	280	2	5	314	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	625	625	317	629	627	281	320	0	0	282	0	0
Stage 1	327	327	-	297	297	-	-	-	-	-	-	-
Stage 2	298	298	-	332	330	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	397	401	724	395	400	758	1240	-	-	1280	-	-
Stage 1	686	648	-	712	668	-	-	-	-	-	-	-
Stage 2	711	667	-	681	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	392	396	724	385	395	758	1240	-	-	1280	-	-
Mov Cap-2 Maneuver	392	396	-	385	395	-	-	-	-	-	-	-
Stage 1	681	645	-	706	663	-	-	-	-	-	-	-
Stage 2	703	662	-	668	643	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	11.3	0.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1240	-	-	556	573	1280	-	-
HCM Lane V/C Ratio	0.007	-	-	0.027	0.006	0.004	-	-
HCM Control Delay (s)	7.9	0	-	11.7	11.3	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	63	60	20	13	49
Future Vol, veh/h	42	63	60	20	13	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	70	67	22	14	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	197	41	68	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	792	1030	1533	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	757	1030	1533	-	-	-
Mov Cap-2 Maneuver	757	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	872	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1533	-	900	-	-
HCM Lane V/C Ratio	0.043	-	0.13	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	4	231	82	12	145	3	75	0	11	0	0	0
Future Vol, veh/h	4	231	82	12	145	3	75	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	251	89	13	158	3	82	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	161	0	0	340	0	0	490	491	296	496	534	160
Stage 1	-	-	-	-	-	-	304	304	-	186	186	-
Stage 2	-	-	-	-	-	-	186	187	-	310	348	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1418	-	-	1219	-	-	489	478	743	484	452	885
Stage 1	-	-	-	-	-	-	705	663	-	816	746	-
Stage 2	-	-	-	-	-	-	816	745	-	700	634	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1418	-	-	1219	-	-	483	470	743	470	445	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	483	470	-	470	445	-
Stage 1	-	-	-	-	-	-	702	660	-	813	737	-
Stage 2	-	-	-	-	-	-	806	736	-	686	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	13.5	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	483	743	1418	-	-	1219	-	-	-
HCM Lane V/C Ratio	0.169	0.016	0.003	-	-	0.011	-	-	-
HCM Control Delay (s)	14	9.9	7.5	0	-	8	0	-	0
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	680	8	70	350	92	7	1	50	80	2	3
Future Volume (veh/h)	5	680	8	70	350	92	7	1	50	80	2	3
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	5	708	8	73	365	96	7	1	52	83	2	3
Adj No. of Lanes	1	2	0	1	1	0	0	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	722	2526	29	646	1058	278	67	8	103	222	140	119
Arrive On Green	0.01	0.70	0.70	0.04	0.74	0.74	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1774	3585	40	1774	1423	374	110	101	1373	1346	1863	1583
Grp Volume(v), veh/h	5	349	367	73	0	461	60	0	0	83	2	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1856	1774	0	1797	1584	0	0	1346	1863	1583
Q Serve(g_s), s	0.1	4.9	4.9	0.7	0.0	6.0	0.4	0.0	0.0	0.9	0.1	0.1
Cycle Q Clear(g_c), s	0.1	4.9	4.9	0.7	0.0	6.0	2.4	0.0	0.0	3.3	0.1	0.1
Prop In Lane	1.00		0.02	1.00		0.21	0.12		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	722	1247	1308	646	0	1336	178	0	0	222	140	119
V/C Ratio(X)	0.01	0.28	0.28	0.11	0.00	0.35	0.34	0.00	0.00	0.37	0.01	0.03
Avail Cap(c_a), veh/h	817	1247	1308	673	0	1336	428	0	0	437	438	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.0	3.7	3.7	2.3	0.0	3.0	30.3	0.0	0.0	30.6	29.2	29.2
Incr Delay (d2), s/veh	0.0	0.6	0.5	0.1	0.0	0.7	1.1	0.0	0.0	1.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	2.6	0.3	0.0	3.2	1.1	0.0	0.0	1.6	0.0	0.1
LnGrp Delay(d),s/veh	3.0	4.3	4.2	2.4	0.0	3.7	31.4	0.0	0.0	31.6	29.2	29.3
LnGrp LOS	A	A	A	A		A	C			C	C	C
Approach Vol, veh/h		721			534			60			88	
Approach Delay, s/veh		4.2			3.5			31.4			31.5	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	52.0		9.1	4.4	54.6		9.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	6.9		4.4	2.1	8.0		5.3
Green Ext Time (p_c), s	0.0	4.6		0.2	0.0	3.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	23	7	72	46	14	7	19	46	15	24	3
Future Vol, veh/h	7	23	7	72	46	14	7	19	46	15	24	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	24	7	75	48	15	7	20	48	16	25	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.1	7.4	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	19%	55%	36%
Vol Thru, %	26%	62%	35%	57%
Vol Right, %	64%	19%	11%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	37	132	42
LT Vol	7	7	72	15
Through Vol	19	23	46	24
RT Vol	46	7	14	3
Lane Flow Rate	75	39	138	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.084	0.045	0.161	0.054
Departure Headway (Hd)	4.017	4.172	4.216	4.437
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	897	844	842	812
Service Time	2.018	2.27	2.287	2.44
HCM Lane V/C Ratio	0.084	0.046	0.164	0.054
HCM Control Delay	7.4	7.5	8.1	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.6	0.2

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	215	57	13	171	26	46	33	12	41	41	12
Future Vol, veh/h	8	215	57	13	171	26	46	33	12	41	41	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	10	262	70	16	209	32	56	40	15	50	50	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	241	0	0	332	0	0	607	590	297	602	609	225
Stage 1	-	-	-	-	-	-	317	317	-	257	257	-
Stage 2	-	-	-	-	-	-	290	273	-	345	352	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1320	-	-	1222	-	-	407	419	740	410	408	812
Stage 1	-	-	-	-	-	-	692	652	-	745	693	-
Stage 2	-	-	-	-	-	-	716	682	-	668	630	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1320	-	-	1222	-	-	355	409	740	365	398	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	355	409	-	365	398	-
Stage 1	-	-	-	-	-	-	686	646	-	738	683	-
Stage 2	-	-	-	-	-	-	642	672	-	608	624	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	16.8	16.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	376	740	1320	-	-	1222	-	-	381	812
HCM Lane V/C Ratio	0.256	0.02	0.007	-	-	0.013	-	-	0.262	0.018
HCM Control Delay (s)	17.8	10	7.7	0	-	8	0	-	17.8	9.5
HCM Lane LOS	C	B	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	1	0.1	0	-	-	0	-	-	1	0.1

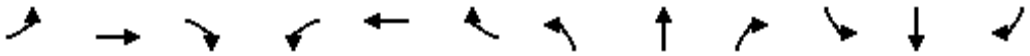
Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	313	11	42	280	5	35
Future Vol, veh/h	313	11	42	280	5	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	333	12	45	298	5	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	345	0	727	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	388	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1197	-	387	696
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1197	-	370	696
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	648	-

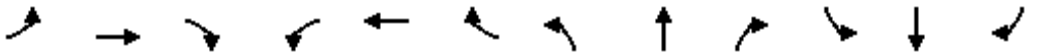
Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	627	-	-	1197	-
HCM Lane V/C Ratio	0.068	-	-	0.037	-
HCM Control Delay (s)	11.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-



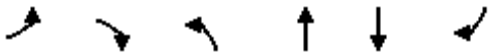
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	381	261	0	0	160	360	70	6	77	0	0	0
Future Volume (vph)	381	261	0	0	160	360	70	6	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7			3.7	3.7	4.1	4.1				
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.86				
Flt Protected	0.95	0.99			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1618	1686			1792	1524	1703	1542				
Flt Permitted	0.95	0.99			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1618	1686			1792	1524	1703	1542				
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)	405	278	0	0	170	383	74	6	82	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	234	0	74	0	0	0	0
Lane Group Flow (vph)	336	347	0	0	170	149	74	14	0	0	0	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	Split	NA			NA	Perm	Perm	NA				
Protected Phases	6	6			3 5			4				
Permitted Phases						3 5	4					
Actuated Green, G (s)	37.8	37.8			37.0	37.0	8.7	8.7				
Effective Green, g (s)	37.8	37.8			37.0	37.0	8.7	8.7				
Actuated g/C Ratio	0.40	0.40			0.39	0.39	0.09	0.09				
Clearance Time (s)	3.7	3.7					4.1	4.1				
Vehicle Extension (s)	2.0	2.0					2.0	2.0				
Lane Grp Cap (vph)	643	670			697	593	155	141				
v/s Ratio Prot	c0.21	0.21			0.09			0.01				
v/s Ratio Perm						c0.10	c0.04					
v/c Ratio	0.52	0.52			0.24	0.25	0.48	0.10				
Uniform Delay, d1	21.7	21.7			19.6	19.6	41.0	39.5				
Progression Factor	1.00	1.00			0.52	0.18	1.00	1.00				
Incremental Delay, d2	3.0	2.8			0.0	0.1	0.8	0.1				
Delay (s)	24.8	24.5			10.2	3.7	41.8	39.7				
Level of Service	C	C			B	A	D	D				
Approach Delay (s)		24.6			5.7			40.7			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	54.9%	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												
Traffic Volume (vph)	0	467	48	90	140	0	0	0	0	175	3	359
Future Volume (vph)	0	467	48	90	140	0	0	0	0	175	3	359
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		4.0	4.9						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						1.00	0.88
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.95	1.00
Satd. Flow (prot)		1822		1752	1845						1758	2760
Flt Permitted		1.00		0.95	1.00						0.95	1.00
Satd. Flow (perm)		1822		1752	1845						1758	2760
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	481	49	93	144	0	0	0	0	180	3	370
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	306
Lane Group Flow (vph)	0	526	0	93	144	0	0	0	0	0	183	64
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 8		1	6					7	7	
Permitted Phases												7
Actuated Green, G (s)		44.4		7.6	21.9						14.9	14.9
Effective Green, g (s)		44.4		7.6	21.9						14.9	14.9
Actuated g/C Ratio		0.52		0.09	0.25						0.17	0.17
Clearance Time (s)				4.0	4.9						4.9	4.9
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		940		154	469						304	478
v/s Ratio Prot		c0.29		c0.05	0.08						c0.10	
v/s Ratio Perm												0.02
v/c Ratio		0.56		0.60	0.31						0.60	0.13
Uniform Delay, d1		14.2		37.8	25.9						32.8	30.1
Progression Factor		0.41		1.00	1.00						1.00	1.00
Incremental Delay, d2		0.5		6.5	0.4						3.3	0.1
Delay (s)		6.3		44.3	26.3						36.2	30.2
Level of Service		A		D	C						D	C
Approach Delay (s)		6.3			33.3			0.0			32.2	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



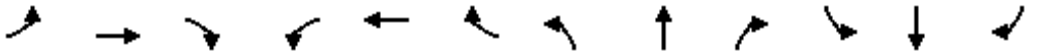
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	185	153	230	44	32	290
Future Volume (vph)	185	153	230	44	32	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.7
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.96	1.00	1.00
Satd. Flow (prot)	1687	1509		1704	1776	1509
Flt Permitted	0.95	1.00		0.96	1.00	1.00
Satd. Flow (perm)	1687	1509		1704	1776	1509
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	193	159	240	46	33	302
RTOR Reduction (vph)	0	75	0	0	0	267
Lane Group Flow (vph)	193	84	0	286	33	35
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Perm	Split	NA	NA	Perm
Protected Phases	6 4		5	5	3	
Permitted Phases		6 4				3
Actuated Green, G (s)	50.2	50.2		22.3	11.0	11.0
Effective Green, g (s)	50.2	50.2		22.3	11.0	11.0
Actuated g/C Ratio	0.53	0.53		0.23	0.12	0.12
Clearance Time (s)				3.7	3.7	3.7
Vehicle Extension (s)				2.0	2.0	2.0
Lane Grp Cap (vph)	891	797		399	205	174
v/s Ratio Prot	c0.11			c0.17	0.02	
v/s Ratio Perm		0.06				c0.02
v/c Ratio	0.22	0.11		0.72	0.16	0.20
Uniform Delay, d1	11.9	11.2		33.4	37.8	38.0
Progression Factor	0.16	0.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0		5.1	0.1	0.2
Delay (s)	1.9	0.0		38.5	38.0	38.2
Level of Service	A	A		D	D	D
Approach Delay (s)	1.1			38.5	38.2	
Approach LOS	A			D	D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	297	29	340	267	42	360
Future Volume (veh/h)	297	29	340	267	42	360
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	323	32	370	290	46	391
Adj No. of Lanes	1	1	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	451	383	573	938	545	486
Arrive On Green	0.24	0.24	0.17	0.50	0.31	0.31
Sat Flow, veh/h	1863	1583	3442	1863	1774	1583
Grp Volume(v), veh/h	323	32	370	290	46	391
Grp Sat Flow(s),veh/h/ln	1863	1583	1721	1863	1774	1583
Q Serve(g_s), s	6.7	0.7	4.2	3.9	0.8	9.6
Cycle Q Clear(g_c), s	6.7	0.7	4.2	3.9	0.8	9.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	451	383	573	938	545	486
V/C Ratio(X)	0.72	0.08	0.65	0.31	0.08	0.80
Avail Cap(c_a), veh/h	1147	975	1304	2029	1092	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	12.4	16.4	6.2	10.4	13.5
Incr Delay (d2), s/veh	2.1	0.1	1.2	0.2	0.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.3	2.1	2.0	0.4	4.6
LnGrp Delay(d),s/veh	16.8	12.5	17.7	6.4	10.5	16.6
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	355			660	437	
Approach Delay, s/veh	16.4			12.7	16.0	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		17.0	11.0	14.2				25.3
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		26.0	16.0	26.0				46.0
Max Q Clear Time (g_c+I1), s		11.6	6.2	8.7				5.9
Green Ext Time (p_c), s		1.4	0.9	1.5				1.5

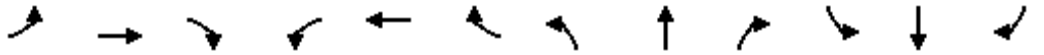
Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	238	0	0	157	63	187	0	79	0	0	0
Future Volume (veh/h)	391	238	0	0	157	63	187	0	79	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1937	1937	1900	1863	1863			
Adj Flow Rate, veh/h	444	270	0	0	178	0	212	0	90			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	957	1392	0	0	1067	907	271	0	242			
Arrive On Green	0.24	1.00	0.00	0.00	0.55	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	1774	1863	0	0	1937	1647	1774	0	1583			
Grp Volume(v), veh/h	444	270	0	0	178	0	212	0	90			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1937	1647	1774	0	1583			
Q Serve(g_s), s	8.5	0.0	0.0	0.0	3.6	0.0	9.2	0.0	4.1			
Cycle Q Clear(g_c), s	8.5	0.0	0.0	0.0	3.6	0.0	9.2	0.0	4.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	957	1392	0	0	1067	907	271	0	242			
V/C Ratio(X)	0.46	0.19	0.00	0.00	0.17	0.00	0.78	0.00	0.37			
Avail Cap(c_a), veh/h	1274	1392	0	0	1067	907	466	0	416			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	4.0	0.0	0.0	0.0	8.9	0.0	32.6	0.0	30.4			
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.0	0.3	0.0	4.9	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.8	0.1	0.0	0.0	2.0	0.0	4.8	0.0	3.7			
LnGrp Delay(d),s/veh	4.4	0.3	0.0	0.0	9.2	0.0	37.5	0.0	31.4			
LnGrp LOS	A	A			A		D		C			
Approach Vol, veh/h		714			178			302				
Approach Delay, s/veh		2.8			9.2			35.7				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.8		16.2	15.7	48.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		51.0		21.0	26.0	21.0		
Max Q Clear Time (g_c+I1), s		2.0		11.2	10.5	5.6		
Green Ext Time (p_c), s		1.7		1.0	1.3	0.7		

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	494	316	59	285	0	0	0	0	135	2	227
Future Volume (veh/h)	0	494	316	59	285	0	0	0	0	135	2	227
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1937	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	515	0	61	297	0				141	2	236
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1177	1040	589	1339	0				321	2	285
Arrive On Green	0.00	0.63	0.00	0.01	0.24	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1863	1647	1774	1863	0				1774	13	1572
Grp Volume(v), veh/h	0	515	0	61	297	0				141	0	238
Grp Sat Flow(s),veh/h/ln	0	1863	1647	1774	1863	0				1774	0	1585
Q Serve(g_s), s	0.0	11.3	0.0	0.9	10.3	0.0				5.7	0.0	11.6
Cycle Q Clear(g_c), s	0.0	11.3	0.0	0.9	10.3	0.0				5.7	0.0	11.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.99
Lane Grp Cap(c), veh/h	0	1177	1040	589	1339	0				321	0	287
V/C Ratio(X)	0.00	0.44	0.00	0.10	0.22	0.00				0.44	0.00	0.83
Avail Cap(c_a), veh/h	0	1177	1040	634	1339	0				421	0	377
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.97	0.00	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	0.0	5.2	12.5	0.0				29.1	0.0	31.6
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.1	0.4	0.0				0.9	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	0.0	0.4	5.4	0.0				2.9	0.0	6.0
LnGrp Delay(d),s/veh	0.0	8.6	0.0	5.3	12.9	0.0				30.1	0.0	42.8
LnGrp LOS		A		A	B					C		D
Approach Vol, veh/h		515			358						379	
Approach Delay, s/veh		8.6			11.6						38.1	
Approach LOS		A			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.0	54.5				61.5		18.5
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	5.0	44.0				53.0		19.0
Max Q Clear Time (g_c+I1), s	2.9	13.3				12.3		13.6
Green Ext Time (p_c), s	0.0	3.5				1.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	239	0	0	251	193	208	1	105	0	0	0
Future Vol, veh/h	50	239	0	0	251	193	208	1	105	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	4	-	-	6	-	-	6	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	249	0	0	261	201	217	1	109	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	462	0	-	-	-	0	715	815	249
Stage 1	-	-	-	-	-	-	353	353	-
Stage 2	-	-	-	-	-	-	362	462	-
Critical Hdwy	4.12	-	-	-	-	-	7.62	7.72	6.82
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	6.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	6.72	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1099	-	0	0	-	-	313	238	758
Stage 1	-	-	0	0	-	-	632	561	-
Stage 2	-	-	0	0	-	-	624	484	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1099	-	-	-	-	-	296	0	758
Mov Cap-2 Maneuver	-	-	-	-	-	-	296	0	-
Stage 1	-	-	-	-	-	-	597	0	-
Stage 2	-	-	-	-	-	-	624	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.5	0	33.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	296	758	1099	-	-	-
HCM Lane V/C Ratio	0.736	0.144	0.047	-	-	-
HCM Control Delay (s)	44.6	10.5	8.4	0	-	-
HCM Lane LOS	E	B	A	A	-	-
HCM 95th %tile Q(veh)	5.4	0.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	33.9

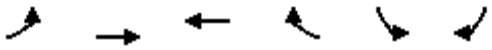
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	136	268	174	285	0	0	0	0	153	3	45
Future Vol, veh/h	0	136	268	174	285	0	0	0	0	153	3	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	6	-	-	6	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	149	295	191	313	0	0	0	0	168	3	49

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	444	0	0	992	1139	313
Stage 1	-	-	-	-	-	-	695	695	-
Stage 2	-	-	-	-	-	-	297	444	-
Critical Hdwy	-	-	-	4.12	-	-	7.62	7.72	6.82
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	6.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	6.72	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1116	-	0	196	138	690
Stage 1	0	-	-	-	-	0	393	352	-
Stage 2	0	-	-	-	-	0	683	496	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1116	-	-	~ 155	0	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 155	0	-
Stage 1	-	-	-	-	-	-	393	0	-
Stage 2	-	-	-	-	-	-	542	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.4	171.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1116	-	188
HCM Lane V/C Ratio	-	-	0.171	-	1.175
HCM Control Delay (s)	-	-	8.9	0	171.5
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	11.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	173	484	464	35	31	143
Future Volume (vph)	173	484	464	35	31	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.9		4.9	4.9
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3502		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3502		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	182	509	488	37	33	151
RTOR Reduction (vph)	0	0	7	0	0	128
Lane Group Flow (vph)	182	509	518	0	33	23
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6 7		8	
Permitted Phases						8
Actuated Green, G (s)	17.5	31.4	36.8		13.0	13.0
Effective Green, g (s)	17.5	31.4	36.8		13.0	13.0
Actuated g/C Ratio	0.20	0.37	0.43		0.15	0.15
Clearance Time (s)	4.0	5.3			4.9	4.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	360	680	1498		267	239
v/s Ratio Prot	0.10	c0.27	c0.15		c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.51	0.75	0.35		0.12	0.10
Uniform Delay, d1	30.4	23.9	16.5		31.6	31.4
Progression Factor	1.00	1.00	0.65		1.00	1.00
Incremental Delay, d2	5.0	7.4	0.1		0.2	0.2
Delay (s)	35.4	31.2	10.8		31.8	31.6
Level of Service	D	C	B		C	C
Approach Delay (s)		32.3	10.8		31.6	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	40.0%	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												
Traffic Volume (veh/h)	230	105	265	60	175	120	175	65	10	80	170	260
Future Volume (veh/h)	230	105	265	60	175	120	175	65	10	80	170	260
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	250	114	288	65	190	130	190	71	11	87	185	283
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	644	547	418	272	186	356	316	49	125	266	530
Arrive On Green	0.12	0.35	0.35	0.04	0.26	0.26	0.20	0.20	0.20	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1032	706	1774	1576	244	586	1247	1583
Grp Volume(v), veh/h	250	114	288	65	0	320	190	0	82	272	0	283
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1738	1774	0	1820	1833	0	1583
Q Serve(g_s), s	7.7	3.4	11.6	2.1	0.0	13.2	7.6	0.0	3.0	10.9	0.0	11.5
Cycle Q Clear(g_c), s	7.7	3.4	11.6	2.1	0.0	13.2	7.6	0.0	3.0	10.9	0.0	11.5
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.13	0.32		1.00
Lane Grp Cap(c), veh/h	409	644	547	418	0	458	356	0	365	391	0	530
V/C Ratio(X)	0.61	0.18	0.53	0.16	0.00	0.70	0.53	0.00	0.22	0.70	0.00	0.53
Avail Cap(c_a), veh/h	416	644	547	437	0	458	356	0	365	391	0	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	18.2	20.8	20.1	0.0	26.5	28.5	0.0	26.7	29.0	0.0	21.5
Incr Delay (d2), s/veh	2.6	0.6	3.6	0.2	0.0	8.6	5.6	0.0	1.4	9.8	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.8	5.6	1.0	0.0	7.4	4.3	0.0	1.6	6.6	0.0	5.6
LnGrp Delay(d),s/veh	20.6	18.8	24.4	20.3	0.0	35.1	34.1	0.0	28.1	38.8	0.0	25.3
LnGrp LOS	C	B	C	C		D	C		C	D		C
Approach Vol, veh/h		652			385			272			555	
Approach Delay, s/veh		22.0			32.6			32.3			31.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	25.0		20.0	7.1	31.6		21.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	21.0		16.0	4.0	27.0		17.0
Max Q Clear Time (g_c+I1), s	9.7	15.2		9.6	4.1	13.6		13.5
Green Ext Time (p_c), s	0.0	1.8		0.5	0.0	3.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	275	575	510	100	25	265
Future Vol, veh/h	275	575	510	100	25	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	299	625	554	109	27	288

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	663	0	-	0	1832	609
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	1223	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	926	-	-	-	84	495
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	278	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	926	-	-	-	57	495
Mov Cap-2 Maneuver	-	-	-	-	57	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	188	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	30
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	926	-	-	-	57	495
HCM Lane V/C Ratio	0.323	-	-	-	0.477	0.582
HCM Control Delay (s)	10.7	-	-	-	116	21.9
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	1.4	-	-	-	1.8	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	640	0	0	585	190	300	5	210	0	0	0
Future Volume (veh/h)	207	640	0	0	585	190	300	5	210	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	225	696	0	0	636	207	326	5	228			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	451	1272	0	0	705	599	380	6	344			
Arrive On Green	0.51	1.00	0.00	0.00	0.38	0.38	0.22	0.22	0.22			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1749	27	1583			
Grp Volume(v), veh/h	225	696	0	0	636	207	331	0	228			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1775	0	1583			
Q Serve(g_s), s	6.7	0.0	0.0	0.0	25.8	7.5	14.4	0.0	10.5			
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.0	25.8	7.5	14.4	0.0	10.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	451	1272	0	0	705	599	386	0	344			
V/C Ratio(X)	0.50	0.55	0.00	0.00	0.90	0.35	0.86	0.00	0.66			
Avail Cap(c_a), veh/h	451	1272	0	0	792	673	444	0	396			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.49	0.49	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.3	0.0	0.0	0.0	23.5	17.8	30.1	0.0	28.6			
Incr Delay (d2), s/veh	0.4	0.8	0.0	0.0	17.0	1.6	13.9	0.0	3.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.3	0.3	0.0	0.0	16.6	3.5	8.5	0.0	4.9			
LnGrp Delay(d),s/veh	16.7	0.8	0.0	0.0	40.5	19.4	44.1	0.0	32.0			
LnGrp LOS	B	A			D	B	D		C			
Approach Vol, veh/h		921			843			559				
Approach Delay, s/veh		4.7			35.3			39.1				
Approach LOS		A			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	24.4	34.3		21.4		58.6		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	14.0	34.0		20.0		52.0		
Max Q Clear Time (g_c+I1), s	8.7	27.8		16.4		2.0		
Green Ext Time (p_c), s	2.4	2.5		1.0		6.0		

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	595	295	305	560	20	100	0	240	12	6	10
Future Volume (veh/h)	25	595	295	305	560	20	100	0	240	12	6	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	27	647	321	332	609	22	109	0	261	13	7	11
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	721	613	355	1009	36	333	0	297	29	16	39
Arrive On Green	0.02	0.39	0.39	0.40	1.00	1.00	0.19	0.00	0.19	0.02	0.02	0.02
Sat Flow, veh/h	1774	1863	1583	1774	1787	65	1774	0	1583	1173	631	1583
Grp Volume(v), veh/h	27	647	321	332	0	631	109	0	261	20	0	11
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1851	1774	0	1583	1804	0	1583
Q Serve(g_s), s	1.2	26.1	12.5	14.4	0.0	0.0	4.3	0.0	12.8	0.9	0.0	0.5
Cycle Q Clear(g_c), s	1.2	26.1	12.5	14.4	0.0	0.0	4.3	0.0	12.8	0.9	0.0	0.5
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	40	721	613	355	0	1046	333	0	297	45	0	39
V/C Ratio(X)	0.67	0.90	0.52	0.94	0.00	0.60	0.33	0.00	0.88	0.45	0.00	0.28
Avail Cap(c_a), veh/h	89	721	613	355	0	1046	355	0	317	361	0	317
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.58	0.00	0.58	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.8	23.0	18.8	23.5	0.0	0.0	28.1	0.0	31.6	38.5	0.0	38.3
Incr Delay (d2), s/veh	17.9	16.1	3.2	22.0	0.0	1.5	0.6	0.0	22.4	6.8	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	16.5	6.0	9.0	0.0	0.4	2.1	0.0	7.4	0.5	0.0	0.3
LnGrp Delay(d),s/veh	56.8	39.1	22.0	45.5	0.0	1.5	28.7	0.0	54.0	45.2	0.0	42.1
LnGrp LOS	E	D	C	D		A	C		D	D		D
Approach Vol, veh/h		995			963			370			31	
Approach Delay, s/veh		34.1			16.7			46.5			44.1	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	49.2		19.0	20.0	35.0		6.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	16.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	2.0		14.8	16.4	28.1		2.9
Green Ext Time (p_c), s	0.0	10.9		0.2	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	14.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	790	120	140	530	75	125
Future Vol, veh/h	790	120	140	530	75	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	859	130	152	576	82	136

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	989	0	1804	924
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	880	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	699	-	87	327
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	406	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	699	-	~ 68	327
Mov Cap-2 Maneuver	-	-	-	-	~ 68	-
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	318	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	118.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	68	327	-	-	699	-
HCM Lane V/C Ratio	1.199	0.416	-	-	0.218	-
HCM Control Delay (s)	277.5	23.6	-	-	11.6	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6.4	2	-	-	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	10	780	45	70	490	45	15	5	90	40	15	20
Future Vol, veh/h	10	780	45	70	490	45	15	5	90	40	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	260	-	-	100	-	-	-	-	110	-	-	110
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	848	49	76	533	49	16	5	98	43	16	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	582	0	0	897	0	0	1611	1628	872	1606	1627	557
Stage 1	-	-	-	-	-	-	894	894	-	709	709	-
Stage 2	-	-	-	-	-	-	717	734	-	897	918	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	992	-	-	757	-	-	84	102	350	85	102	530
Stage 1	-	-	-	-	-	-	336	360	-	425	437	-
Stage 2	-	-	-	-	-	-	421	426	-	334	350	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	992	-	-	757	-	-	64	91	350	54	91	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	91	-	54	91	-
Stage 1	-	-	-	-	-	-	332	356	-	420	393	-
Stage 2	-	-	-	-	-	-	348	383	-	234	346	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.2	30.2	165.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	69	350	992	-	-	757	-	-	61	530
HCM Lane V/C Ratio	0.315	0.28	0.011	-	-	0.101	-	-	0.98	0.041
HCM Control Delay (s)	79.5	19.2	8.7	-	-	10.3	-	-	220.9	12.1
HCM Lane LOS	F	C	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1.2	1.1	0	-	-	0.3	-	-	4.7	0.1

Intersection	
Intersection Delay, s/veh	51.2
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	100	355	5	0	55	350	90	0	15	55	155
Future Vol, veh/h	0	100	355	5	0	55	350	90	0	15	55	155
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	109	386	5	0	60	380	98	0	16	60	168
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	68.9	68.3	21.4
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	7%	22%	11%	83%	0%
Vol Thru, %	24%	77%	71%	17%	0%
Vol Right, %	69%	1%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	225	460	495	120	165
LT Vol	15	100	55	100	0
Through Vol	55	355	350	20	0
RT Vol	155	5	90	0	165
Lane Flow Rate	245	500	538	130	179
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.562	1	1	0.333	0.403
Departure Headway (Hd)	8.27	7.496	7.372	9.199	8.082
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	438	485	495	393	447
Service Time	6.293	5.554	5.43	6.928	5.812
HCM Lane V/C Ratio	0.559	1.031	1.087	0.331	0.4
HCM Control Delay	21.4	68.9	68.3	16.5	16.2
HCM Lane LOS	C	F	F	C	C
HCM 95th-tile Q	3.4	13.4	13.5	1.4	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	100	20	165
Future Vol, veh/h	0	100	20	165
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	109	22	179
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	16.3
HCM LOS	C

Lane

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	220	365	365	90	65	115
Future Vol, veh/h	220	365	365	90	65	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	239	397	397	98	71	125

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	495	0	-	0	1321	446
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	875	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1069	-	-	-	173	612
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	408	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1069	-	-	-	123	612
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	291	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	32.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1069	-	-	-	123	612
HCM Lane V/C Ratio	0.224	-	-	-	0.574	0.204
HCM Control Delay (s)	9.3	0	-	-	67.9	12.4
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.9	-	-	-	2.8	0.8

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	105	10	25	10	30	20	10	250	10	20	245	110
Future Vol, veh/h	105	10	25	10	30	20	10	250	10	20	245	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	11	27	11	33	22	11	272	11	22	266	120

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	696	674	326	688	728	277	386	0	0	283	0	0
Stage 1	370	370	-	299	299	-	-	-	-	-	-	-
Stage 2	326	304	-	389	429	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	356	376	715	360	350	762	1172	-	-	1279	-	-
Stage 1	650	620	-	710	666	-	-	-	-	-	-	-
Stage 2	687	663	-	635	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	366	715	332	341	762	1172	-	-	1279	-	-
Mov Cap-2 Maneuver	314	366	-	332	341	-	-	-	-	-	-	-
Stage 1	644	609	-	703	660	-	-	-	-	-	-	-
Stage 2	628	657	-	590	574	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	15.3	0.3	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1172	-	-	353	416	1279	-	-
HCM Lane V/C Ratio	0.009	-	-	0.431	0.157	0.017	-	-
HCM Control Delay (s)	8.1	-	-	22.7	15.3	7.9	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.1	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	25	5	60	0	0	0	20	275	0	5	340	25
Future Vol, veh/h	25	5	60	0	0	0	20	275	0	5	340	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	5	65	0	0	0	22	299	0	5	370	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	736	736	383	771	750	299	397	0	0	299	0	0
Stage 1	394	394	-	342	342	-	-	-	-	-	-	-
Stage 2	342	342	-	429	408	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	335	346	664	317	340	741	1162	-	-	1262	-	-
Stage 1	631	605	-	673	638	-	-	-	-	-	-	-
Stage 2	673	638	-	604	597	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	328	336	664	276	331	741	1162	-	-	1262	-	-
Mov Cap-2 Maneuver	328	336	-	276	331	-	-	-	-	-	-	-
Stage 1	616	602	-	658	623	-	-	-	-	-	-	-
Stage 2	658	623	-	537	594	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	0	0.6	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1162	-	-	496	-	1262	-	-
HCM Lane V/C Ratio	0.019	-	-	0.197	-	0.004	-	-
HCM Control Delay (s)	8.2	0	-	14	0	7.9	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	-	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	30	5	100	5	5	5	110	280	5	5	360	30
Future Vol, veh/h	30	5	100	5	5	5	110	280	5	5	360	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	5	109	5	5	5	120	304	5	5	391	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	970	967	408	1022	981	307	424	0	0	310	0	0
Stage 1	418	418	-	546	546	-	-	-	-	-	-	-
Stage 2	552	549	-	476	435	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	233	254	643	214	249	733	1135	-	-	1250	-	-
Stage 1	612	591	-	522	518	-	-	-	-	-	-	-
Stage 2	518	516	-	570	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	204	220	643	157	216	733	1135	-	-	1250	-	-
Mov Cap-2 Maneuver	204	220	-	157	216	-	-	-	-	-	-	-
Stage 1	534	588	-	455	452	-	-	-	-	-	-	-
Stage 2	443	450	-	467	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	20.9	2.4	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1135	-	-	415	243	1250	-	-
HCM Lane V/C Ratio	0.105	-	-	0.354	0.067	0.004	-	-
HCM Control Delay (s)	8.5	0	-	18.3	20.9	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	1.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	75	110	170	60	30	105
Future Vol, veh/h	75	110	170	60	30	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	120	185	65	33	114

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	525	90	147	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	7.12	6.22	4.12	-	-	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	463	968	1435	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	415	968	1435	-	-	-
Mov Cap-2 Maneuver	415	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	5.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1435	-	628	-	-
HCM Lane V/C Ratio	0.129	-	0.32	-	-
HCM Control Delay (s)	7.9	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.4	-	-

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	15	200	250	25	395	5	180	10	15	0	5	5
Future Vol, veh/h	15	200	250	25	395	5	180	10	15	0	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	217	272	27	429	5	196	11	16	0	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	489	0	0	878	875	353	885	1008	432
Stage 1	-	-	-	-	-	-	386	386	-	486	486	-
Stage 2	-	-	-	-	-	-	492	489	-	399	522	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1125	-	-	1074	-	-	268	288	691	266	240	624
Stage 1	-	-	-	-	-	-	637	610	-	563	551	-
Stage 2	-	-	-	-	-	-	558	549	-	627	531	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1125	-	-	1074	-	-	250	273	691	242	227	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	250	273	-	242	227	-
Stage 1	-	-	-	-	-	-	624	598	-	552	533	-
Stage 2	-	-	-	-	-	-	529	531	-	589	520	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	51.7	16.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	250	429	1125	-	-	1074	-	-	333
HCM Lane V/C Ratio	0.783	0.063	0.014	-	-	0.025	-	-	0.033
HCM Control Delay (s)	56.9	14	8.2	0	-	8.4	0	-	16.2
HCM Lane LOS	F	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	5.8	0.2	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	520	5	45	875	180	10	15	95	215	10	65
Future Volume (veh/h)	20	520	5	45	875	180	10	15	95	215	10	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	22	565	5	49	951	196	11	16	103	234	11	71
Adj No. of Lanes	1	2	0	1	1	0	0	1	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	2195	19	602	936	193	61	57	260	349	379	322
Arrive On Green	0.02	0.61	0.61	0.03	0.62	0.62	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	3595	32	1774	1499	309	56	279	1278	1268	1863	1583
Grp Volume(v), veh/h	22	278	292	49	0	1147	130	0	0	234	11	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	0	1808	1613	0	0	1268	1863	1583
Q Serve(g_s), s	0.4	5.7	5.7	0.8	0.0	49.1	0.0	0.0	0.0	8.8	0.4	2.9
Cycle Q Clear(g_c), s	0.4	5.7	5.7	0.8	0.0	49.1	5.4	0.0	0.0	14.2	0.4	2.9
Prop In Lane	1.00		0.02	1.00		0.17	0.08		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	126	1080	1134	602	0	1129	378	0	0	349	379	322
V/C Ratio(X)	0.17	0.26	0.26	0.08	0.00	1.02	0.34	0.00	0.00	0.67	0.03	0.22
Avail Cap(c_a), veh/h	182	1080	1134	633	0	1129	378	0	0	349	379	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	7.1	7.1	5.3	0.0	14.8	27.1	0.0	0.0	30.6	25.1	26.1
Incr Delay (d2), s/veh	0.7	0.6	0.5	0.1	0.0	30.8	2.5	0.0	0.0	4.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	3.1	0.4	0.0	33.8	2.7	0.0	0.0	5.4	0.2	1.3
LnGrp Delay(d),s/veh	20.8	7.7	7.6	5.4	0.0	45.5	29.6	0.0	0.0	35.5	25.1	26.5
LnGrp LOS	C	A	A	A		F	C			D	C	C
Approach Vol, veh/h		592			1196			130			316	
Approach Delay, s/veh		8.1			43.9			29.6			33.1	
Approach LOS		A			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	52.0		20.0	5.5	53.1		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.8	7.7		7.4	2.4	51.1		16.2
Green Ext Time (p_c), s	0.0	19.3		1.2	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	100	10	0	145	50	20	0	10	50	200	0	25	65	5
Future Vol, veh/h	0	10	100	10	0	145	50	20	0	10	50	200	0	25	65	5
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	109	11	0	158	54	22	0	11	54	217	0	27	71	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	10.7	10.1	9.3
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	8%	67%	26%
Vol Thru, %	19%	83%	23%	68%
Vol Right, %	77%	8%	9%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	120	215	95
LT Vol	10	10	145	25
Through Vol	50	100	50	65
RT Vol	200	10	20	5
Lane Flow Rate	283	130	234	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.356	0.186	0.33	0.15
Departure Headway (Hd)	4.539	5.121	5.085	5.228
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	786	691	699	678
Service Time	2.612	3.22	3.175	3.322
HCM Lane V/C Ratio	0.36	0.188	0.335	0.152
HCM Control Delay	10.1	9.4	10.7	9.3
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.6	0.7	1.4	0.5

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	180	105	20	155	40	90	70	15	45	75	5
Future Vol, veh/h	5	180	105	20	155	40	90	70	15	45	75	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	196	114	22	168	43	98	76	16	49	82	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	212	0	0	310	0	0	538	519	253	536	555	190
Stage 1	-	-	-	-	-	-	264	264	-	234	234	-
Stage 2	-	-	-	-	-	-	274	255	-	302	321	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1358	-	-	1250	-	-	454	461	786	455	440	852
Stage 1	-	-	-	-	-	-	741	690	-	769	711	-
Stage 2	-	-	-	-	-	-	732	696	-	707	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1358	-	-	1250	-	-	378	450	786	381	429	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	450	-	381	429	-
Stage 1	-	-	-	-	-	-	737	687	-	765	697	-
Stage 2	-	-	-	-	-	-	629	682	-	613	649	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	19.4	17.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	406	786	1358	-	-	1250	-	-	410	852
HCM Lane V/C Ratio	0.428	0.021	0.004	-	-	0.017	-	-	0.318	0.006
HCM Control Delay (s)	20.3	9.7	7.7	0	-	7.9	0	-	17.8	9.3
HCM Lane LOS	C	A	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	2.1	0.1	0	-	-	0.1	-	-	1.3	0

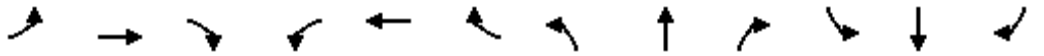
Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	270	5	25	250	15	45
Future Vol, veh/h	270	5	25	250	15	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	5	27	272	16	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	299	0	622	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	4.12	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1262	-	399	743
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	391	743
Mov Cap-2 Maneuver	-	-	-	-	391	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	11.7
HCM LOS			B

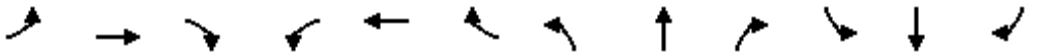
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	606	-	-	1262	-
HCM Lane V/C Ratio	0.108	-	-	0.022	-
HCM Control Delay (s)	11.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	400	0	0	205	220	95	5	135	0	0	0
Future Volume (vph)	285	400	0	0	205	220	95	5	135	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7			3.7	3.7	4.1	4.1				
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	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)	1681	1764			1863	1583	1770	1593				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1681	1764			1863	1583	1770	1593				
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)	310	435	0	0	223	239	103	5	147	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	160	0	128	0	0	0	0
Lane Group Flow (vph)	279	466	0	0	223	79	103	24	0	0	0	0
Turn Type	Split	NA			NA	Perm	Perm	NA				
Protected Phases	6	6			3 5			4				
Permitted Phases						3 5	4					
Actuated Green, G (s)	25.4	25.4			24.7	24.7	9.7	9.7				
Effective Green, g (s)	25.4	25.4			24.7	24.7	9.7	9.7				
Actuated g/C Ratio	0.34	0.34			0.33	0.33	0.13	0.13				
Clearance Time (s)	3.7	3.7					4.1	4.1				
Vehicle Extension (s)	2.0	2.0					2.0	2.0				
Lane Grp Cap (vph)	569	597			613	521	228	206				
v/s Ratio Prot	0.17	c0.26			c0.12			0.02				
v/s Ratio Perm						0.05	c0.06					
v/c Ratio	0.49	0.78			0.36	0.15	0.45	0.12				
Uniform Delay, d1	19.7	22.3			19.2	17.8	30.2	28.9				
Progression Factor	0.88	0.72			0.41	0.07	1.00	1.00				
Incremental Delay, d2	2.0	6.1			0.1	0.0	0.5	0.1				
Delay (s)	19.3	22.1			8.0	1.2	30.7	29.0				
Level of Service	B	C			A	A	C	C				
Approach Delay (s)		21.0			4.5			29.7			0.0	
Approach LOS		C			A			C			A	

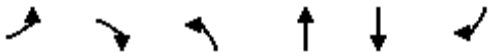
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	165	85	215	0	0	0	0	245	0	335
Future Volume (vph)	0	440	165	85	215	0	0	0	0	245	0	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		3.0	4.9						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						1.00	0.88
Frt		0.96		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.95	1.00
Satd. Flow (prot)		1743		1719	1810						1719	2707
Flt Permitted		1.00		0.95	1.00						0.95	1.00
Satd. Flow (perm)		1743		1719	1810						1719	2707
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	489	183	94	239	0	0	0	0	272	0	372
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	655	0	94	239	0	0	0	0	0	272	372
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type		NA		Prot	NA					Split	NA	Prot
Protected Phases		2 8		1	6					7	7	7
Permitted Phases												
Actuated Green, G (s)		34.8		7.3	16.9						14.8	14.8
Effective Green, g (s)		34.8		7.3	16.9						14.8	14.8
Actuated g/C Ratio		0.46		0.10	0.23						0.20	0.20
Clearance Time (s)				3.0	4.9						4.9	4.9
Vehicle Extension (s)				2.5	2.0						2.0	2.0
Lane Grp Cap (vph)		808		167	407						339	534
v/s Ratio Prot		c0.38		0.05	c0.13						c0.16	0.14
v/s Ratio Perm												
v/c Ratio		0.81		0.56	0.59						0.80	0.70
Uniform Delay, d1		17.3		32.3	25.9						28.7	28.0
Progression Factor		0.65		0.93	1.42						1.00	1.00
Incremental Delay, d2		3.9		3.4	1.4						12.1	3.2
Delay (s)		15.0		33.5	38.3						40.8	31.2
Level of Service		B		C	D						D	C
Approach Delay (s)		15.0			36.9			0.0			35.3	
Approach LOS		B			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	260	270	240	50	40	185
Future Volume (vph)	260	270	240	50	40	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1		3.7	3.7	3.7
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.96	1.00	1.00
Satd. Flow (prot)	1770	1583		1789	1863	1583
Flt Permitted	0.95	1.00		0.96	1.00	1.00
Satd. Flow (perm)	1770	1583		1789	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	293	261	54	43	201
RTOR Reduction (vph)	0	156	0	0	0	179
Lane Group Flow (vph)	283	137	0	315	43	22
Turn Type	Prot	Perm	Split	NA	NA	Perm
Protected Phases	4 6		5	5	3	
Permitted Phases		4 6				3
Actuated Green, G (s)	35.1	35.1		16.5	8.2	8.2
Effective Green, g (s)	35.1	35.1		16.5	8.2	8.2
Actuated g/C Ratio	0.47	0.47		0.22	0.11	0.11
Clearance Time (s)				3.7	3.7	3.7
Vehicle Extension (s)				2.0	2.0	2.0
Lane Grp Cap (vph)	828	740		393	203	173
v/s Ratio Prot	c0.16			c0.18	c0.02	
v/s Ratio Perm		0.09				0.01
v/c Ratio	0.34	0.19		0.80	0.21	0.13
Uniform Delay, d1	12.6	11.6		27.7	30.5	30.2
Progression Factor	0.29	0.16		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0		10.6	0.2	0.1
Delay (s)	3.7	1.9		38.3	30.6	30.3
Level of Service	A	A		D	C	C
Approach Delay (s)	2.8			38.3	30.4	
Approach LOS	A			D	C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	345	40	255	335	30	220
Future Volume (veh/h)	345	40	255	335	30	220
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	375	43	277	364	33	239
Adj No. of Lanes	1	1	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	611	520	480	1068	381	340
Arrive On Green	0.33	0.33	0.14	0.57	0.22	0.22
Sat Flow, veh/h	1863	1583	3442	1863	1774	1583
Grp Volume(v), veh/h	375	43	277	364	33	239
Grp Sat Flow(s),veh/h/ln	1863	1583	1721	1863	1774	1583
Q Serve(g_s), s	6.4	0.7	2.8	3.9	0.6	5.3
Cycle Q Clear(g_c), s	6.4	0.7	2.8	3.9	0.6	5.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	611	520	480	1068	381	340
V/C Ratio(X)	0.61	0.08	0.58	0.34	0.09	0.70
Avail Cap(c_a), veh/h	1575	1339	1728	2707	1266	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	8.8	15.2	4.3	11.9	13.7
Incr Delay (d2), s/veh	1.0	0.1	1.1	0.2	0.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.3	1.4	2.0	0.3	2.6
LnGrp Delay(d),s/veh	11.7	8.8	16.3	4.5	12.0	16.4
LnGrp LOS	B	A	B	A	B	B
Approach Vol, veh/h	418			641	272	
Approach Delay, s/veh	11.4			9.6	15.8	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.1	9.3	16.4				25.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		27.0	19.0	32.0				55.0
Max Q Clear Time (g_c+I1), s		7.3	4.8	8.4				5.9
Green Ext Time (p_c), s		0.9	0.7	4.0				4.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	405	0	0	420	160	390	5	60	0	0	0
Future Volume (veh/h)	250	405	0	0	420	160	390	5	60	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1937	1937	1900	1863	1863			
Adj Flow Rate, veh/h	272	440	0	0	457	0	424	5	65			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	465	1025	0	0	702	597	614	7	554			
Arrive On Green	0.18	0.73	0.00	0.00	0.36	0.00	0.35	0.35	0.35			
Sat Flow, veh/h	1774	1863	0	0	1937	1647	1754	21	1583			
Grp Volume(v), veh/h	272	440	0	0	457	0	429	0	65			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1937	1647	1775	0	1583			
Q Serve(g_s), s	0.1	7.4	0.0	0.0	15.7	0.0	16.6	0.0	2.2			
Cycle Q Clear(g_c), s	0.1	7.4	0.0	0.0	15.7	0.0	16.6	0.0	2.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	465	1025	0	0	702	597	621	0	554			
V/C Ratio(X)	0.59	0.43	0.00	0.00	0.65	0.00	0.69	0.00	0.12			
Avail Cap(c_a), veh/h	465	1025	0	0	702	597	621	0	554			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.5	5.8	0.0	0.0	21.3	0.0	22.3	0.0	17.6			
Incr Delay (d2), s/veh	1.5	1.1	0.0	0.0	4.6	0.0	6.2	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	3.9	0.0	0.0	9.3	0.0	9.2	0.0	2.4			
LnGrp Delay(d),s/veh	27.0	6.9	0.0	0.0	25.9	0.0	28.5	0.0	18.1			
LnGrp LOS	C	A			C		C		B			
Approach Vol, veh/h		712			457			494				
Approach Delay, s/veh		14.6			25.9			27.1				
Approach LOS		B			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.0		32.0	15.0	33.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		44.0		28.0	11.0	29.0		
Max Q Clear Time (g_c+I1), s		9.4		18.6	2.1	17.7		
Green Ext Time (p_c), s		3.7		2.1	2.4	2.1		

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	545	285	185	625	0	0	0	0	110	0	430
Future Volume (veh/h)	0	545	285	185	625	0	0	0	0	110	0	430
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1937	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	592	0	201	679	0				120	0	467
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	847	749	402	1094	0				554	0	495
Arrive On Green	0.00	0.45	0.00	0.17	1.00	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	1863	1647	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	592	0	201	679	0				120	0	467
Grp Sat Flow(s),veh/h/ln	0	1863	1647	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	20.3	0.0	4.7	0.0	0.0				4.0	0.0	23.0
Cycle Q Clear(g_c), s	0.0	20.3	0.0	4.7	0.0	0.0				4.0	0.0	23.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	847	749	402	1094	0				554	0	495
V/C Ratio(X)	0.00	0.70	0.00	0.50	0.62	0.00				0.22	0.00	0.94
Avail Cap(c_a), veh/h	0	847	749	410	1094	0				554	0	495
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.00	0.73	0.73	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.4	0.0	11.5	0.0	0.0				20.3	0.0	26.8
Incr Delay (d2), s/veh	0.0	3.5	0.0	0.7	1.9	0.0				0.2	0.0	27.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.2	0.0	2.2	0.6	0.0				2.0	0.0	13.7
LnGrp Delay(d),s/veh	0.0	20.9	0.0	12.2	1.9	0.0				20.5	0.0	53.8
LnGrp LOS		C		B	A					C		D
Approach Vol, veh/h		592			880						587	
Approach Delay, s/veh		20.9			4.3						47.0	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.6	40.4				51.0		29.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	7.0	36.0				47.0		25.0
Max Q Clear Time (g_c+I1), s	6.7	22.3				2.0		25.0
Green Ext Time (p_c), s	0.0	7.0				11.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	45	320	0	0	270	210	190	5	265	0	0	0
Future Vol, veh/h	45	320	0	0	270	210	190	5	265	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	348	0	0	293	228	207	5	288	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	522	0	-	-	-	0	854	968	348
Stage 1	-	-	-	-	-	-	446	446	-
Stage 2	-	-	-	-	-	-	408	522	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1044	-	0	0	-	-	329	254	695
Stage 1	-	-	0	0	-	-	645	574	-
Stage 2	-	-	0	0	-	-	671	531	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1044	-	-	-	-	-	310	0	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	0	-
Stage 1	-	-	-	-	-	-	608	0	-
Stage 2	-	-	-	-	-	-	671	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.1	0	24.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	310	695	1044	-	-	-
HCM Lane V/C Ratio	0.684	0.414	0.047	-	-	-
HCM Control Delay (s)	38.4	13.8	8.6	0	-	-
HCM Lane LOS	E	B	A	A	-	-
HCM 95th %tile Q(veh)	4.7	2	0.1	-	-	-

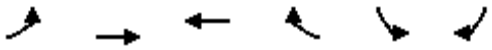
Intersection	
Int Delay, s/veh	29.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	150	140	180	280	0	0	0	0	215	5	35
Future Vol, veh/h	0	150	140	180	280	0	0	0	0	215	5	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	163	152	196	304	0	0	0	0	234	5	38

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	315	0	0	935	1011	304
Stage 1	-	-	-	-	-	-	696	696	-
Stage 2	-	-	-	-	-	-	239	315	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1245	-	0	295	240	736
Stage 1	0	-	-	-	-	0	495	443	-
Stage 2	0	-	-	-	-	0	801	656	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1245	-	-	239	0	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	239	0	-
Stage 1	-	-	-	-	-	-	401	0	-
Stage 2	-	-	-	-	-	-	801	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.3	110.9
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1245	-	264
HCM Lane V/C Ratio	-	-	0.157	-	1.05
HCM Control Delay (s)	-	-	8.4	0	110.9
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	11.1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	455	440	110	150	150
Future Volume (vph)	110	455	440	110	150	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	4.9		4.9	4.9
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1845	3400		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1845	3400		1752	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	117	484	468	117	160	160
RTOR Reduction (vph)	0	0	29	0	0	131
Lane Group Flow (vph)	117	484	556	0	160	29
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6 7		8	
Permitted Phases						8
Actuated Green, G (s)	11.7	21.4	31.7		13.4	13.4
Effective Green, g (s)	11.7	21.4	31.7		13.4	13.4
Actuated g/C Ratio	0.16	0.29	0.42		0.18	0.18
Clearance Time (s)	3.5	5.3			4.9	4.9
Vehicle Extension (s)	2.0	2.0			1.0	1.0
Lane Grp Cap (vph)	273	526	1437		313	280
v/s Ratio Prot	0.07	c0.26	c0.16		c0.09	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.92	0.39		0.51	0.10
Uniform Delay, d1	28.6	26.0	14.9		27.8	25.8
Progression Factor	1.00	1.00	0.08		1.00	1.00
Incremental Delay, d2	4.9	23.7	0.0		0.6	0.1
Delay (s)	33.5	49.7	1.2		28.4	25.8
Level of Service	C	D	A		C	C
Approach Delay (s)		46.6	1.2		27.1	
Approach LOS		D	A		C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	41.6%	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												
Traffic Volume (veh/h)	250	200	75	5	110	75	80	10	5	115	5	180
Future Volume (veh/h)	250	200	75	5	110	75	80	10	5	115	5	180
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	260	208	78	5	115	78	83	10	5	120	5	188
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	514	707	601	381	266	180	364	241	120	350	15	528
Arrive On Green	0.13	0.38	0.38	0.01	0.26	0.26	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1036	703	1774	1173	586	1706	71	1583
Grp Volume(v), veh/h	260	208	78	5	0	193	83	0	15	125	0	188
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1739	1774	0	1759	1777	0	1583
Q Serve(g_s), s	7.9	6.1	2.5	0.2	0.0	7.2	3.0	0.0	0.5	4.7	0.0	7.0
Cycle Q Clear(g_c), s	7.9	6.1	2.5	0.2	0.0	7.2	3.0	0.0	0.5	4.7	0.0	7.0
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.33	0.96		1.00
Lane Grp Cap(c), veh/h	514	707	601	381	0	446	364	0	361	364	0	528
V/C Ratio(X)	0.51	0.29	0.13	0.01	0.00	0.43	0.23	0.00	0.04	0.34	0.00	0.36
Avail Cap(c_a), veh/h	559	707	601	462	0	446	364	0	361	364	0	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	16.9	15.8	21.3	0.0	24.3	25.9	0.0	24.9	26.5	0.0	19.7
Incr Delay (d2), s/veh	0.8	1.1	0.4	0.0	0.0	3.0	1.5	0.0	0.2	2.6	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.3	1.2	0.1	0.0	3.9	1.6	0.0	0.3	2.6	0.0	3.3
LnGrp Delay(d),s/veh	17.4	18.0	16.2	21.3	0.0	27.3	27.3	0.0	25.1	29.1	0.0	21.5
LnGrp LOS	B	B	B	C		C	C		C	C		C
Approach Vol, veh/h		546			198			98			313	
Approach Delay, s/veh		17.4			27.2			27.0			24.5	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.0	24.0		20.0	4.4	33.6		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	20.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	9.9	9.2		5.0	2.2	8.1		9.0
Green Ext Time (p_c), s	0.2	1.8		0.2	0.0	2.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	95	505	345	25	20	90
Future Vol, veh/h	95	505	345	25	20	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	526	359	26	21	94

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	385	0	-	0	1096	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	724	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1173	-	-	-	236	674
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	480	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1173	-	-	-	216	674
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	439	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1173	-	-	-	216	674
HCM Lane V/C Ratio	0.084	-	-	-	0.096	0.139
HCM Control Delay (s)	8.4	-	-	-	23.4	11.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	355	0	0	365	70	340	5	245	0	0	0
Future Volume (veh/h)	245	355	0	0	365	70	340	5	245	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	261	378	0	0	388	74	362	5	261			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	290	1124	0	0	684	581	439	6	397			
Arrive On Green	0.16	0.60	0.00	0.00	0.37	0.37	0.25	0.25	0.25			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1751	24	1583			
Grp Volume(v), veh/h	261	378	0	0	388	74	367	0	261			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1775	0	1583			
Q Serve(g_s), s	7.9	5.6	0.0	0.0	9.2	1.7	10.7	0.0	8.1			
Cycle Q Clear(g_c), s	7.9	5.6	0.0	0.0	9.2	1.7	10.7	0.0	8.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	290	1124	0	0	684	581	446	0	397			
V/C Ratio(X)	0.90	0.34	0.00	0.00	0.57	0.13	0.82	0.00	0.66			
Avail Cap(c_a), veh/h	290	1124	0	0	684	581	516	0	461			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.73	0.73	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	22.6	5.4	0.0	0.0	13.9	11.6	19.4	0.0	18.5			
Incr Delay (d2), s/veh	22.6	0.6	0.0	0.0	3.4	0.5	9.2	0.0	2.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	3.0	0.0	0.0	5.3	0.8	6.3	0.0	3.9			
LnGrp Delay(d),s/veh	45.2	6.0	0.0	0.0	17.3	12.0	28.7	0.0	21.2			
LnGrp LOS	D	A			B	B	C		C			
Approach Vol, veh/h		639			462			628				
Approach Delay, s/veh		22.0			16.5			25.6				
Approach LOS		C			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.0	24.2		17.8		37.2		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	9.0	18.0		16.0		31.0		
Max Q Clear Time (g_c+I1), s	9.9	11.2		12.7		7.6		
Green Ext Time (p_c), s	0.0	2.6		1.1		4.8		

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	485	410	165	520	20	255	10	95	20	15	15
Future Volume (veh/h)	15	485	410	165	520	20	255	10	95	20	15	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	16	533	451	181	571	22	280	11	104	22	16	16
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	839	713	225	1002	39	321	13	297	37	27	55
Arrive On Green	0.01	0.45	0.45	0.13	0.56	0.56	0.19	0.19	0.19	0.03	0.03	0.03
Sat Flow, veh/h	1774	1863	1583	1774	1782	69	1710	67	1583	1048	762	1583
Grp Volume(v), veh/h	16	533	451	181	0	593	291	0	104	38	0	16
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1851	1777	0	1583	1810	0	1583
Q Serve(g_s), s	0.7	17.6	17.5	7.9	0.0	16.5	12.7	0.0	4.6	1.7	0.0	0.8
Cycle Q Clear(g_c), s	0.7	17.6	17.5	7.9	0.0	16.5	12.7	0.0	4.6	1.7	0.0	0.8
Prop In Lane	1.00		1.00	1.00		0.04	0.96		1.00	0.58		1.00
Lane Grp Cap(c), veh/h	27	839	713	225	0	1041	333	0	297	63	0	55
V/C Ratio(X)	0.60	0.64	0.63	0.80	0.00	0.57	0.87	0.00	0.35	0.60	0.00	0.29
Avail Cap(c_a), veh/h	89	839	713	355	0	1041	355	0	317	362	0	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.00	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	16.9	16.9	33.9	0.0	11.3	31.6	0.0	28.3	38.1	0.0	37.6
Incr Delay (d2), s/veh	20.0	3.7	4.2	5.4	0.0	1.7	19.7	0.0	0.7	8.8	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.9	8.5	4.2	0.0	8.9	8.1	0.0	2.1	1.0	0.0	0.4
LnGrp Delay(d),s/veh	59.2	20.6	21.1	39.3	0.0	13.0	51.3	0.0	29.0	46.9	0.0	40.5
LnGrp LOS	E	C	C	D		B	D		C	D		D
Approach Vol, veh/h		1000			774			395			54	
Approach Delay, s/veh		21.4			19.1			45.4			45.0	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	49.0		19.0	14.2	40.0		6.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	16.0	16.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	18.5		14.7	9.9	19.6		3.7
Green Ext Time (p_c), s	0.0	5.7		0.3	0.2	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	18.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	550	65	245	545	75	360
Future Vol, veh/h	550	65	245	545	75	360
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	585	69	261	580	80	383

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	654	0	1721	620
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	1101	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	933	-	98	488
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	318	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	933	-	~ 71	488
Mov Cap-2 Maneuver	-	-	-	-	~ 71	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	229	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	70.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	71	488	-	-	933	-
HCM Lane V/C Ratio	1.124	0.785	-	-	0.279	-
HCM Control Delay (s)	246.1	34.3	-	-	10.3	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	6	7.1	-	-	1.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	35	390	70	155	425	40	65	10	185	40	10	20
Future Vol, veh/h	35	390	70	155	425	40	65	10	185	40	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	260	-	-	100	-	-	-	-	110	-	-	110
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	411	74	163	447	42	68	11	195	42	11	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	484	0	0	1321	1337	447	1321	1353	468
Stage 1	-	-	-	-	-	-	521	521	-	795	795	-
Stage 2	-	-	-	-	-	-	800	816	-	526	558	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1074	-	-	1079	-	-	134	153	612	134	150	595
Stage 1	-	-	-	-	-	-	539	532	-	381	399	-
Stage 2	-	-	-	-	-	-	379	391	-	535	512	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	1079	-	-	104	125	612	74	123	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	125	-	74	123	-
Stage 1	-	-	-	-	-	-	520	514	-	368	339	-
Stage 2	-	-	-	-	-	-	301	332	-	345	494	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.2	39.3	83.1
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	106	612	1074	-	-	1079	-	-	80	595
HCM Lane V/C Ratio	0.745	0.318	0.034	-	-	0.151	-	-	0.658	0.035
HCM Control Delay (s)	102.7	13.6	8.5	-	-	8.9	-	-	111.8	11.3
HCM Lane LOS	F	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	4	1.4	0.1	-	-	0.5	-	-	3	0.1

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	20	195	5	0	65	175	105	0	5	20	105
Future Vol, veh/h	0	20	195	5	0	65	175	105	0	5	20	105
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	224	6	0	75	201	121	0	6	23	121
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	12.4	15.5	10.6
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	9%	19%	76%	0%
Vol Thru, %	15%	89%	51%	24%	0%
Vol Right, %	81%	2%	30%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	220	345	145	20
LT Vol	5	20	65	110	0
Through Vol	20	195	175	35	0
RT Vol	105	5	105	0	20
Lane Flow Rate	149	253	397	167	23
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.239	0.396	0.581	0.321	0.037
Departure Headway (Hd)	5.752	5.635	5.275	6.927	5.827
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	620	635	682	517	611
Service Time	3.828	3.703	3.333	4.697	3.596
HCM Lane V/C Ratio	0.24	0.398	0.582	0.323	0.038
HCM Control Delay	10.6	12.4	15.5	13	8.8
HCM Lane LOS	B	B	C	B	A
HCM 95th-tile Q	0.9	1.9	3.8	1.4	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	110	35	20
Future Vol, veh/h	0	110	35	20
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	126	40	23
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.5
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	170	395	435	70	110	210
Future Vol, veh/h	170	395	435	70	110	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	177	411	453	73	115	219

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1256	490
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	766	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1036	-	-	-	188	576
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	146	576
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	356	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	39.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1036	-	-	-	146	576
HCM Lane V/C Ratio	0.171	-	-	-	0.785	0.38
HCM Control Delay (s)	9.2	0	-	-	86.4	15
HCM Lane LOS	A	A	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	4.9	1.8

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	100	10	10	15	25	30	5	270	20	35	255	120
Future Vol, veh/h	100	10	10	15	25	30	5	270	20	35	255	120
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	11	11	16	26	32	5	284	21	37	268	126

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	739	721	332	721	773	295	395	0	0	305	0	0
Stage 1	405	405	-	305	305	-	-	-	-	-	-	-
Stage 2	334	316	-	416	468	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	333	353	710	343	330	744	1164	-	-	1256	-	-
Stage 1	622	598	-	705	662	-	-	-	-	-	-	-
Stage 2	680	655	-	614	561	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	341	710	322	319	744	1164	-	-	1256	-	-
Mov Cap-2 Maneuver	291	341	-	322	319	-	-	-	-	-	-	-
Stage 1	619	580	-	702	659	-	-	-	-	-	-	-
Stage 2	622	652	-	576	544	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.4	15.3	0.1	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	310	424	1256	-	-
HCM Lane V/C Ratio	0.005	-	-	0.407	0.174	0.029	-	-
HCM Control Delay (s)	8.1	-	-	24.4	15.3	8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	20	0	35	5	0	5	15	305	0	0	265	25
Future Vol, veh/h	20	0	35	5	0	5	15	305	0	0	265	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	37	5	0	5	16	321	0	0	279	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	647	645	292	664	658	321	305	0	0	321	0	0
Stage 1	292	292	-	353	353	-	-	-	-	-	-	-
Stage 2	355	353	-	311	305	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	384	391	747	374	384	720	1256	-	-	1239	-	-
Stage 1	716	671	-	664	631	-	-	-	-	-	-	-
Stage 2	662	631	-	699	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	385	747	351	378	720	1256	-	-	1239	-	-
Mov Cap-2 Maneuver	377	385	-	351	378	-	-	-	-	-	-	-
Stage 1	705	671	-	653	621	-	-	-	-	-	-	-
Stage 2	647	621	-	665	662	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	12.8	0.4	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1256	-	-	551	472	1239	-	-
HCM Lane V/C Ratio	0.013	-	-	0.105	0.022	-	-	-
HCM Control Delay (s)	7.9	0	-	12.3	12.8	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	5	5	10	5	0	5	10	295	5	5	300	10
Future Vol, veh/h	5	5	10	5	0	5	10	295	5	5	300	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	5	11	5	0	5	11	311	5	5	316	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	669	669	321	673	671	313	326	0	0	316	0	0
Stage 1	332	332	-	334	334	-	-	-	-	-	-	-
Stage 2	337	337	-	339	337	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	371	379	720	369	378	727	1234	-	-	1244	-	-
Stage 1	681	644	-	680	643	-	-	-	-	-	-	-
Stage 2	677	641	-	676	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	364	373	720	355	372	727	1234	-	-	1244	-	-
Mov Cap-2 Maneuver	364	373	-	355	372	-	-	-	-	-	-	-
Stage 1	674	641	-	673	636	-	-	-	-	-	-	-
Stage 2	665	634	-	657	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	12.7	0.3	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1234	-	-	487	477	1244	-	-
HCM Lane V/C Ratio	0.009	-	-	0.043	0.022	0.004	-	-
HCM Control Delay (s)	7.9	0	-	12.7	12.7	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	70	95	140	30	35	115
Future Vol, veh/h	70	95	140	30	35	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	106	156	33	39	128

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	447	103	167	0	-	0
Stage 1	103	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	569	952	1411	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	505	952	1411	-	-	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	6.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1411	-	692	-	-
HCM Lane V/C Ratio	0.11	-	0.265	-	-
HCM Control Delay (s)	7.9	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.1	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	15	305	135	20	275	20	140	10	15	15	10	25
Future Vol, veh/h	15	305	135	20	275	20	140	10	15	15	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	332	147	22	299	22	152	11	16	16	11	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	478	0	0	810	802	405	804	864	310
Stage 1	-	-	-	-	-	-	438	438	-	353	353	-
Stage 2	-	-	-	-	-	-	372	364	-	451	511	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1084	-	-	298	317	646	301	292	730
Stage 1	-	-	-	-	-	-	597	579	-	664	631	-
Stage 2	-	-	-	-	-	-	648	624	-	588	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1239	-	-	1084	-	-	269	304	646	276	280	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	304	-	276	280	-
Stage 1	-	-	-	-	-	-	586	569	-	652	615	-
Stage 2	-	-	-	-	-	-	598	608	-	552	527	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	31.3	15.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	269	446	1239	-	-	1084	-	-	402
HCM Lane V/C Ratio	0.566	0.061	0.013	-	-	0.02	-	-	0.135
HCM Control Delay (s)	34.5	13.6	7.9	0	-	8.4	0	-	15.4
HCM Lane LOS	D	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.2	0.2	0	-	-	0.1	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	840	20	95	500	200	25	25	75	240	30	120
Future Volume (veh/h)	185	840	20	95	500	200	25	25	75	240	30	120
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	193	875	21	99	521	208	26	26	78	250	31	125
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	1097	26	316	760	304	90	92	192	349	373	317
Arrive On Green	0.05	0.61	0.61	0.04	0.60	0.60	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	1812	43	1774	1267	506	180	460	960	1285	1863	1583
Grp Volume(v), veh/h	193	0	896	99	0	729	130	0	0	250	31	125
Grp Sat Flow(s),veh/h/ln	1774	0	1855	1774	0	1773	1600	0	0	1285	1863	1583
Q Serve(g_s), s	3.4	0.0	29.5	1.7	0.0	22.3	0.0	0.0	0.0	9.9	1.1	5.5
Cycle Q Clear(g_c), s	3.4	0.0	29.5	1.7	0.0	22.3	5.4	0.0	0.0	15.3	1.1	5.5
Prop In Lane	1.00		0.02	1.00		0.29	0.20		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	411	0	1123	316	0	1064	374	0	0	349	373	317
V/C Ratio(X)	0.47	0.00	0.80	0.31	0.00	0.69	0.35	0.00	0.00	0.72	0.08	0.39
Avail Cap(c_a), veh/h	411	0	1123	325	0	1064	374	0	0	349	373	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	12.0	11.6	0.0	10.9	27.7	0.0	0.0	31.7	26.0	27.8
Incr Delay (d2), s/veh	0.8	0.0	5.9	0.6	0.0	3.6	0.6	0.0	0.0	6.8	0.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	16.8	1.0	0.0	11.8	2.5	0.0	0.0	6.1	0.6	2.5
LnGrp Delay(d),s/veh	10.6	0.0	18.0	12.2	0.0	14.5	28.3	0.0	0.0	38.5	26.1	28.6
LnGrp LOS	B		B	B		B	C			D	C	C
Approach Vol, veh/h		1089			828			130			406	
Approach Delay, s/veh		16.7			14.2			28.3			34.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	52.4		20.0	8.0	52.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	3.7	31.5		7.4	5.4	24.3		17.3
Green Ext Time (p_c), s	0.0	10.2		1.5	0.0	12.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	50	15	0	105	75	15	0	15	40	95	0	15	50	5
Future Vol, veh/h	0	10	50	15	0	105	75	15	0	15	40	95	0	15	50	5
Peak Hour Factor	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	52	16	0	109	78	16	0	16	42	99	0	16	52	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9.3	8.4	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	13%	54%	21%
Vol Thru, %	27%	67%	38%	71%
Vol Right, %	63%	20%	8%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	75	195	70
LT Vol	15	10	105	15
Through Vol	40	50	75	50
RT Vol	95	15	15	5
Lane Flow Rate	156	78	203	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.188	0.1	0.26	0.097
Departure Headway (Hd)	4.328	4.603	4.609	4.778
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	828	777	778	749
Service Time	2.358	2.64	2.64	2.813
HCM Lane V/C Ratio	0.188	0.1	0.261	0.097
HCM Control Delay	8.4	8.2	9.3	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	1	0.3

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	10	265	95	15	220	50	85	70	15	65	75	15
Future Vol, veh/h	10	265	95	15	220	50	85	70	15	65	75	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	12	323	116	18	268	61	104	85	18	79	91	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	329	0	0	439	0	0	786	771	381	783	798	299
Stage 1	-	-	-	-	-	-	405	405	-	335	335	-
Stage 2	-	-	-	-	-	-	381	366	-	448	463	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1225	-	-	1116	-	-	309	330	664	310	318	738
Stage 1	-	-	-	-	-	-	620	597	-	677	641	-
Stage 2	-	-	-	-	-	-	639	621	-	588	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1225	-	-	1116	-	-	227	319	664	233	308	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	319	-	233	308	-
Stage 1	-	-	-	-	-	-	612	589	-	668	628	-
Stage 2	-	-	-	-	-	-	522	609	-	483	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	44.8	36.5
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	261	664	1225	-	-	1116	-	-	268	738
HCM Lane V/C Ratio	0.724	0.028	0.01	-	-	0.016	-	-	0.637	0.025
HCM Control Delay (s)	48.1	10.6	8	0	-	8.3	0	-	39.3	10
HCM Lane LOS	E	B	A	A	-	A	A	-	E	B
HCM 95th %tile Q(veh)	5	0.1	0	-	-	0.1	-	-	4	0.1

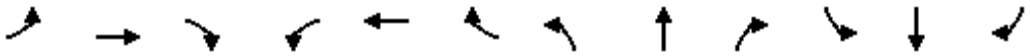
Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	400	15	45	360	5	35
Future Vol, veh/h	400	15	45	360	5	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	426	16	48	383	5	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	441	0	913	434
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1103	-	300	616
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1103	-	284	616
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	583	-

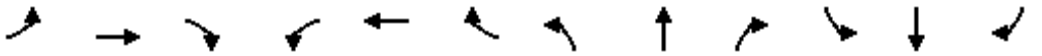
Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	537	-	-	1103	-
HCM Lane V/C Ratio	0.079	-	-	0.043	-
HCM Control Delay (s)	12.3	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



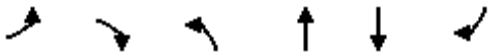
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	465	375	0	0	280	415	115	10	110	0	0	0
Future Volume (vph)	465	375	0	0	280	415	115	10	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7			3.7	3.7	4.1	4.1				
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.86				
Flt Protected	0.95	0.99			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1618	1692			1792	1524	1703	1547				
Flt Permitted	0.95	0.99			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1618	1692			1792	1524	1703	1547				
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)	495	399	0	0	298	441	122	11	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	232	0	104	0	0	0	0
Lane Group Flow (vph)	436	458	0	0	298	209	122	24	0	0	0	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	Split	NA			NA	Perm	Perm	NA				
Protected Phases	6	6			3 5			4				
Permitted Phases						3 5	4					
Actuated Green, G (s)	32.2	32.2			40.6	40.6	10.7	10.7				
Effective Green, g (s)	32.2	32.2			40.6	40.6	10.7	10.7				
Actuated g/C Ratio	0.34	0.34			0.43	0.43	0.11	0.11				
Clearance Time (s)	3.7	3.7					4.1	4.1				
Vehicle Extension (s)	2.0	2.0					2.0	2.0				
Lane Grp Cap (vph)	548	573			765	651	191	174				
v/s Ratio Prot	0.27	c0.27			c0.17			0.02				
v/s Ratio Perm						0.14	c0.07					
v/c Ratio	0.80	0.80			0.39	0.32	0.64	0.14				
Uniform Delay, d1	28.4	28.5			18.7	18.1	40.3	38.0				
Progression Factor	1.00	1.00			0.47	0.94	1.00	1.00				
Incremental Delay, d2	11.4	11.1			0.1	0.1	5.1	0.1				
Delay (s)	39.8	39.6			8.8	17.0	45.4	38.1				
Level of Service	D	D			A	B	D	D				
Approach Delay (s)		39.7			13.7			41.7			0.0	
Approach LOS		D			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	65.8%	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												
Traffic Volume (vph)	0	610	195	145	250	0	0	0	0	230	5	450
Future Volume (vph)	0	610	195	145	250	0	0	0	0	230	5	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		4.0	4.9						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						1.00	0.88
Frt		0.97		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.95	1.00
Satd. Flow (prot)		1784		1752	1845						1759	2760
Flt Permitted		1.00		0.95	1.00						0.95	1.00
Satd. Flow (perm)		1784		1752	1845						1759	2760
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	629	201	149	258	0	0	0	0	237	5	464
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	817	0	149	258	0	0	0	0	0	242	464
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA		Prot	NA					Split	NA	Prot
Protected Phases		2 8		1	6					7	7	7
Permitted Phases												
Actuated Green, G (s)		41.2		9.7	24.0						16.0	16.0
Effective Green, g (s)		41.2		9.7	24.0						16.0	16.0
Actuated g/C Ratio		0.48		0.11	0.28						0.19	0.19
Clearance Time (s)				4.0	4.9						4.9	4.9
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		854		197	514						327	513
v/s Ratio Prot		c0.46		c0.09	0.14						0.14	c0.17
v/s Ratio Perm												
v/c Ratio		0.96		0.76	0.50						0.74	0.90
Uniform Delay, d1		21.5		37.0	26.0						33.0	34.3
Progression Factor		0.79		1.00	1.00						1.00	1.00
Incremental Delay, d2		3.3		15.2	0.8						8.7	19.3
Delay (s)		20.3		52.2	26.8						41.7	53.5
Level of Service		C		D	C						D	D
Approach Delay (s)		20.3			36.1			0.0			49.5	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	285	385	45	35	310
Future Volume (vph)	200	285	385	45	35	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.7
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.96	1.00	1.00
Satd. Flow (prot)	1687	1509		1700	1776	1509
Flt Permitted	0.95	1.00		0.96	1.00	1.00
Satd. Flow (perm)	1687	1509		1700	1776	1509
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	208	297	401	47	36	323
RTOR Reduction (vph)	0	151	0	0	0	280
Lane Group Flow (vph)	208	146	0	448	36	43
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Perm	Split	NA	NA	Perm
Protected Phases	6 4		5	5	3	
Permitted Phases		6 4				3
Actuated Green, G (s)	46.6	46.6		24.2	12.7	12.7
Effective Green, g (s)	46.6	46.6		24.2	12.7	12.7
Actuated g/C Ratio	0.49	0.49		0.25	0.13	0.13
Clearance Time (s)				3.7	3.7	3.7
Vehicle Extension (s)				2.0	2.0	2.0
Lane Grp Cap (vph)	827	740		433	237	201
v/s Ratio Prot	c0.12			c0.26	0.02	
v/s Ratio Perm		0.10				c0.03
v/c Ratio	0.25	0.20		1.03	0.15	0.21
Uniform Delay, d1	14.1	13.6		35.4	36.4	36.7
Progression Factor	0.17	0.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0		52.5	0.1	0.2
Delay (s)	2.4	0.0		87.9	36.5	36.9
Level of Service	A	A		F	D	D
Approach Delay (s)	1.0			87.9	36.9	
Approach LOS	A			F	D	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	420	45	350	395	45	470
Future Volume (veh/h)	420	45	350	395	45	470
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	457	49	380	429	49	511
Adj No. of Lanes	1	1	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	577	490	512	970	628	560
Arrive On Green	0.31	0.31	0.15	0.52	0.35	0.35
Sat Flow, veh/h	1863	1583	3442	1863	1774	1583
Grp Volume(v), veh/h	457	49	380	429	49	511
Grp Sat Flow(s),veh/h/ln	1863	1583	1721	1863	1774	1583
Q Serve(g_s), s	14.4	1.4	6.8	9.2	1.2	19.7
Cycle Q Clear(g_c), s	14.4	1.4	6.8	9.2	1.2	19.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	577	490	512	970	628	560
V/C Ratio(X)	0.79	0.10	0.74	0.44	0.08	0.91
Avail Cap(c_a), veh/h	757	644	861	1340	721	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	15.7	26.0	9.5	13.7	19.7
Incr Delay (d2), s/veh	4.3	0.1	2.1	0.3	0.1	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.6	3.4	4.7	0.6	11.1
LnGrp Delay(d),s/veh	24.5	15.8	28.2	9.9	13.8	35.7
LnGrp LOS	C	B	C	A	B	D
Approach Vol, veh/h	506			809	560	
Approach Delay, s/veh	23.7			18.5	33.8	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		26.6	13.5	23.8				37.3
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		26.0	16.0	26.0				46.0
Max Q Clear Time (g_c+I1), s		21.7	8.8	16.4				11.2
Green Ext Time (p_c), s		1.0	0.8	3.4				5.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	525	370	0	0	305	135	270	0	85	0	0	0
Future Volume (veh/h)	525	370	0	0	305	135	270	0	85	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1937	1937	1900	1863	1863			
Adj Flow Rate, veh/h	597	420	0	0	347	0	307	0	97			
Adj No. of Lanes	1	1	0	0	1	1	0	1	1			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	847	1301	0	0	533	453	357	0	319			
Arrive On Green	0.50	0.93	0.00	0.00	0.28	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	1774	1863	0	0	1937	1647	1774	0	1583			
Grp Volume(v), veh/h	597	420	0	0	347	0	307	0	97			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1937	1647	1774	0	1583			
Q Serve(g_s), s	9.5	1.8	0.0	0.0	12.7	0.0	13.4	0.0	4.2			
Cycle Q Clear(g_c), s	9.5	1.8	0.0	0.0	12.7	0.0	13.4	0.0	4.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	847	1301	0	0	533	453	357	0	319			
V/C Ratio(X)	0.70	0.32	0.00	0.00	0.65	0.00	0.86	0.00	0.30			
Avail Cap(c_a), veh/h	847	1301	0	0	533	453	421	0	376			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.9	0.9	0.0	0.0	25.6	0.0	30.8	0.0	27.2			
Incr Delay (d2), s/veh	1.9	0.5	0.0	0.0	6.1	0.0	14.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.9	1.0	0.0	0.0	7.6	0.0	8.0	0.0	3.9			
LnGrp Delay(d),s/veh	14.8	1.4	0.0	0.0	31.7	0.0	45.2	0.0	27.7			
LnGrp LOS	B	A			C		D		C			
Approach Vol, veh/h		1017			347			404				
Approach Delay, s/veh		9.3			31.7			41.0				
Approach LOS		A			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		59.9		20.1	33.9	26.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		53.0		19.0	27.0	22.0		
Max Q Clear Time (g_c+I1), s		3.8		15.4	11.5	14.7		
Green Ext Time (p_c), s		5.2		0.8	4.2	1.1		

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	715	440	130	445	0	0	0	0	180	5	350
Future Volume (veh/h)	0	715	440	130	445	0	0	0	0	180	5	350
Number	5	2	12	1	6	16				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1937	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	745	0	135	464	0				188	5	365
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1091	965	402	1281	0				377	5	333
Arrive On Green	0.00	0.59	0.00	0.10	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	1863	1647	1774	1863	0				1774	21	1565
Grp Volume(v), veh/h	0	745	0	135	464	0				188	0	370
Grp Sat Flow(s),veh/h/ln	0	1863	1647	1774	1863	0				1774	0	1587
Q Serve(g_s), s	0.0	22.1	0.0	2.3	0.0	0.0				7.5	0.0	17.0
Cycle Q Clear(g_c), s	0.0	22.1	0.0	2.3	0.0	0.0				7.5	0.0	17.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		0.99
Lane Grp Cap(c), veh/h	0	1091	965	402	1281	0				377	0	337
V/C Ratio(X)	0.00	0.68	0.00	0.34	0.36	0.00				0.50	0.00	1.10
Avail Cap(c_a), veh/h	0	1091	965	444	1281	0				377	0	337
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.42	0.00	0.78	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	0.0	8.8	0.0	0.0				27.7	0.0	31.5
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.4	0.6	0.0				1.0	0.0	77.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.6	0.0	1.2	0.2	0.0				3.8	0.0	14.7
LnGrp Delay(d),s/veh	0.0	12.9	0.0	9.2	0.6	0.0				28.8	0.0	109.3
LnGrp LOS		B		A	A					C		F
Approach Vol, veh/h		745			599						558	
Approach Delay, s/veh		12.9			2.6						82.1	
Approach LOS		B			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.1	50.9				59.0		21.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	45.0				55.0		17.0
Max Q Clear Time (g_c+I1), s	4.3	24.1				2.0		19.0
Green Ext Time (p_c), s	0.1	8.4				10.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	31.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	55	310	0	0	365	280	290	5	255	0	0	0
Future Vol, veh/h	55	310	0	0	365	280	290	5	255	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	323	0	0	380	292	302	5	266	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	672	0	-	-	-	0	964	1110	323
Stage 1	-	-	-	-	-	-	438	438	-
Stage 2	-	-	-	-	-	-	526	672	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	919	-	0	0	-	-	~ 283	209	718
Stage 1	-	-	0	0	-	-	651	579	-
Stage 2	-	-	0	0	-	-	593	454	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	919	-	-	-	-	-	~ 261	0	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 261	0	-
Stage 1	-	-	-	-	-	-	602	0	-
Stage 2	-	-	-	-	-	-	593	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.4	0	88
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	261	718	919	-	-	-
HCM Lane V/C Ratio	1.177	0.37	0.062	-	-	-
HCM Control Delay (s)	153	12.9	9.2	0	-	-
HCM Lane LOS	F	B	A	A	-	-
HCM 95th %tile Q(veh)	14	1.7	0.2	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	130.5

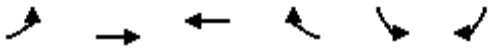
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	155	265	280	375	0	0	0	0	210	5	45
Future Vol, veh/h	0	155	265	280	375	0	0	0	0	210	5	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	170	291	308	412	0	0	0	0	231	5	49

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	462	0	0	1343	1489	412
Stage 1	-	-	-	-	-	-	1027	1027	-
Stage 2	-	-	-	-	-	-	316	462	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1099	-	0	~ 168	124	640
Stage 1	0	-	-	-	-	0	345	312	-
Stage 2	0	-	-	-	-	0	739	565	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1099	-	-	~ 107	0	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 107	0	-
Stage 1	-	-	-	-	-	-	~ 220	0	-
Stage 2	-	-	-	-	-	-	739	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.1	$ 659.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1099	-	125
HCM Lane V/C Ratio	-	-	0.28	-	2.286
HCM Control Delay (s)	-	-	9.5	0	$ 659.7
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	1.2	-	24.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	215	675	565	135	130	180
Future Volume (vph)	215	675	565	135	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	4.9		4.9	4.9
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3437		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3437		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	226	711	595	142	137	189
RTOR Reduction (vph)	0	0	24	0	0	153
Lane Group Flow (vph)	226	711	713	0	137	36
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6 7		8	
Permitted Phases						8
Actuated Green, G (s)	11.0	24.9	40.0		16.3	16.3
Effective Green, g (s)	11.0	24.9	40.0		16.3	16.3
Actuated g/C Ratio	0.13	0.29	0.47		0.19	0.19
Clearance Time (s)	4.0	5.3			4.9	4.9
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	226	539	1598		335	300
v/s Ratio Prot	0.13	c0.38	c0.21		c0.08	
v/s Ratio Perm						0.02
v/c Ratio	1.00	1.32	0.45		0.41	0.12
Uniform Delay, d1	37.5	30.6	15.5		30.6	28.9
Progression Factor	1.00	1.00	0.09		1.00	1.00
Incremental Delay, d2	59.9	156.3	0.1		0.8	0.2
Delay (s)	97.4	186.8	1.6		31.4	29.1
Level of Service	F	F	A		C	C
Approach Delay (s)		165.3	1.6		30.1	
Approach LOS		F	A		C	

Intersection Summary			
HCM 2000 Control Delay	82.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	19.1
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group