Tierra Robles

Traffic Impact Study

Prepared for:

Shasta, Red, LLC

Prepared by:

omni · means
ENGINEERING SOLUTIONS

TIERRA ROBLES
TRAFFIC IMPACT STUDY

Prepared For:
SHASTA RED, LLC
9595 WILSHIRE BLVD, SUITE #1000
BEVERLY HILLS, CA 90212

Prepared By:
OMNI-MEANS, LTD.
330 HARTNELL AVENUE, SUITE B
REDDING, CA 96002
(530) 242 1700

MAY 2015

45-6505-01
R987TS003.docx

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDIX

Introduction

This updated report has been prepared for Shasta Red, LLC to present the results of a Transportation Impact Study (TIS) performed by Omni-Means for the proposed Tierra Robles development located on Boyle Road, near Rocky Road, in Shasta County. Figure 1 illustrates the project location and vicinity map.

Included in this report is a description of the existing transportation setting, including the current AM and PM peak hour traffic operations at key intersections and roadways, which were selected for analysis through consultations with Shasta County. In addition, this report includes an analysis and discussion of the following items:

- Quantification of the trip generation and trip distribution associated with the proposed project, and the resulting impacts on existing AM and PM intersection and daily roadway segment operations, assuming other regional approved/pending projects are in place.
- The projected cumulative (Year 2035) base intersection and daily roadway segment operations with and without the development of the proposed project.
- Potential base improvements and project-related mitigation measures that are needed to alleviate unacceptable levels of traffic impacts at the study intersections and roadway segments, under conditions both without and with the development of the proposed project.

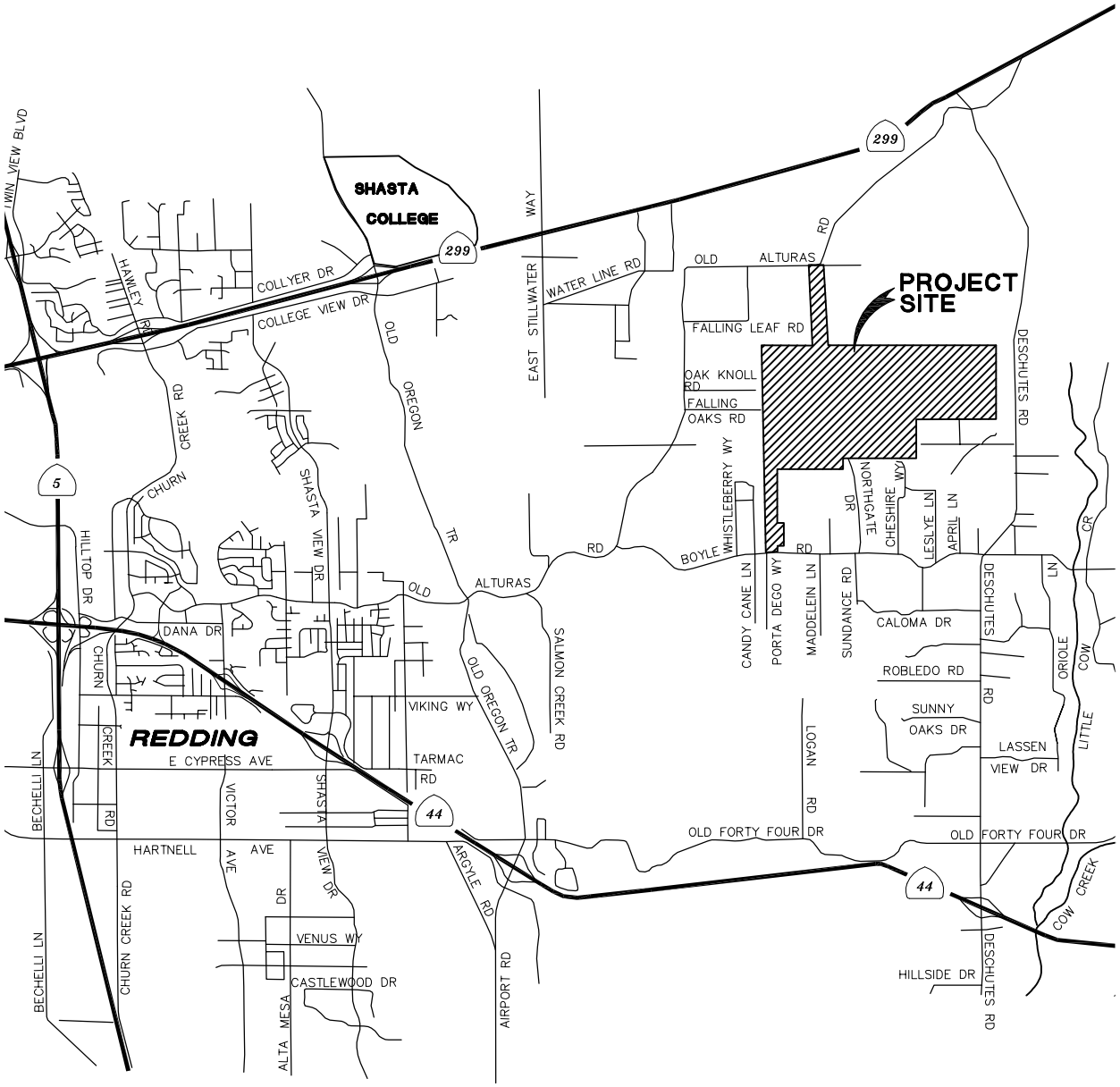
The following traffic scenarios are analyzed as a part of this report:

- *Existing* Conditions
- *Existing Plus Project* Conditions
- *Year 2035 No Project* Conditions
- *Year 2035 Plus Project* Conditions

Existing conditions analyze traffic conditions as they are on the ground today using current traffic counts and intersection configurations. *Existing Plus Project* conditions represents current conditions if the proposed Tierra Robles project were in place today. Trips generated by the project are added to existing traffic counts and intersections configurations remain the same.

Year 2035 No Project conditions refer to analysis scenarios that would exist following approximately twenty year of development in the greater Redding area and Shasta County. The *Year 2035 No Project* conditions scenarios will be forecasted using Shasta County Regional Traffic Model. The *Year 2035 Plus Project* conditions is the analysis scenario in which traffic impacts associated with the Project are investigated in comparison to the *Year 2035 NO Project* condition scenario.

The above traffic scenarios are described in further detail and evaluated in subsequent sections of this report.



Tierra Robles TIAR

Figure 1

Project Location Map

Project Setting

Shasta County covers approximately 3,775 square miles in northern California, and per Census 2013, the population in Shasta County is 179,137 approximately. The City of Redding is the closest major city covering approximately 60 square miles in Shasta County, California. The City of Redding is located along Interstate 5, and per Census 2013, the population in Redding is 91,119 approximately.

Transportation System

Roadways that provide primary circulation in the vicinity of the project site are as follows:

Boyle Road is an east-west facility that runs from Old Alturas Road to Deschutes Road. Boyle Road has a two-lane cross-section.

Deschutes Road is a north-south facility that extends from SR 299 to the north to I-5 to the south. Deschutes Road is two-lane in the project vicinity.

Old Alturas Road is an east-west collector that runs north of and approximately parallel to SR 44. Old Alturas Road has a two-lane cross-section.

Old Oregon Trail is a north-south collector that runs east of and approximately parallel to Airport Road. Old Oregon Trail has a two-lane cross-section.

Shasta View Drive is a two to four-lane, north-south arterial/collector street that runs between Rancho Road and College View Drive. The southerly extension of Shasta View Drive, from Rancho Road to Airport Road, and the northerly extension, from College View Drive to the City of Shasta Lake, has been conceptually indicated in the current City of Redding General Plan circulation system. In the project vicinity Shasta View Drive is a two-lane arterial.

State Route 44 (SR 44) is an interregional highway that runs in an east-west direction linking the City of Redding with Lassen County. SR 44 begins at SR 273 in the City of Redding and extends eastwards towards the City of Susanville in Lassen County. SR 44 forms a full-access interchange with Shasta View Drive. SR 44 has a four-lane divided cross-section through the Shasta View Drive interchange.

State Route 299 (SR 299) is an interregional highway that begins at US 101 in Humboldt County and traverses east through Humboldt, Trinity, Shasta, and Modoc Counties. SR 299 forms a full-access interchange with Churn Creek Road. SR 44 has a four-lane divided cross-section through the Churn Creek Road interchange.

Study Intersections and Roadway Segments

Study Intersections

The following study intersections, which were established through consultations with County and Caltrans staff, will be included for existing, short-term and long-term traffic impact analysis, for conditions both without and with the proposed project for weekday AM and PM peak-hour conditions:

1. Deschutes Road/State Route 299

2. Deschutes Road/Old Alturas Road
3. Old Alturas Road/Seven Lakes Road
4. Old Alturas Road/Shasta View Drive
5. Shasta View Drive/Tarmac Road
6. Shasta View Drive/SR 44 WB Ramps
7. Shasta View Drive/SR 44 EB Ramps
8. Old Alturas Road/Old Oregon Trail
9. Old Oregon Trail/Old 44 Drive
10. Airport Road/SR 44 WB Ramps
11. Airport Road/SR 44 EB Ramps
12. Old Alturas Road/Boyle Road
13. Boyle Road/Deschutes Road
14. Deschutes Road/Old 44 Drive
15. Deschutes Road/Cedro Lane
16. Deschutes Road/SR 44 WB Ramps
17. Deschutes Road/SR 44 EB Ramps

Roadway Segments

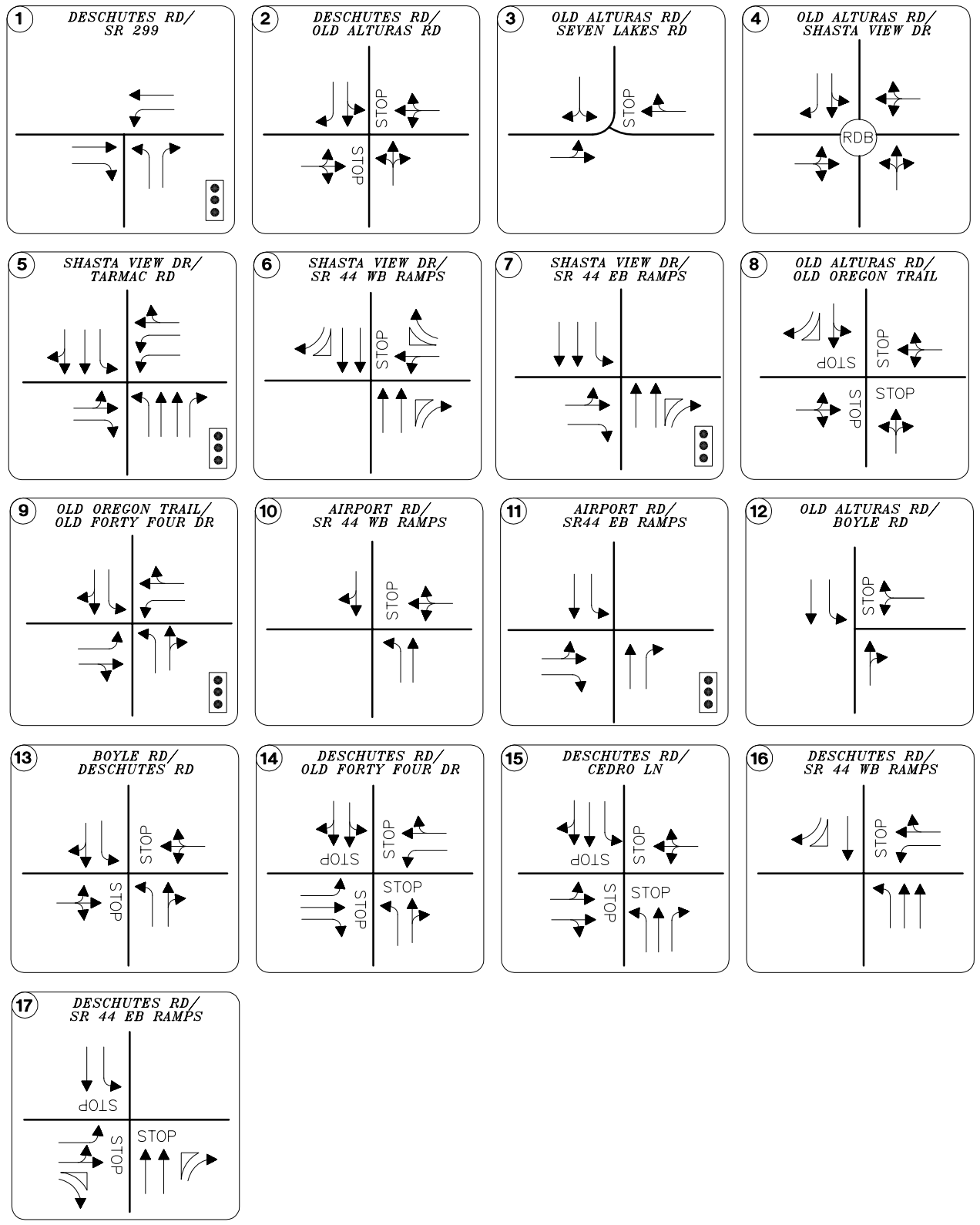
The following roadway segments were also selected in coordination with the City of Redding staff and Caltrans for analysis within this study and will be included for analysis within this study on a weekday daily basis for existing, short-term and long-term traffic conditions both without and with the proposed project:

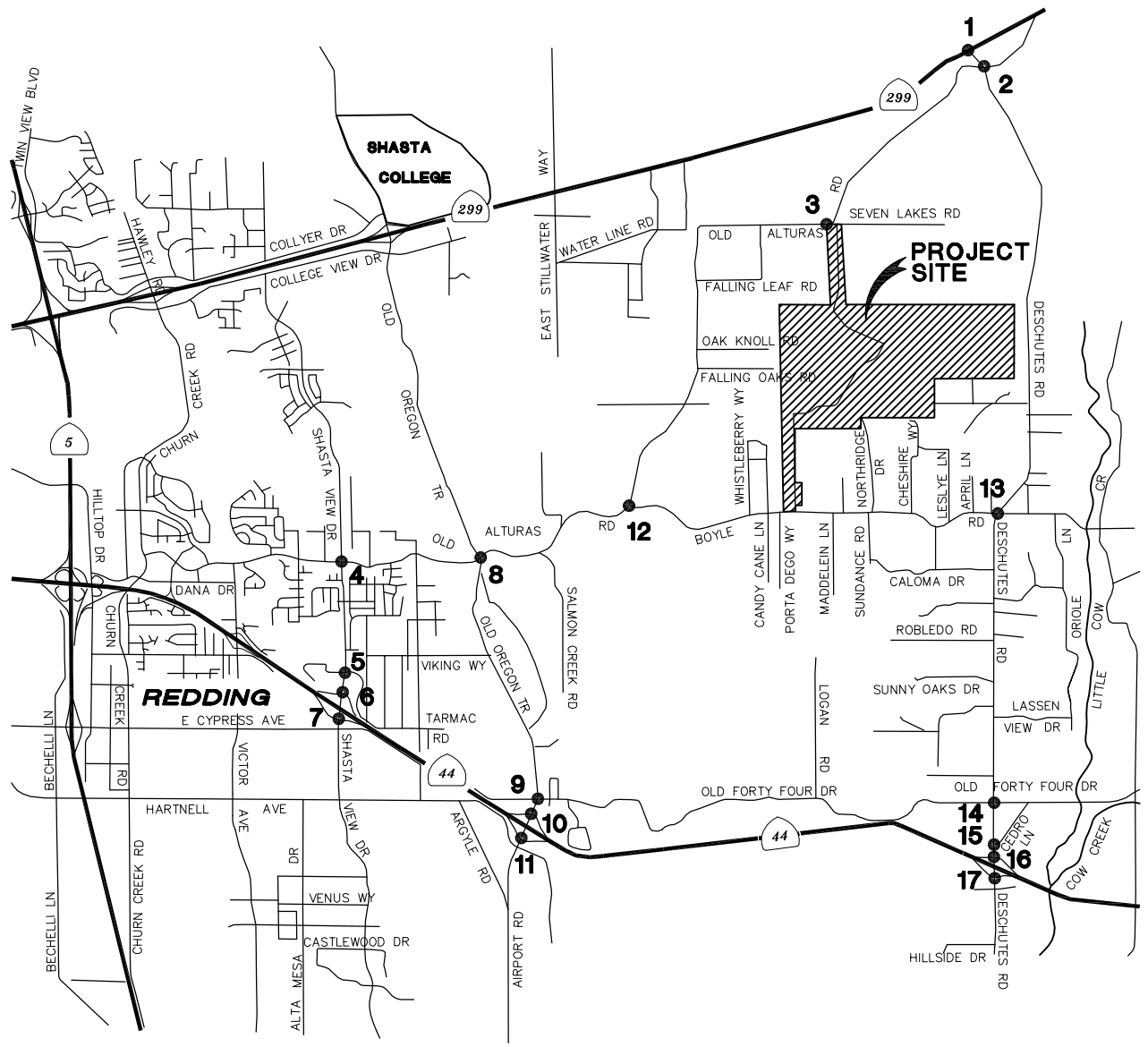
1. Old Alturas Road (just west of Deschutes Road) – 2 lane collector
2. Old Alturas Road (just north of Boyle Road) – 2 lane collector
3. Old Alturas Road (just east of Shasta View Drive) – 2 lane collector
4. Old Alturas Road (between Old Oregon Trail and Boyle Road) – 2 lane arterial
5. Boyle Road (just west of Deschutes Road) – 2 lane collector
6. Shasta View Drive (just north of Tarmac Road) – 3 lane arterial
7. Old Oregon Trail (just north of Old 44 Drive) – 2 lane collector
8. Deschutes Road (just north of Old 44 Drive) – 2 lane arterial

Data Collection

For all study intersections, existing weekday AM and PM peak hour counts were conducted by Omni-Means on a Wednesday, February 06, 2013. Schools in the area were in session and no known special events were occurring in the area at the time of the traffic counts. No precipitation or otherwise inclement weather was recorded on the collection dates. All intersections are analyzed during the weekday AM and PM peak hour period. The AM peak hour is defined as the one continuous hour of peak traffic flow counted between 7 AM and 9 AM. The PM peak hour is defined as the one continuous hour of peak traffic flow counted between 4 PM and 6 PM.

For all roadway segments, existing average daily traffic (ADT) counts were collected by Omni-Means on Thursday, April 23, 2015. Schools in the area were in session and no known special events were occurring in the area at the time of the traffic counts. No precipitation or otherwise inclement weather was recorded on the collection dates. All roadway segments were analyzed on a daily basis. Figure 2 presents the existing intersection lane geometrics and intersection control types. Figure 3 presents the existing traffic volumes at the seventeen study intersections for AM and PM peak hour conditions.

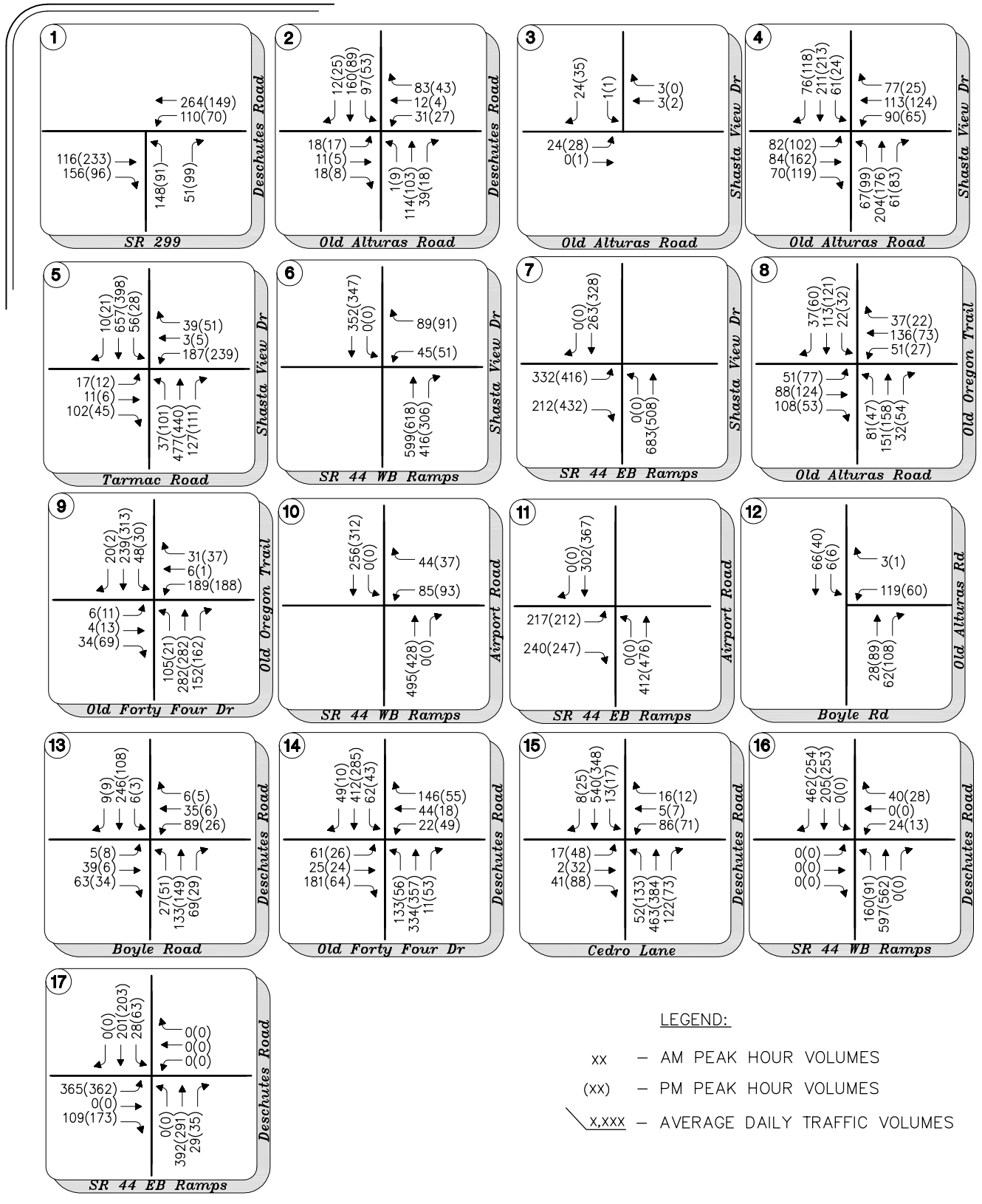




Tierra Robles TIAR

Figure 2

Existing Lane Geomtrics & Control

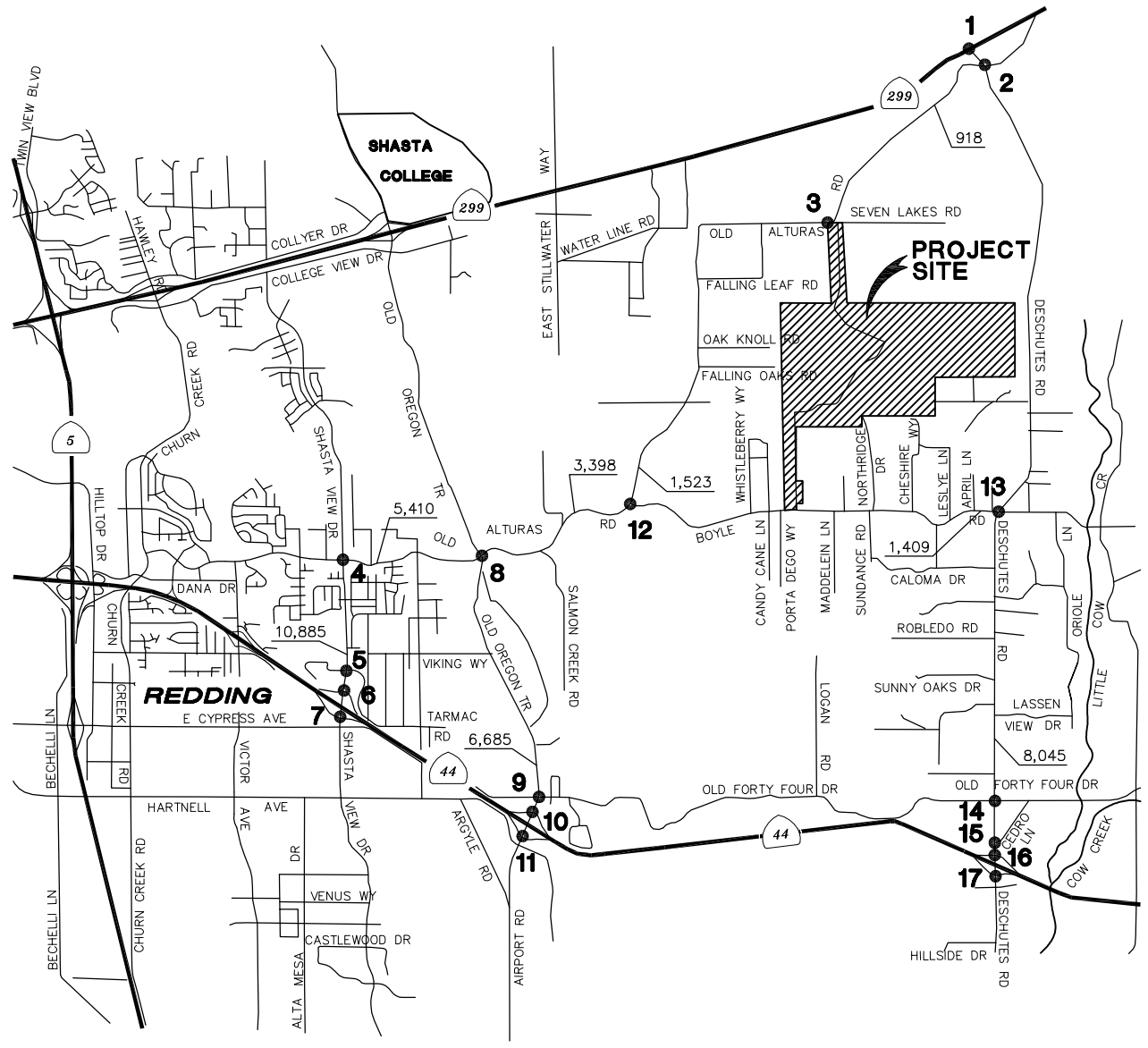


LEGEND:

xx – AM PEAK HOUR VOLUMES

(xx) – PM PEAK HOUR VOLUMES

x,xxx – AVERAGE DAILY TRAFFIC VOLUMES



Tierra Robles TIAR

Figure 3

Existing Intersection Traffic Volumes

5/10/2013 9:33 AM J:\PRJ\987\T987\GRAPHICS FOR REPORT 2013\T987TG003.DWG

45-6506-01

Pedestrian Facilities

Off-Site

The County collectors/arterials including Old Alturas Road, Boyle Road and Deschutes Road in the immediate project vicinity do not have pedestrian facilities. The pedestrian activities will be very light on stated collectors/arterials due to the lack of commercial and employment centers in the immediate project vicinity and the distances to area schools are more than 2 miles. Therefore, pedestrians will need to be accommodated on paved shoulders on Old Alturas Road, Boyle Road and Deschutes Road at an undetermined time in the future. Shasta County will use its Major Road Impact Fee Program to implement the necessary improvements.

On-Site

The implementation of the County's development standards will meet the transportation needs of pedestrians. The on-site trail system will be used preliminary by project residents and will not result in significant traffic or parking needs.

Bicycle Facilities

The County of Shasta is the lead agency to provide a safe and efficient regional system of bicycle routes for commuter, school, and recreational use for the unincorporated areas of Shasta County. Within Shasta County, the study identifies existing bike facilities with classifications from the Department of Transportation.

> *"Class I Bike Paths are completely separated right-of-ways designated for the exclusive use of bicycles. Cross-flows by pedestrians and motorized vehicles are minimized."*
>
> *"Class II Bike Lanes are restricted right-of-ways designated for the exclusive or semi-exclusive use of bicycles. Travel by motor vehicles or pedestrians are not allowed; except for vehicle parking and cross flows. In most cases, Class II Bikeways require a lane of at least four feet of well-maintained pavement for the cyclist to ride on."*
>
> *"Class III Bike Routes are shared right-of-ways either on the street or on the sidewalk, and are designated by signs placed on vertical posts or markings stenciled on the pavement. Any bikeway which shares a through-traffic right-of-way with motor vehicles and pedestrians is considered a Class III bikeway."*

Off-Site

As per the Shasta County 2010 Bicycle Transportation Plan, bicycles are allowed on SR 299, east of Old Oregon Trail, and on SR 44, east of Shasta View Drive. Class II bike lanes are proposed along Deschutes Road between SR 299 and Balls Ferry Road, on Old Alturas Road west of Old Oregon Trail, and on Old Oregon Trail.

As per the City of Redding's Bikeway Action Plan 2010-2015, Class II bike lanes exists on Shasta View Road between Hemingway Street and Tarmac Road. Class II bike lanes are proposed for remaining segment of Shasta View Drive. Class II bike lanes are also proposed on

Old Oregon Trail continuing to Airport Road, Tarmac Road and Old Alturas Road in the City of Redding.

The County collectors/arterials including Old Alturas Road, Boyle Road and Deschutes Road in the immediate project vicinity do not have bicycle facilities. However the needs of bicycle facilities will be met with future additions of paved shoulders on these collectors/arterials. The bicycle activities will be very light on stated collectors/arterials due to the lack of commercial and employment centers in the immediate project vicinity and the distances to area schools are more than 2 miles. Therefore, bicyclist will need to be accommodated on paved shoulders on Old Alturas Road, Boyle Road and Deschutes Road at an undetermined time in the future. Shasta County will use its Major Road Impact Fee Program to implement the necessary improvements. The Shasta County 2010 Bicycle Transportation Plan shows that Class II bike lanes are proposed on Deschutes Road and Old Alturas Road in Shasta County.

The County's major Road Impact Fee Program identifies the following improvements to be constructed when the individual improvements become a priority:

1. Boyle Road: Add shoulders and some realignment from Old Alturas Road to Deschutes Road.
2. Old Alturas Road: Realign and add shoulders from north of Boyle Road to State Route 299 East.
3. Deschutes Road: Widen and add two way left turn pockets and shoulders from Berkeley Drive to Boyle Road; install signal at Rhonda Road.

On-Site

The implementation of the County's development standards will meet the transportation needs of bicyclists.

Transit Services

Existing transit service is provided primarily by the Redding Area Bus Authority (RABA). RABA provides fixed route service, express route service and demand response service to the general public within the urbanized area of the Shasta County. RABA operates 14 fixed routes within the Cities of Redding, Shasta Lake and Anderson, none of which operate in the immediate vicinity of the project site.

The nearest RABA bus stop is approximately 3 miles away from the project site, so potential future bus stops in accordance with County development standards and dedicated sufficient right of way should be provided to accommodate future constriction of the bus stops, if deemed necessary.

Safety Performance

Off-Site

An off-site pedestrian, bicycle, and motorized vehicle safety review is conducted on Old Alturas Road, Boyle Road, and Deschutes Road in the immediate project vicinity, based on historical collision data and a field review. The five-year historical collision data is from 1/1/2009 to 12/31/2013 and obtained from the Statewide Integrated Traffic Records System (SWITRS), maintained by the California Highway Patrol (CHP).

Based on the five-year SWITRS data, 41 collisions have occurred along Old Alturas Road, 7 collisions have occurred along Boyle Road, and 101 collisions have occurred along Deschures Road. Table 1 provides a summary of the collisions along the roadways by year. Table 2 provides a summary of the collisions by collision type.

TABLE 1
COLLISIONS BY YEAR

Row Labels	2009	2010	2011	2012	2013	Grand Total
BOYLE RD	2	1		2	2	7
DESCHUTES RD	21	21	22	17	20	101
OLD ALTURAS RD	12	12	5	5	7	41
Grand Total	**35**	**34**	**27**	**24**	**29**	**149**

TABLE 2
COLLISIONS BY TYPE

Row Labels	BOYLE RD	DESCHUTES RD	OLD ALTURAS RD	Grand Total
Broadside	2	28	6	36
Head-On	1	4	1	6
Hit Object	4	19	17	40
Not Stated			1	1
Other		1	2	3
Overturned		6	7	13
Rear End		39	4	43
Sideswipe		4	3	7
Grand Total	**7**	**101**	**41**	**149**

As shown in Table 1, the number of collisions along these corridors has declined since 2009, with Deschutes Road consistently having the most collisions. Between 2009 and 2013, the number of collisions along Old Alturas Road has reduced by about half, while Boyle Road and Deschutes Road collisions amount remain about the same annually. As shown in Table 2, the rear end collision type had the highest amount, next to hit object collisions and broadside collisions. There were no collisions reported involving pedestrians or bicyclists. There were no fatalities reported, and there were 90 injuries over the five year period. There were 10 injuries involving alcohol, and 20 collisions total in which alcohol was involved.

Collision rates were calculated for segments along Old Alturas Road, Boyle Road, and Deschutes Road, in terms of "accidents per million vehicle miles traveled". The collision rates are based on the number of collisions, the average daily traffic (ADT) volumes (April, 2015), and the length of the segment, and the following equation:

$$Collision\ Rate\ = \frac{(\text{Number of Collisions}) \text{ x } (1{,}000{,}000)}{\text{Vehicle Miles Traveled}}$$

The calculated collision rates were compared with statewide average rates compiled by the California Department of Transportation (Caltrans) as published in their most recent document 2011 Collision Data on California State Highways[1]. The document provides basic average accident rates for various types of roadways and intersections categorized by number of lanes, travel speed, etc., and are derived from the California Statewide Integrated Traffic Records System (SWITRS). Table 3 presents the collision rates for segments along roadways in the immediate project vicinity.

TABLE 3
COLLISION RATES FOR SEGMENTS

Segments	Length (mi)	# of Collisions	2015 ADT	COLLISION RATE (ACC/MVM)	Statewide Basic Average Rate
OLD ALTURAS ROAD					
Deschutes Rd to 7 Lakes Rd	1.6	6	1,046	**1.96**	1.47
7 Lakes Rd to Boyle Rd	3.0	6	1,750	0.63	1.02
Boyle Rd to Old Oregon Trl	1.2	9	4,197	**0.98**	0.90
Old Oregon Trl to Shasta View Dr	1.0	12	5,982	1.10	2.39
Total	**6.8**	**33**			
BOYLE ROAD					
Deschutes Rd to Old Alturas Rd	2.7	5	1,456	0.70	1.38
Deschutes Road					
SR 244 to Boyle Rd	3.4	28	8,495	0.53	0.86
Boyle Rd to SR 44	2.5	46	8,495	**1.19**	0.86
Total	**5.9**	**74**	8,495	0.81	0.86

As shown in Table 3, there are three segments where the collision rate is higher than the statewide average rate. On Old Alturas Road between Deschutes Road and 7 Lakes Road, between Boyle Road and Old Oregon Trail, and on Deschutes Road between Boyle Road and SR 44 the calculated collision rates exceed the statewide basic average rate for the roadway segments. These locations are further analyzed to determine if the project will have a significant impact.

The field review, conducted by an Omni-Means Traffic Engineer on May 5, 2015, supplements the collision data.

Old Alturas Road (Deschutes Rd to 7 Lakes Rd):

This section of roadway is curvilinear and narrow with roadside obstructions.

This section of rural roadway has a collision rate 33% higher than the statewide average for similar facilities. Of the 6 reported collisions, the primary collision factors are summarized as follows:

- 2 – DUI
- 1 - Hitting an Animal

[1] California Department of Transportation 2011 Collision Data on California State Highways (road miles, travel, collisions, collision rates), Division of Traffic Operations, Sacramento, CA.

- 1 – Unsafe Speed
- 2 – Improper Turn

It is estimated that 17% of the project traffic will use this section of roadway which will increase the ADT by 27% in the Existing Plus Project conditions and by 23% in the Year 2035 Plus Project conditions.

The increase in traffic, in combination with the overall very low traffic volumes and LOS A conditions (documented in a subsequent section of this report), is not expected to significantly increase the rate of collisions.

Old Alturas Road (Boyle Rd to Old Oregon Trail):

This section of roadway is modern with good alignment, lane widths, shoulders and roadside conditions.

The collision rate is 9% higher than the statewide average for similar facilities. Of the 9 reported collisions, the primary collision factors are summarized as follows:

- 2 – DUI
- 2 – Unsafe Speed
- 1 – Hitting an Animal
- 4 – Improper Turn

It is estimated that 61%-62% of the project traffic will use this section of roadway which will increase the ADT by 24% in the Existing Plus Project conditions and by 22% in the Year 2035 Plus Project conditions.

A collision rate 9% higher than the statewide average for similar facilities is not statistically significant and is considered to be within a normal and expected range.

The increase in traffic, in combination with the LOS A conditions (documented in a subsequent section of this report) and the modern roadway, is not expected to significantly increase the rate of collisions.

Deschutes Road (Boyle Rd to SR 44):

This section of roadway has good horizontal alignment, vertical alignment and sight distances. However, the shoulders are narrow, the roadside environment has numerous obstructions and there are numerous driveways and low-volume road connections.

The collision rate is 38% higher than the statewide average for similar facilities. Of the 46 reported collisions, the primary collision factors are summarized as follows:

- 3 – DUI
- 27 – Unsafe Speed
- 2 – Hitting an Animal
- 4 – Improper Turn
- 9 – Failure to Grant R/W to Another Automobile (Includes Collisions at a Traffic Signal)
- 1 – Unsafe Lane Change

Eighty-Five (85%) percent of the collisions were during daylight conditions and 56% were rear-end collisions.

The combination of unsafe speed and the congested roadside with numerous driveways and minor road connections results in a high number of rear-end collisions.

Just south of Boyle Road, it is estimated that 15% of the project traffic will use this section of roadway which will increase the ADT by 5% in both the Existing Plus Project and Year 2035 Plus Project conditions. Just north of SR 44, it is estimated that 7% of the project traffic will use this section of roadway which will increase the ADT by 1% in both the Existing Plus Project and Year 2035 Plus Project conditions.

Recommendations

Old Alturas Road (Deschutes Rd to 7 Lakes Rd):

None.

Old Alturas Road (Boyle Rd to Old Alturas Rd):

None.

Deschutes Road (Boyle Rd to SR 44):

Installation of the following is recommended for both the Existing and Existing Plus Project conditions (Refer to the Mitigations section for Cumulative recommendations):

- Caltrans standard W2 intersection warning signs with W16-8P advance street name plaques at Lassen View Drive, Beryl Drive, Sunny Oaks Drive, Wesley Drive, Robledo Road, Oak Meadow Road, Oak Tree Lane, and Coloma Drive.

On-Site

The on-site pedestrian, bicycle and motorized vehicle safety will be addressed through the County's development standards. The standards include grades, intersections, alignment, sight distances etc.

Analysis Methodologies and Parameters

Level-of-Service Methodologies & Policies

Traffic operations have been quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions.

Levels-of-Service have been calculated for all intersection control types using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Fifth Edition, 2010*. For signalized intersections and all-way-stop-controlled (AWSC) intersections, the intersection delays and Levels-of-Service are average values for all intersection movements. For two-way-stop-controlled (TWSC) intersections, the intersection delays and Levels-of-Service are representative of those for the worst-case movement.

The average daily traffic based roadway Level-of-Service thresholds are shown in Table 4. Level-of-Service criteria for different types of intersection control are outlined in Table 5. The LOS definitions shown in these tables are used in the traffic study.

TABLE 4
LEVEL OF SERVICE (LOS) CRITERIA FOR ROADWAYS

Roadway Type	Average Daily Traffic (ADT) – Total of Both Directions				
	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
6-Lane Freeway	75,000	90,000	105,000	120,000	135,000
4-Lane Freeway	50,000	60,000	70,000	80,000	90,000
6-Lane Expressway (high access control)	36,000	42,000	48,000	54,000	60,000
4-Lane Expressway (high access control)	24,000	28,000	32,000	36,000	40,000
6-Lane Divided Arterial (with left-turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Divided Arterial (with left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Arterial (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Arterial (no left-turn lane)	9,000	10,500	12,000	13,500	15,000
4-Lane Collector	12,000	15,000	18,000	21,000	24,000
2-Lane Collector	6,000	7,500	9,000	10,500	12,000

Notes: 1. Based on Highway Capacity Manual, Fifth Edition, Transportation Research Board, 2010.
2. All volume thresholds are approximate.

TABLE 5
LEVEL OF SERVICE (LOS) CRITERIA FOR INTERSECTIONS

LEVEL OF SERVICE	TYPE OF FLOW	DELAY	MANEUVERABILITY	STOPPED DELAY/VEHICLE (SEC)		
				SIGNALIZED	ROUNDABOUT	STOP CONTROL
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 and ≤ 20.0	>10 and ≤ 15.0	>10 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 and ≤ 35.0	>15 and ≤ 25.0	>15 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 and ≤ 55.0	>25 and ≤ 35.0	>25 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 and ≤ 80.0	>35 and ≤ 50.0	>35 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

References: Highway Capacity Manual 2010

Caltrans LOS Guidelines

The Caltrans published *Guide for the Preparation of Traffic Impact Studies* (dated December 2002) states the following:

"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 be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."

Shasta County LOS Policy

The Shasta County *General Plan Circulation Element*[2] as amended through September 2004 was referenced to establish level of service methodologies for the proposed project. Specifically, policies C-6k and C-6l which are quoted below:

- ***Policy C-6k**: Shasta County shall adopt the following LOS standards for considering any new roads:*
  - *Rural arterial and collectors – LOS C*
  - *Urban/Suburban arterials and collectors – LOS C*
- ***Policy C-6l**: New development which may result in exceeding LOS E on existing facilities shall demonstrate that all feasible methods of reducing travel demand have been attempted to reach LOS C. New development shall not be approved unless traffic impacts are adequately mitigated. Such mitigation may take the form of, but not limited to the following:*
  - *Provision of capacity improvements to the specific road link to be impacted, the transit system, or any reasonable combination;*
  - *Provision of demand reduction measures included as part of the project design or project operation or any feasible combination.*
- ***Policy C-11e**: The County shall assess fees on new development to address the impact of additional development on the County's transportation system.*

City of Redding LOS Policy

The *City of Redding General Plan Transportation Element* (Adopted October 3, 2000) Policy T1A consistent with Level of Service Standards stated in *City of Redding TIA Guidelines* is quoted below:

Establish the following peak hour LOS standards for transportation planning and review. They reflect the special circumstances of various areas of the community …

- *Use LOS" C" – "acceptable delays" – for most arterial streets and their intersections.*
- *Use LOS "D" – "tolerable delays" – for the Downtown area where vitality, activity, and pedestrian and transit use are primary goals.*
- *Use LOS "D" – tolerable delays – for streets within the State Highway System and*

[2] http://www.co.shasta.ca.us/Resource_Management/docs/74circ.sflb.ashx

interchanges.

- *Use LOS "D" – tolerable delays – for river-crossing street corridors whose capacity is affected by adjacent intersections."*

Since the acceptable LOS varies for the roadway facilities in County, City and Caltrans jurisdiction a detailed acceptable LOS of service as per jurisdiction is provided in following section Significance and Mitigation Threshold.

Significance and Mitigation Threshold

For facilities in the unincorporated County (and not owned by Caltrans) following significance threshold will be used:

Roadways:

- An existing segment that operates acceptable (LOS A through LOS E) without the project is degraded to an unacceptable LOS F due to the addition of the project traffic.
- A roadway segment that operates at unacceptable LOS F without the project experiences an increase in its daily volumes to capacity ratio (V/C) of 0.05 or greater due to the addition of the project traffic.

Intersections:

- An existing intersection that operates acceptable (LOS A through LOS E) without the project is degraded to an unacceptable LOS F due to the addition of the project traffic.
- A roadway segment that operates at unacceptable LOS F without the project experiences an increase of 5.0 or more seconds of delay due to the addition of the project traffic.

For facilities in the City of Redding limit or owned by Caltrans following significance threshold will be used:

Roadways:

- An existing segment that operates acceptable (LOS A through LOS C) without the project is degraded to an unacceptable LOS D or worse due to the addition of the project traffic.
- A roadway segment that operates at unacceptable LOS D or worse without the project experiences an increase in its daily volumes to capacity ratio (V/C) of 0.05 or greater due to the addition of the project traffic.

Intersections:

- An existing intersection that operates acceptable (LOS A through LOS C) without the project is degraded to an unacceptable LOS D or worse due to the addition of the project traffic.
- A roadway segment that operates at unacceptable LOS D or worse without the project experiences an increase of 5.0 or more seconds of delay due to the addition of the project traffic.

Technical Analysis Parameters

The traffic study would generally provide a "preliminary operational level" evaluation of traffic operating conditions. The evaluation will, however, incorporate appropriate heavy vehicle adjustment factors, peak-hour factors, and signal lost-time factors, etc. The *Synchro 8.0* (Trafficware) software suites will be used to implement the HCM-2010 analysis methodologies at intersections. The intersection at Old Alturas Road and Shashta View Drive which is a roundabout controlled intersection will be analyzed using *SIDRA 5.1*.

The specific technical analysis parameters that will be used for this study are presented in Table 6.

TABLE 6
INTERSECTION TECHNICAL ANALYSIS PARAMETERS

Technical Parameters (1)	All Intersections
Grade	Level
% Trucks	Varies
Peak-Hour Factor – Existing Conditions	Varies
Peak-Hour Factor – Year 2035 Conditions	0.92
Minimum Signal Cycle Length[2]	80 sec
Lost Time Per Critical Signal Phase	4 sec
Left-Turn Critical Lane Volume[3] – Existing Conditions	1,710 vph
Left-Turn Critical Lane Volume[3] – Year 2035 Conditions	1,900 vph
Pedestrian Calls Per Hour	5

Notes: 1. Computer software defaults will be used for parameters not listed

2. Signal timings as obtained from Caltrans will be used for selected intersections

3. Will be optimized as appropriate

A "design level" evaluation (including queuing on intersection lane groups, stacking length requirements, coordinated signal operations analyses, etc.) is not included in this planning-level study. However, the analysis provides some qualitative and quantitative discussions regarding queuing, stacking length requirements, etc. within descriptions of mitigation and recommended improvements.

Warrant Analysis

A supplemental traffic signal "warrant" analysis has been completed on unsignalized intersections determined to be operating at unacceptable LOS. 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 unsignalized intersection. This study has employed the signal warrant criteria presented in the latest edition (2014) of the California Manual on Uniform Traffic Control Devices (MUTCD) for all study intersections. The signal warrant criteria are based upon several factors, including the volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas.

The California MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. Typically, the peak hour volume-based Warrant 3 used in this study serves as an early indicator of whether a study intersection would benefit from signalization. Additional traffic warrant analyses are recommended to determine the true feasibility of a signal improvement. The warrant analysis results are summarized in the level of service intersection operation tables in the subsequent sections of this report. The warrant analyses for selected intersections operating at unacceptable service levels are included in the appendix.

Existing Conditions

Existing conditions analysis establishes the baseline traffic conditions observed today. The *Existing* condition is the analysis scenario in which current operations at study locations, assuming no project development (i.e., Tierra Robles), are analyzed.

Existing Traffic Operations

Existing daily traffic operations along roadway segments were analyzed by comparing Existing ADT volumes to the ADT-based thresholds (outlined in Table 4) that corresponds to the Existing roadway type. Table 7 contains a summary of the *Existing* roadway segment LOS conditions.

TABLE 7
EXISTING CONDITIONS: ROADWAY LEVEL OF SERVICE

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	LOS
Old Alturas Road just west of Deschutes Road	Two-Lane Collector	E	1,046	A
Old Alturas Road just north of Boyle Road	Two-Lane Collector	E	1,750	A
Old Alturas Road just east of Shasta View Drive	Two-Lane Collector	C	5,982	A
Old Alturas Road between Old Oregon Trail and Boyle Road	Two-Lane Arterial	E	4,197	A
Boyle Road just west of Deschutes Road	Two-Lane Collector	E	1,456	A
Shasta View Drive just north of Tarmac Road	Three Lane Arterial	C	11,952	B
Old Oregon Trail just north of Old 44 Drive	Two-Lane Collector	E	8,031	C
Deschutes Road just north of Old 44 Drive	Two-Lane Collector	E	8,495	C

As shown in the above Table 7, all roadways are projected to operate at acceptable level of service in existing conditions.

Existing AM and PM peak hour intersection traffic operations were quantified utilizing the existing traffic volumes (Figure 3) and the existing intersection lane geometrics and control (Figure 2). Table 8 contains a summary of the *Existing* intersection LOS conditions.

TABLE 8
EXISTING CONDITIONS: INTERSECTION LEVEL OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	Deschutes Road/SR 299	Signal	C	7.9	A	-	16.6	B	-
2	Deschutes Road/Old Alturas Road	TWSC	E	15.0	B	No	11.8	B	No
3	Old Alturas Road/Seven Lakes Road	TWSC	E	0.3	A	No	0.2	A	No
4	Old Alturas Road/Shasta View Drive	RDB	C	6.4	A	-	6.0	A	-
5	Shasta View Drive/Tarmac Road	Signal	C	15.3	B	-	13.1	B	-
6	Shasta View Drive/SR 44 WB Ramps	TWSC	C	16.0	C	No	15.9	C	No
7	Shasta View Drive/SR 44 EB Ramps	Signal	C	16.3	B	-	14.0	B	-
8	Old Alturas Road/Old Oregon Trail	AWSC	E	15.5	C	Yes	11.6	B	Yes
9	Old Oregon Trail/Old 44 Drive	Signal	C	19.2	B	-	17.1	B	-
10	**Airport Road/SR 44 WB Ramps**	**TWSC**	**C**	**69.5**	**F**	**No**	**OVR**	**F**	**No**
11	Airport Road/SR 44 EB Ramps	Signal	C	11.2	B	-	11.1	B	-
12	Old Alturas Road/Boyle Road	TWSC	E	9.9	A	No	9.8	A	No
13	Boyle Road/Deschutes Road	TWSC	E	31.6	D	No	12.5	B	No
14	Deschutes Road/Old 44 Drive	AWSC	E	43.2	E	Yes	23.3	C	Yes
15	Deschutes Road/Cedro Lane	AWSC	E	38.3	E	Yes	20.3	C	Yes
16	Deschutes Road/SR 44 WB Ramps	TWSC	C	19.8	C	No	15.1	C	No
17	Deschutes Road/SR 44 EB Ramps	AWSC	C	15.2	C	Yes	13.8	B	Yes

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3
OVR = Delay exceeds 300 seconds

As shown in Table 8, all intersections are projected to operate at acceptable levels of service; except the intersection at Airport Road & SR 44 WB Ramps.

Project Description

The proposed project is located on Boyle Road, near Rocky Road in the City of Redding, in Shasta County. The latest site plan (dated January 9, 2008) indicates that 164 lots are proposed at the project site. The project's site plan is shown in Figure 4.

Project On-Site Parking & Circulation

As shown on the site plan, access to/from the project site will be provided via Project Roadway "A", which connects onto Boyle Road and Old Alturas Road. The emergency access will be addressed by the County's development standards. However, it is important to note that the Project Roadway "A" will be 187 feet from the existing intersection of Seven Lakes Road and Old Alturas Road.

To obtain the LOS and the delay at this intersection, the worst approach delay and LOS is reported in this Traffic Impact Study Report. A qualitative analysis was conducted by Omni-Means and findings were submitted to the Planning Department by S2J2 Engineering.

As stated in the Memorandum dated November 11, 2010, the volume of traffic on Seven Lakes Road is projected to be approximately 30 AM peak hour trips and 70 PM peak hour trips under 2030 conditions. Those volumes are true for the updated Traffic Impact Study (shown in relevant sections of this study). Given the low traffic forecasts on Seven Lakes Road and approximately 17 AM and 23 PM peak hour project trips on Street A, it is expected that the Seven Lakes Road/Street A intersection will operate at acceptable LOS with the addition of project trips. It is recommended that the Seven Lakes Road/Street A intersection be controlled by a stop sign along Street A.

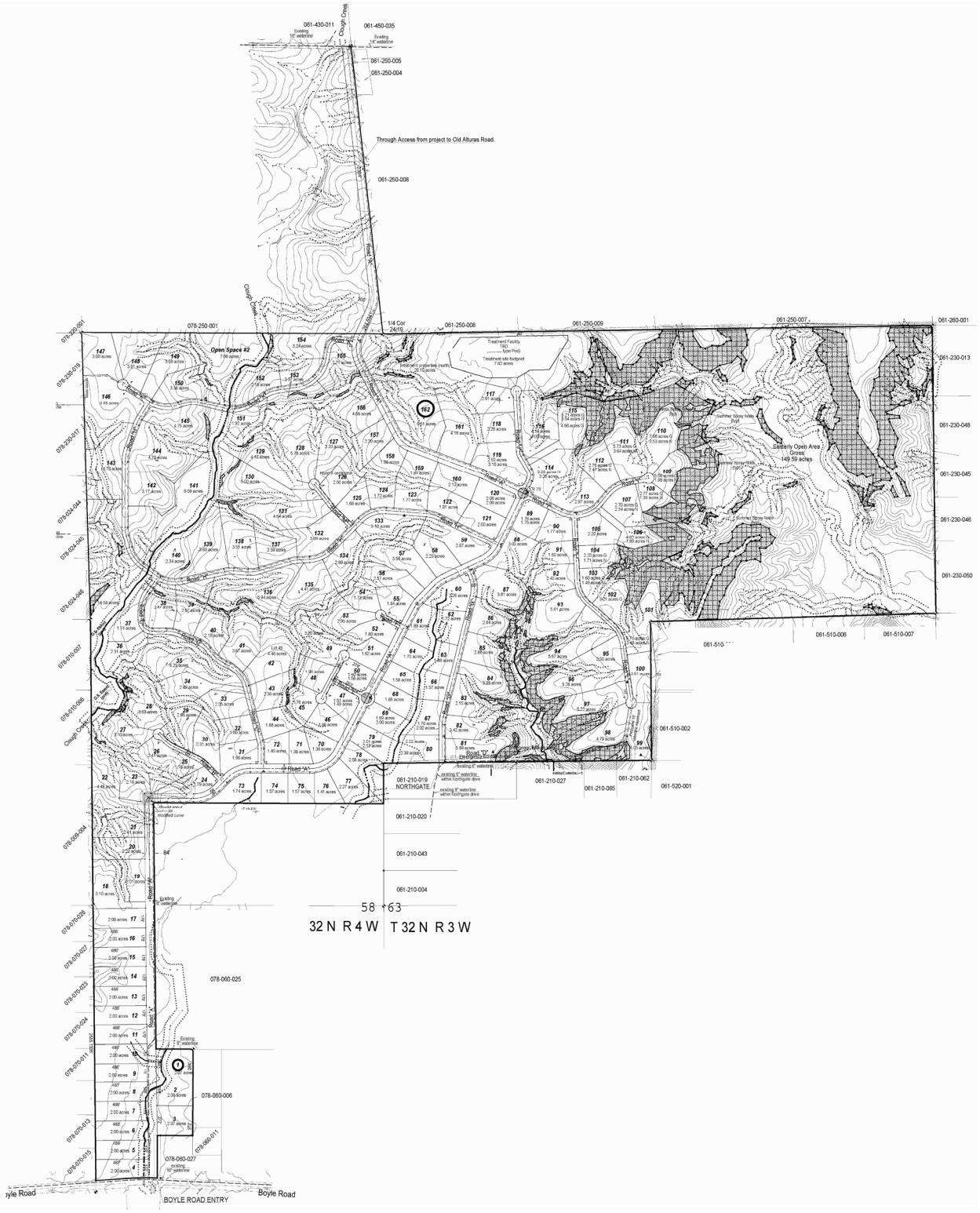
Based on the findings provided, S2J2 made appropriate changes to the plan. The changes included Project Roadway "A" to be connected to Seven Lakes Road with a Type B connection. The section of Seven Lakes Road from the connection point to the existing intersection of Old Alturas would be widened to a Local Rural Street Section. This section of roadway has adequate right-of-way width to accommodate these improvements. On the north side of Seven Lakes Road from the connection point running west, the right-of-way line is approximately 42 feet north of centerline of the existing roadway. The right-of-way line on the south side of the road is not defined and can be placed as required to accommodate the improvements. The project driveway exhibit submitted by SJS2 can be found in the Appendix.

To further justify qualitatively that there is no queuing issue at this segment of the roadway, a micro-simulation analysis was performed as per the conditions stated above using SimTraffic software. The *Year 2035 Plus Project* PM peak hour volumes were used to perform the analysis, since it had the highest volumes. The results from the micro-simulation will be discussed at the end of the report in the Project Impacts and Mitigation Measures section.

The on-site trail system will be used primarily by project residents and will not result in significant traffic or parking needs.

Construction Traffic

The project is planned to be constructed in one phase. Standard County conditions of approval require encroachment permits and traffic control plans for work in the public right of way. Traffic control plans will be prepared to allow construction traffic to enter and also during driveway access improvements. Although construction will temporarily generate additional traffic in the project vicinity, construction of residential developments tends to build out over several years. The construction-generated traffic will be less when compared to the expected project-generated 164 PM peak hour trips. Therefore, traffic impacts due to the construction-generated traffic during the peak periods is not projected to have a significant impact on the operations of the study area roadways.



Tierra Robles TIAR

Figure 4

Project Site Plan

Project Trip Generation

Project site trip generation has been estimated utilizing trip generation rates contained in the Institute of Transportation Engineers (ITE) Publication *Trip Generation Manual (Ninth Edition)*. Single Family Detached Housing (ITE Code 210) has been used to estimate the Trip Generation. Table 9 provides a summary of the land uses and quantities (i.e., units) within the proposed project, along with corresponding ITE land use codes from which trip generation characteristics were established.

TABLE 9
PROJECT TRIP GENERATION

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Single Family Detached Housing (210)	D.U	10.09	0.76	25%	75%	1.00	63%	37%
Project Name	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
	164	1,656	125	31	93	164	103	61
Net New Project Trips		**1,656**	**125**	**31**	**93**	**164**	**103**	**61**

Notes:

1. 1 ksf = 1,000 square feet DU = dwelling unit

2. Trip rates based on equations as presented in the ITE Trip Generation Manual 9th edition

As shown in Table 9, complete build-out of the proposed project will generate 1,656 new daily trips, with 125 generated during the AM peak hour and 164 generated during the PM peak hour period.

Project Trip Distribution

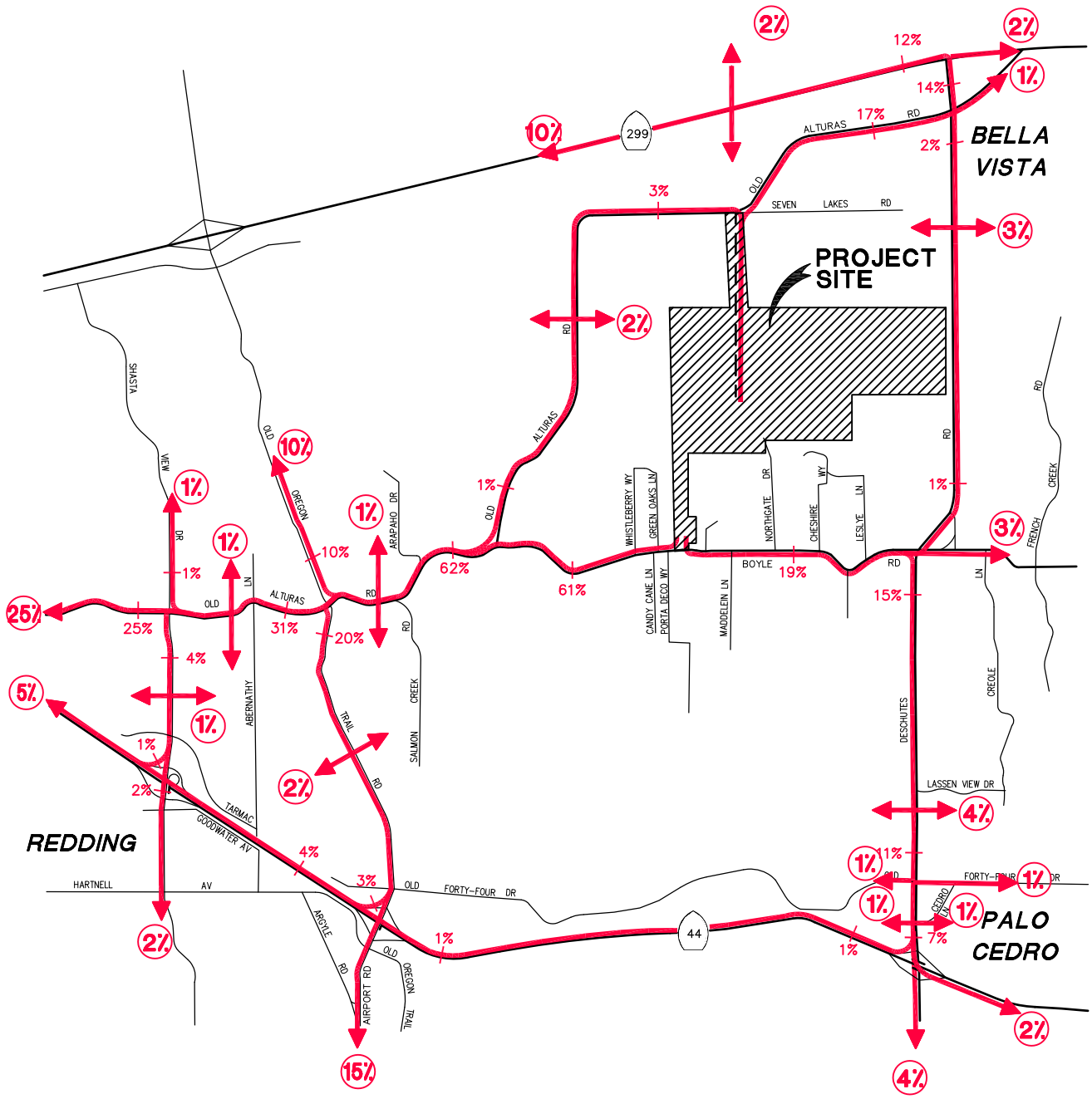
The directional trip distribution and assignment of project-generated trips was estimated based on an understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site, location of local and regional housing and employment/commercial centers in relation to the proposed project site and supplemented by the use of the Shasta County Regional Travel Demand Forecast model. The directional trip distribution for the proposed project is depicted graphically in Figure 5.

Existing Plus Project Conditions

The *Existing Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., Tierra Robles) are investigated in comparison to the *Existing* conditions scenario.

Figure 6 shows the *Existing Plus Project* lane geometrics and control, which show only the project driveways and assume Existing intersection lane geometries and control from Figure 2 at all other intersections.

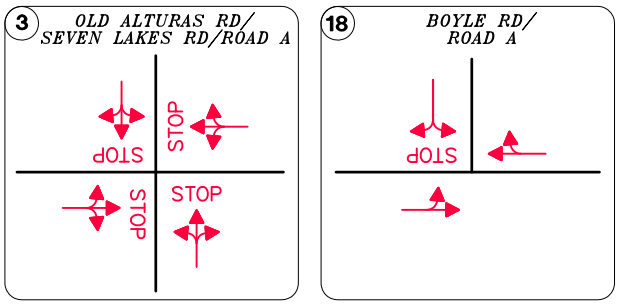
Figure 7 shows *the Existing Plus Project* volumes at the study intersections.



Tierra Robles TIAR

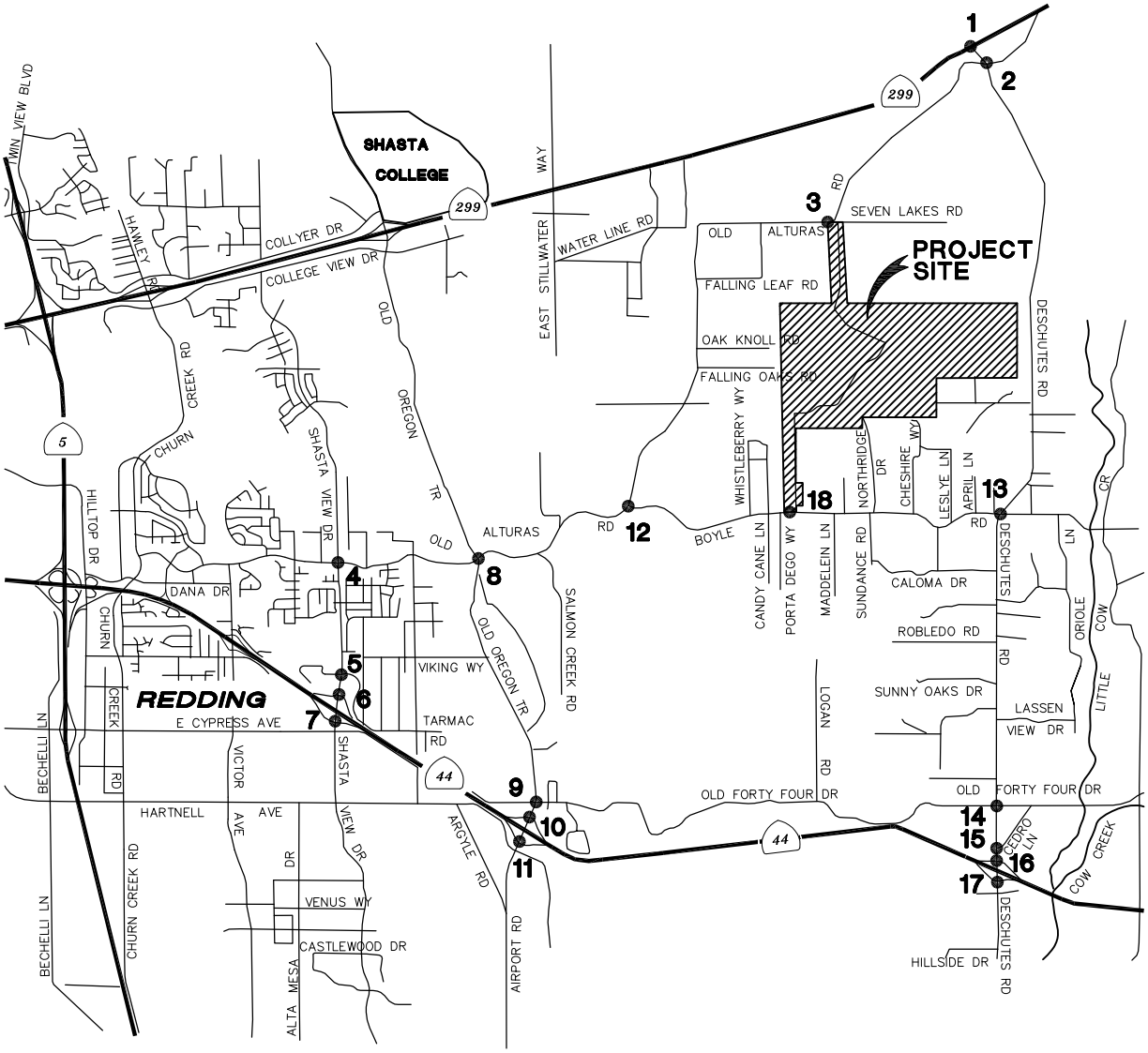
Figure 5

Project Trip Distribution



LEGEND:

INTERSECTION 3 CONFIGURATION FOR ANALYSIS PURPOSES ONLY

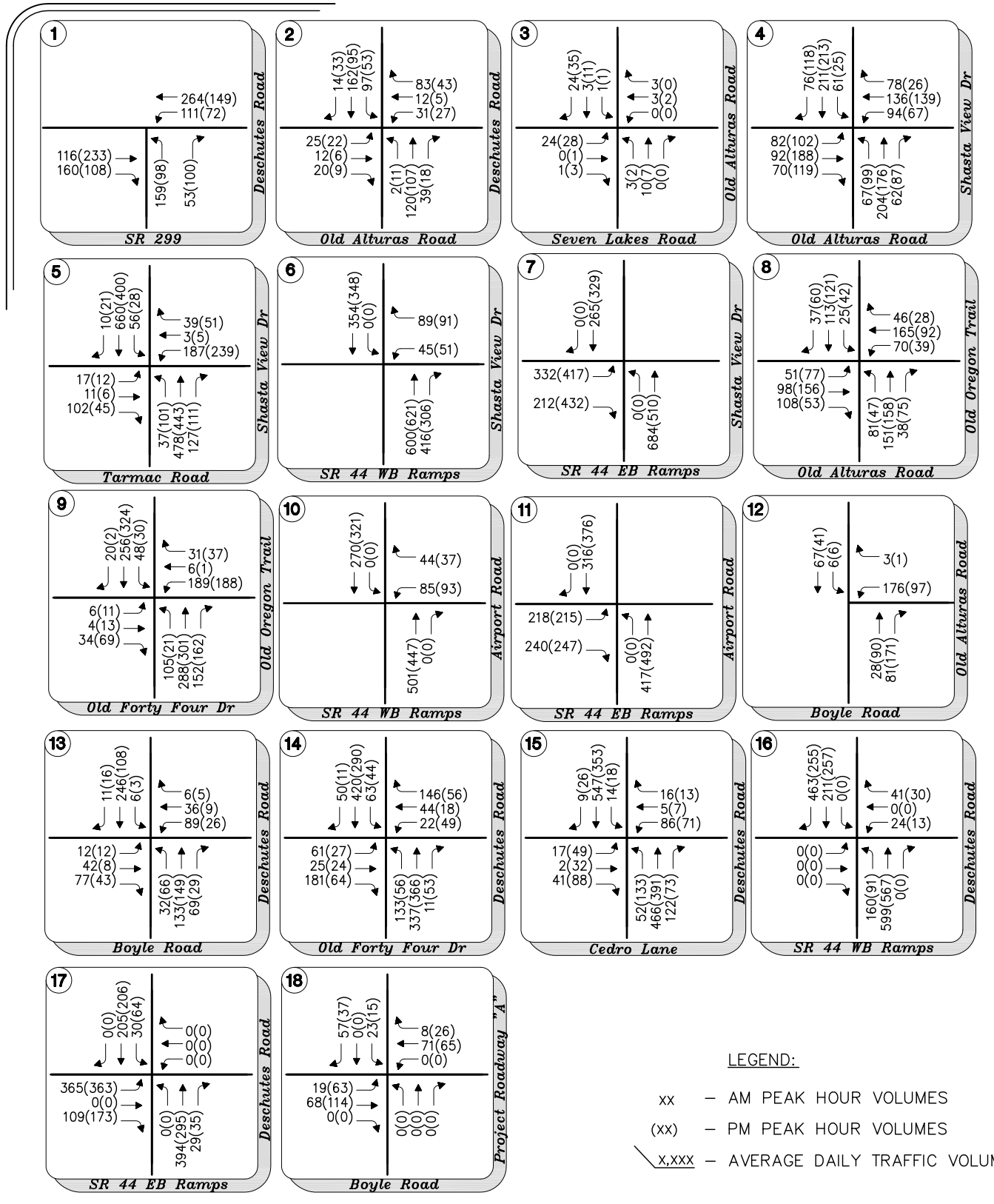


NOTE: All other intersections will have same lane geometrics and control as shown in Figure 2.

Tierra Robles TIAR

Figure 6

Existing Plus Project Lane Geometrics

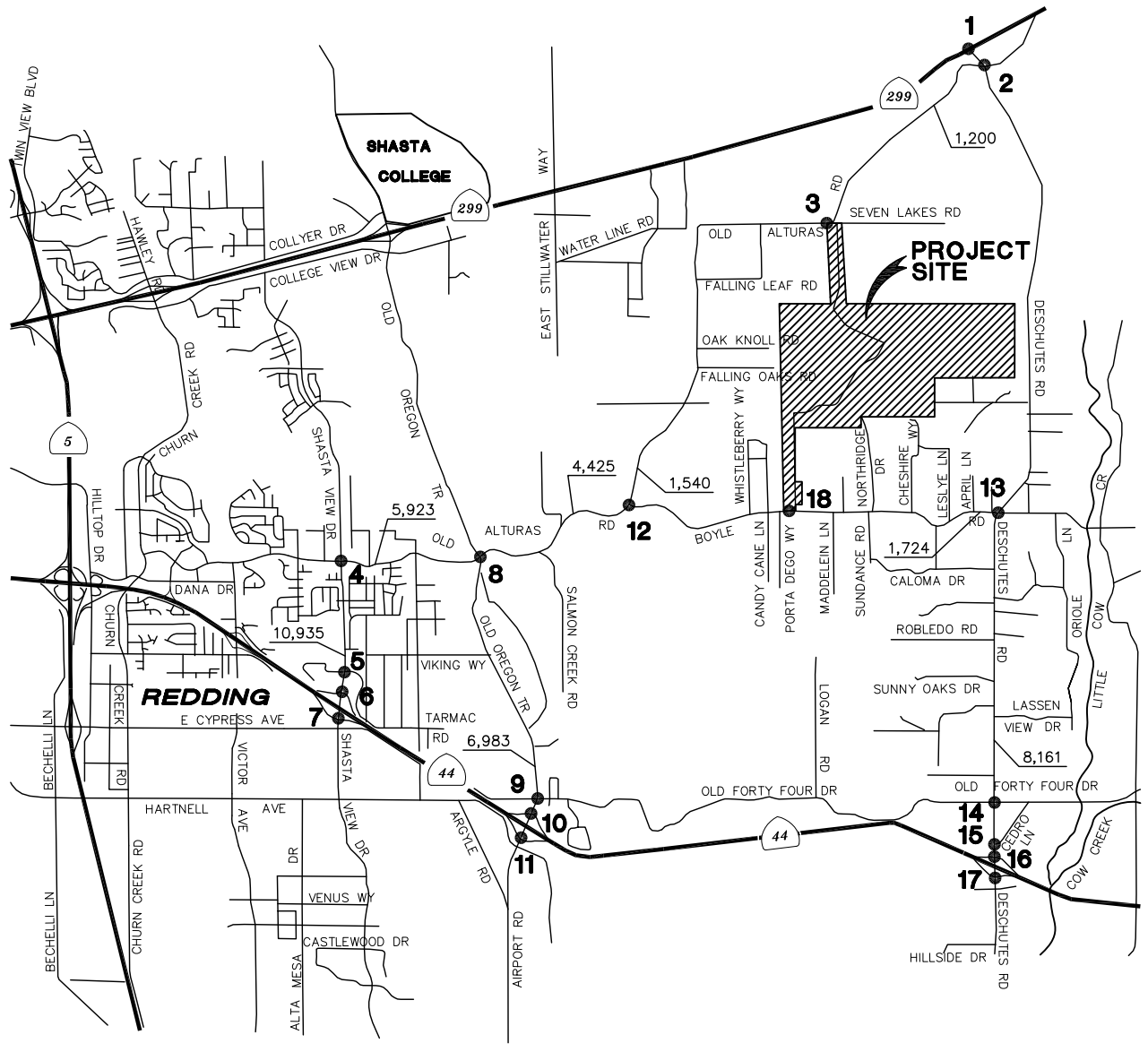


LEGEND:

xx – AM PEAK HOUR VOLUMES

(xx) – PM PEAK HOUR VOLUMES

x,xxx – AVERAGE DAILY TRAFFIC VOLUMES



Tierra Robles TIAR

Figure 7

Existing Plus Project Intersection Traffic Volumes

Existing Plus Project Operations

Existing Plus Project conditions traffic volumes have been derived by superimposing the 'Project Only' traffic volumes onto the *Existing* traffic volumes. The project daily volumes were calculated using the percentage distribution shown in Figure 5. The project intersection volumes were calculated using the ITE Trip Generation Manual as stated in the previous section of this report.

Existing Plus Project daily traffic operations along roadway segments were analyzed by comparing the *Existing Plus Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 4) that corresponds to the roadway type assumed for the *Existing* conditions. Table 10 contains a summary of the resulting *Existing Plus Project* roadway segment LOS conditions.

TABLE 10
EXISTING PLUS PROJECT CONDITIONS: ROADWAY LEVEL OF SERVICE

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	LOS
Old Alturas Road just west of Deschutes Road	Two-Lane Collector	E	1,328	A
Old Alturas Road just north of Boyle Road	Two-Lane Collector	E	1,767	A
Old Alturas Road just east of Shasta View Drive	Two-Lane Collector	C	6,495	B
Old Alturas Road between Old Oregon Trail and Boyle Road	Two-Lane Arterial	E	5,224	A
Boyle Road just west of Deschutes Road	Two-Lane Collector	E	1,771	A
Shasta View Drive just north of Tarmac Road	Three Lane Arterial	C	12,002	B
Old Oregon Trail just north of Old 44 Drive	Two-Lane Collector	E	8,329	C
Deschutes Road just north of Old 44 Drive	Two-Lane Collector	E	8,611	C

As shown in Table 10, all roadway segments are projected to operate at acceptable level of service.

Existing Plus Project AM and PM peak hour intersection traffic operations have been quantified utilizing the *Existing Plus Project* conditions lane geometrics and control (shown on Figure 6) and the *Existing Plus Project* peak hour intersection traffic volumes (shown on Figure 7).

Table 11 on the next page contains a summary of the resulting intersection LOS conditions.

TABLE 11
EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LEVEL OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	Deschutes Road/SR 299	Signal	C	15.5	B	-	16.6	B	-
2	Deschutes Road/Old Alturas Road	TWSC	E	16.0	C	No	12.2	B	No
3	Old Alturas Road/Seven Lakes Road	TWSC	E	7.3	A	No	7.4	A	No
4	Old Alturas Road/Shasta View Drive	RDB	C	6.5	A	-	6.2	A	-
5	Shasta View Drive/Tarmac Road	Signal	C	15.3	B	-	13.1	B	-
6	Shasta View Drive/SR 44 WB Ramps	TWSC	C	16.0	C	No	16.0	C	No
7	Shasta View Drive/SR 44 EB Ramps	Signal	C	16.3	B	-	14.0	B	-
8	Old Alturas Road/Old Oregon Trail	AWSC	E	18.5	C	Yes	13.0	B	Yes
9	Old Oregon Trail/Old 44 Drive	Signal	C	19.4	B	-	17.3	B	-
10	**Airport Road/SR 44 WB Ramps**	**TWSC**	**C**	**75.3**	**F**	**No**	**OVR**	**F**	**Yes**
11	Airport Road/SR 44 EB Ramps	Signal	C	11.3	B	-	11.3	B	-
12	Old Alturas Road/Boyle Road	TWSC	E	10.4	B	No	10.1	B	No
13	Boyle Road/Deschutes Road	TWSC	E	36.2	E	No	13.2	B	No
14	Deschutes Road/Old 44 Drive	AWSC	E	44.2	E	Yes	25.1	D	Yes
15	Deschutes Road/Cedro Lane	AWSC	E	38.7	E	Yes	21.2	C	Yes
16	Deschutes Road/SR 44 WB Ramps	TWSC	C	20.0	C	No	15.0	B	No
17	Deschutes Road/SR 44 EB Ramps	AWSC	C	15.3	C	Yes	13.9	B	Yes
18	Boyle Road/Project Driveway A	TWSC	E	9.6	A	No	9.8	A	No

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3

As shown in Table 11, the intersection at Airport Road and SR 44 WB Ramps continues to operate at unacceptable LOS in *Existing Plus Project* conditions. All other intersections are projected to operate at acceptable LOS in both AM & PM peak hour period.

Year 2035 Conditions

The long-term future year traffic forecasts for this study have been developed using the Shasta County Regional Travel Demand Model. Cumulative No Project intersection traffic volumes are illustrated in Figure 8.

Year 2035 No Project conditions refers to a cumulative "No Project" condition where the proposed Tierra Robles development remains undeveloped through year 2035, and year 2035 model land uses are assumed elsewhere. "Year 2035 Plus Project" conditions were then simulated by superimposing the proposed project-generated traffic from the project on top of the *Year 2035 Base* traffic volumes.

Programmed Improvements

They were no planned improvements assumed to be constructed by Year 2035.

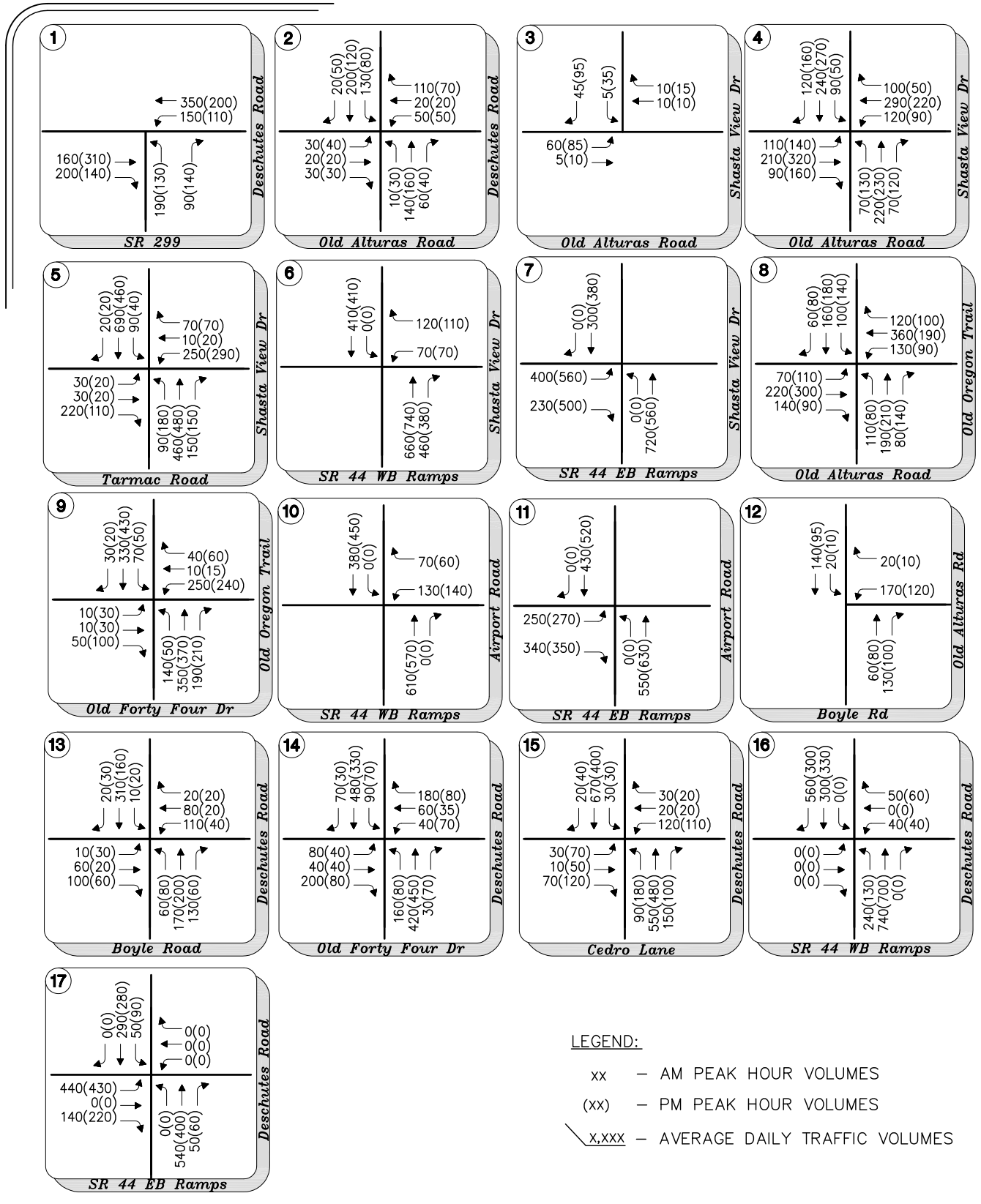
Year 2035 No Project Traffic Operations

Year 2035 No Project conditions daily traffic operations along roadway segments were analyzed by comparing the derived Year 2035 No Project ADT volumes to the ADT-based LOS thresholds that corresponds to the roadway type assumed for the *Existing* conditions. Table 12 contains a summary of the resulting Cumulative No Project roadway segment LOS conditions.

TABLE 12
YEAR 2035 NO PROJECT CONDITIONS: ROADWAY LEVEL OF SERVICE

Roadway Segment	Capacity Configuration	Target LOS	Average Daily Traffic (ADT)	Year 2035 No Project AADT	LOS
Old Alturas Road just west of Deschutes Road	Two-Lane Collector	E	1,046	1,250	A
Old Alturas Road just north of Boyle Road	Two-Lane Collector	E	1,750	1,950	A
Old Alturas Road just east of Shasta View Drive	Two-Lane Collector	C	5,982	8,390	C
Old Alturas Road between Old Oregon Trail and Boyle Road	Two-Lane Arterial	E	4,197	4,600	A
Boyle Road just west of Deschutes Road	Two-Lane Collector	E	1,456	1,510	A
Shasta View Drive just north of Tarmac Road	Three Lane Arterial	C	11,952	12,060	B
Old Oregon Trail just north of Old 44 Drive	Two-Lane Collector	E	8,031	10,840	E
Deschutes Road just north of Old 44 Drive	Two-Lane Collector	E	8,495	9,800	D

As shown in Table 12 above, all roadways operate at acceptable LOS in *Year 2035 No Project* Conditions.

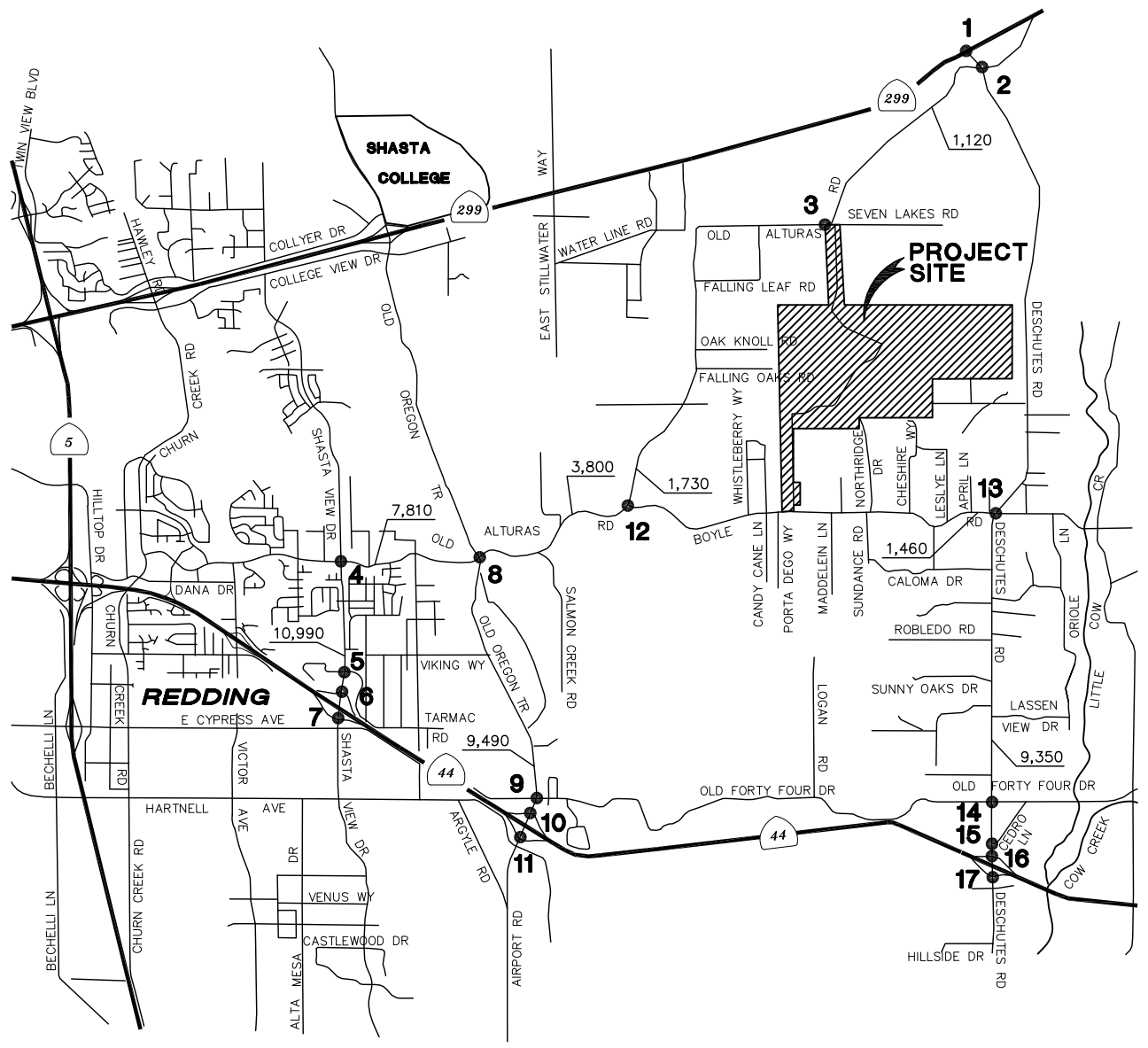


LEGEND:

xx – AM PEAK HOUR VOLUMES

(xx) – PM PEAK HOUR VOLUMES

x,xxx – AVERAGE DAILY TRAFFIC VOLUMES



Tierra Robles TIAR

Figure 8

Year 2035 No Project Intersection Traffic Volumes

Year 2035 No Project peak-hour intersection traffic operations were quantified by applying existing intersection lane geometrics and control (shown on Figure 2) and Cumulative No Project intersection traffic volumes (shown in Figure 8). Table 13 presents the resulting Cumulative No Project peak hour intersection LOS.

TABLE 13
YEAR 2035 NO PROJECT CONDITIONS: INTERSECTION LEVEL OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	Deschutes Road/SR 299	Signal	C	16.7	B	-	17.6	B	-
2	Deschutes Road/Old Alturas Road	TWSC	E	19.6	C	No	16.1	C	No
3	Old Alturas Road/Seven Lakes Road	TWSC	E	0.3	A	No	0.4	A	No
4	Old Alturas Road/Shasta View Drive	RDB	C	9.1	A	-	12.2	B	-
5	Shasta View Drive/Tarmac Road	Signal	C	20.8	C	-	17.1	B	-
6	Shasta View Drive/SR 44 WB Ramps	TWSC	C	17.7	C	Yes	20.2	C	Yes
7	Shasta View Drive/SR 44 EB Ramps	Signal	C	16.5	B	-	15.9	B	-
8	**Old Alturas Road/Old Oregon Trail**	**AWSC**	**E**	**68.4**	**F**	**Yes**	**72.3**	**F**	**Yes**
9	Old Oregon Trail/Old 44 Drive	Signal	C	26.5	C	-	26.9	C	-
10	**Airport Road/SR 44 WB Ramps**	**TWSC**	**C**	**OVR**	**F**	**Yes**	**OVR**	**F**	**Yes**
11	Airport Road/SR 44 EB Ramps	Signal	C	16.0	B	-	18.0	B	-
12	Old Alturas Road/Boyle Road	TWSC	E	11.6	B	No	10.6	B	No
13	**Boyle Road/Deschutes Road**	**TWSC**	**E**	**95.9**	**F**	**Yes**	17.7	C	**No**
14	**Deschutes Road/Old 44 Drive**	**AWSC**	**E**	**54.8**	**F**	**Yes**	35.8	E	**Yes**
15	Deschutes Road/Cedro Lane	AWSC	E	48.0	E	Yes	36.0	E	Yes
16	**Deschutes Road/SR 44 WB Ramps**	**TWSC**	**C**	**42.1**	**E**	**No**	24.8	C	**No**
17	Deschutes Road/SR 44 EB Ramps	AWSC	C	22.6	C	Yes	18.9	C	Yes

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3
OVR = Delay exceeds 300 seconds

As shown in Table 13, following intersections operate at unacceptable LOS in AM and/or PM peak hour:

- Intersection # 8 Old Alturas Road/Old Oregon Trail
- Intersection # 10 Airport Road/SR 44 WB Ramps
- Intersection # 13 Boyle Road/Deschutes Road
- Intersection # 14 Deschutes Road/Old 44 Drive
- Intersection # 16 Deschutes Road/SR 44 WB Ramps

Year 2035 Plus Project Traffic Operations

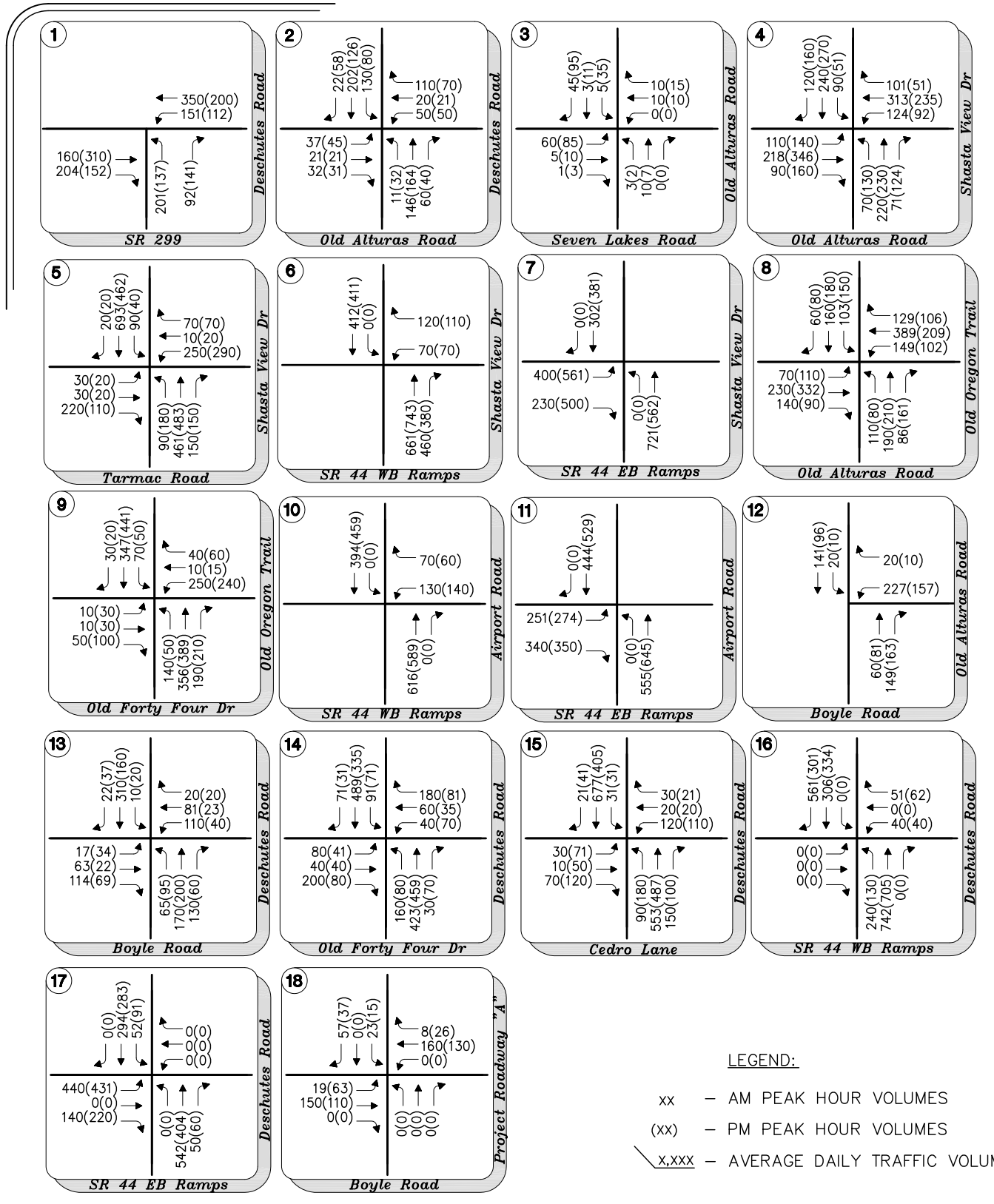
Year 2035 Plus Project conditions daily traffic operations along roadway segments were analyzed by comparing the derived *Year 2035 Plus Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 4) that corresponds to the roadway type assumed for the *Existing* conditions. Table 14 contains a summary of the resulting *Year 2035 Plus Project* roadway segment LOS conditions.

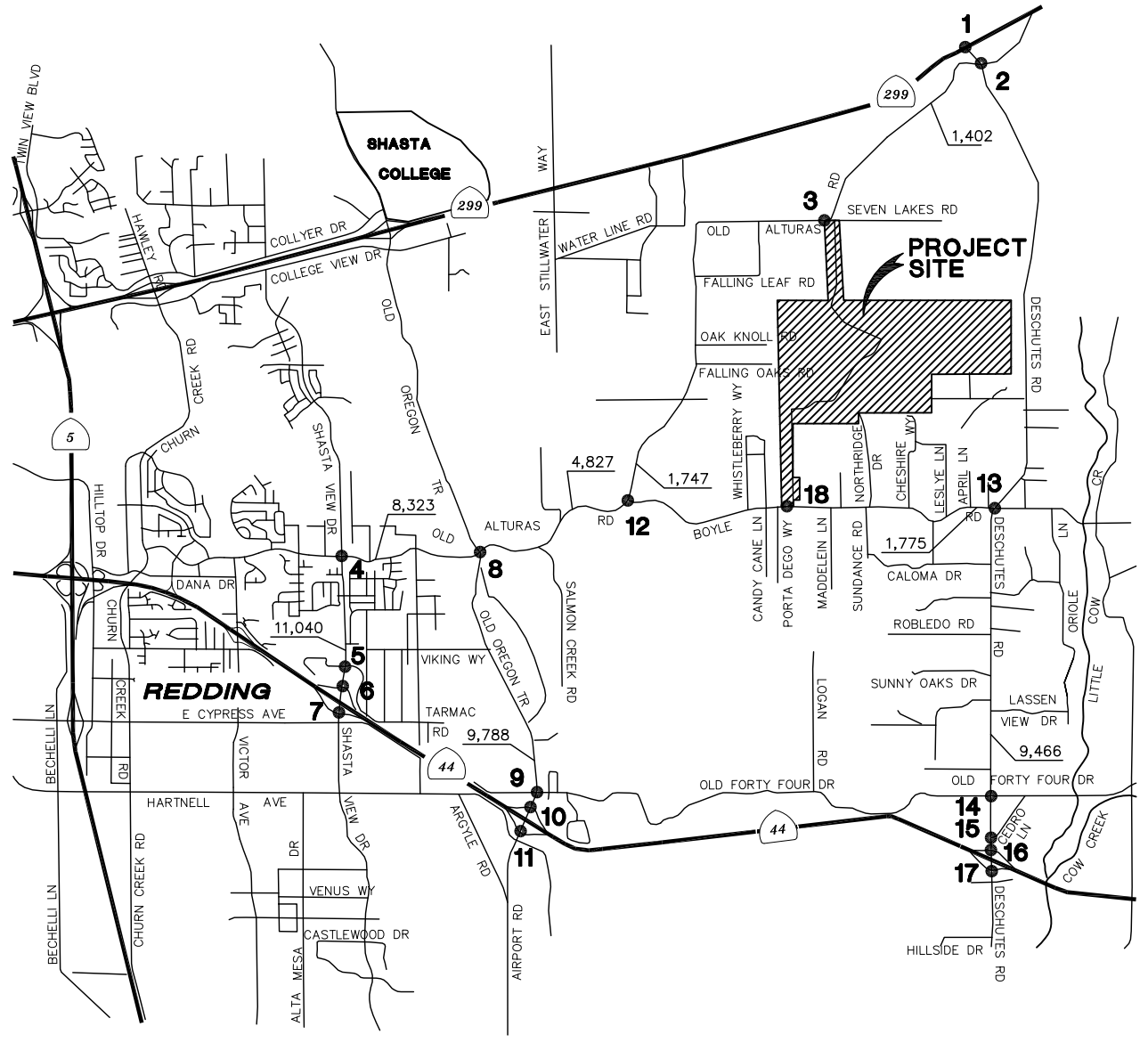
TABLE 14
YEAR 2035 PLUS PROJECT CONDITIONS: ROADWAY LEVEL OF SERVICE

Roadway Segment	Capacity Configuration	Target LOS	Year 2035 Plus Project AADT	LOS
Old Alturas Road just west of Deschutes Road	Two-Lane Collector	E	1,532	A
Old Alturas Road just north of Boyle Road	Two-Lane Collector	E	1,967	A
Old Alturas Road just east of Shasta View Drive	Two-Lane Collector	C	8,903	C
Old Alturas Road between Old Oregon Trail and Boyle Road	Two-Lane Arterial	E	5,627	A
Boyle Road just west of Deschutes Road	Two-Lane Collector	E	1,825	A
Shasta View Drive just north of Tarmac Road	Three Lane Arterial	C	12,110	B
Old Oregon Trail just north of Old 44 Drive	Two-Lane Collector	E	11,138	E
Deschutes Road just north of Old 44 Drive	Two-Lane Collector	E	9,916	D

As shown in Table 14 above, all roadways operate at acceptable LOS in *Year 2035 Plus Project* Conditions.

Year 2035 Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2035 No Project* traffic volumes at the study intersections. The resulting *Year 2035 Plus Project* intersection traffic volumes are illustrated in Figure 9. The lane geometrics and control for *Year 2035 Plus Project* conditions will be the same as *Existing Plus Project* conditions, as shown in Figure 6.





Tierra Robles TIAR

Figure 9

Year 2035 Plus Project Intersection Traffic Volumes

Table 15 contains a summary of the resulting *Year 2035 Plus Project* intersection LOS conditions.

TABLE 15
YEAR 2035 PLUS PROJECT CONDITIONS: INTERSECTION LOS

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	Deschutes Road/SR 299	Signal	C	16.7	B	-	17.7	B	-
2	Deschutes Road/Old Alturas Road	TWSC	E	21.2	C	No	16.9	C	No
3	Old Alturas Road/Seven Lakes Road	TWSC	E	7.7	A	No	8.1	A	No
4	Old Alturas Road/Shasta View Drive	RDB	C	9.5	A	-	14.1	B	-
5	Shasta View Drive/Tarmac Road	Signal	C	20.8	C	-	17.1	B	-
6	Shasta View Drive/SR 44 WB Ramps	TWSC	C	17.8	C	Yes	20.4	C	Yes
7	Shasta View Drive/SR 44 EB Ramps	Signal	C	16.6	B	-	15.9	B	-
8	**Old Alturas Road/Old Oregon Trail**	**AWSC**	**E**	**68.7**	**F**	**Yes**	**74.0**	**F**	**Yes**
9	Old Oregon Trail/Old 44 Drive	Signal	C	26.9	C	-	28.0	C	-
10	**Airport Road/SR 44 WB Ramps**	**TWSC**	**C**	**OVR**	**F**	**Yes**	**OVR**	**F**	**Yes**
11	Airport Road/SR 44 EB Ramps	Signal	C	16.1	B	-	18.6	B	-
12	Old Alturas Road/Boyle Road	TWSC	E	12.5	B	No	11.0	B	No
13	**Boyle Road/Deschutes Road**	**TWSC**	**E**	**117.4**	**F**	**Yes**	19.2	C	**No**
14	**Deschutes Road/Old 44 Drive**	**AWSC**	**E**	**55.7**	**F**	**Yes**	36.1	E	**Yes**
15	Deschutes Road/Cedro Lane	AWSC	E	48.2	E	Yes	36.3	E	Yes
16	**Deschutes Road/SR 44 WB Ramps**	**TWSC**	**C**	**42.5**	**E**	**No**	24.8	C	**No**
17	Deschutes Road/SR 44 EB Ramps	AWSC	C	23.0	C	Yes	19.1	C	Yes
18	Boyle Road/Project Driveway A	TWSC	E	10.4	B	No	10.2	B	No

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3

As shown in Table 15, following intersections are projected to operate at unacceptable LOS in AM or/and PM peak hour:

- Intersection # 8 Old Alturas Road/Old Oregon Trail
- Intersection # 10 Airport Road/SR 44 WB Ramps
- Intersection # 13 Boyle Road/Deschutes Road
- Intersection # 14 Deschutes Road/Old 44 Drive
- Intersection # 16 Deschutes Road/SR 44 WB Ramps

No intersections projected to operate at unacceptable LOS in *Year 2035 Plus Project* conditions operated at acceptable LOS in *Year 2035 No Project* conditions.

Project Impacts and Mitigation Measures

This section presents recommended project-related mitigation measures at the study intersections, developed based on the finding from the analyses presented in the prior sections of this report. The mitigation are provided for both existing conditions and Year 2035 conditions separately, so it might be possible that same mitigation at one location be applicable in both conditions.

Existing Plus Project: Significant Project Impacts

Table 16 presents the project significant impacts at intersections under *Existing Plus Project* conditions.

TABLE 16
EXISTING PLUS PROJECT SIGNIFICANT IMPACTS

AM Peak Hour									
#	Intersection	Control Type[1]	Target LOS	Existing LOS[2]	Existing Plus Project LOS[2]	Existing Delay (D1)	Existing Plus Project Delay (D2)	D2-D1	Significant Impact?
10	**Airport Road/SR 44 WB Ramps**	TWSC	C	**F**	**F**	69.5	75.3	5.8	**Yes**
PM Peak Hour									
#	Intersection	Control Type[1]	Target LOS	Existing LOS[2]	Existing Plus Project LOS[2]	Existing Delay (D1)	Existing Plus Project Delay (D2)	D2-D1	Significant Impact?
10	**Airport Road/SR 44 WB Ramps**	TWSC	C	F	F	OVR	OVR	>5 Sec	Yes

Notes:

1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections

OVR = Delay exceeds 300 seconds

In addition, there will be a significant traffic safety impact on the Deschutes Road (Boyle Rd to SR 44) segment.

Existing Plus Project: Project Mitigation

The following improvements are proposed to provide acceptable operations at intersections where a project significant impact is identified. Table 17 presents the mitigated LOS operations assuming these improvements.

Intersection 10: Airport Road & SR 44 WB Ramps:

This TWSC intersection is projected to operate at an unacceptable LOS F during both AM and PM peak hour *Existing Plus Project* conditions. This intersection meets the peak hour signal warrant under *Existing Plus Project* PM peak hour conditions. The following improvements will provide adequate capacity to result in acceptable LOS C or better conditions.

- Install a Traffic Signal

  OR

- Install a Modern Roundabout

It is recommended that the traffic signal at this intersection be coordinated with the traffic signals that exist at the Old Oregon Trail & Old 44 Drive and Airport Road & SR 44 EB Ramps intersections.

Significance after Mitigation

In accordance with the *City of Redding Traffic Impact Analysis Guidelines* 2009, the Project mitigation is to construct the recommended improvements at the time of development in order to mitigate impacts to less than significant. The stated improvement was planned and funded, but not built in 2008. The project shall hence build the recommended improvement. The project will be reimbursed as per the reimbursement agreement deemed by the City staff. The project impact will be less than significant with construction of the improvements.

TABLE 17
MITIGATED EXISTING PLUS PROJECT INTERSECTION LOS

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
10	Airport Road/SR 44 WB Ramps	Signal	C	5.5	A	No	6.6	A	Yes
10	Airport Road/SR 44 WB Ramps	RDB	C	6.0	A	No	7.9	A	Yes

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3

The following improvements are proposed to mitigate the project's impact on traffic safety:

Deschutes Road (Boyle Rd to SR 44):

Installation of the following is recommended for *Existing Plus Project* conditions:

- Caltrans standard W2 intersection warning signs with W16-8P advance street name plaques at Lassen View Drive, Beryl Drive, Sunny Oaks Drive, Wesley Drive, Robledo Road, Oak Meadow Road, Oak Tree Lane, and Coloma Drive.

Year 2035 Plus Project: Significant Project Impacts

Table 18 presents the project significant impacts under *Year 2035 Plus Project* conditions.

TABLE 18
YEAR 2035 PLUS PROJECT SIGNIFICANT IMPACTS

AM Peak Hour									
#	Intersection	Control Type[1]	Target LOS	Existing LOS[2]	Existing Plus Project LOS[2]	Existing Delay (D1)	Existing Plus Project Delay (D2)	D2-D1	Significant Impact?
8	Old Alturas Road/Old Oregon Trail	AWSC	E	**F**	**F**	68.4	68.7	0.3	No
10	**Airport Road/SR 44 WB Ramps**	TWSC	C	**F**	**F**	OVR	OVR	>5 Sec	**Yes**
13	**Boyle Road/Deschutes Road**	TWSC	E	**F**	**F**	95.9	117.4	21.5	**Yes**
14	Deschutes Road/Old 44 Drive	AWSC	E	**F**	**F**	54.8	55.7	0.9	No
16	Deschutes Road/SR 44 WB Ramps	TWSC	C	**E**	**E**	42.1	42.5	0.4	No
PM Peak Hour									
#	Intersection	Control Type[1]	Target LOS	Existing LOS[2]	Existing Plus Project LOS[2]	Existing Delay (D1)	Existing Plus Project Delay (D2)	D2-D1	Significant Impact?
8	Old Alturas Road/Old Oregon Trail	AWSC	E	F	F	72.3	74	1.7	No
10	**Airport Road/SR 44 WB Ramps**	TWSC	C	F	F	OVR	OVR	>5 Sec	**Yes**

Notes:

1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections

OVR = Delay exceeds 300 seconds

In addition, there will be a significant traffic safety impact on the Deschutes Road (Boyle Rd to SR 44) segment.

Year 2035 Plus Project: Project Mitigation

The following improvements are proposed to provide acceptable operations at intersections where a project significant impact is identified. Table 19 presents the mitigated LOS operations assuming these improvements.

Intersection 10: Airport Road & SR 44 WB Ramps:

This TWSC intersection is projected to operate at an unacceptable LOS F during both AM and PM peak hours during *Year 2035* conditions. This intersection meets the peak hour signal warrant under *Year 2035* AM and PM peak hour conditions. The following improvements will provide adequate capacity to result in acceptable LOS C or better conditions.

- Install a Traffic Signal

  OR

- Install a Modern Roundabout

It is recommended that the traffic signal at this intersection be coordinated with the signals that exist at the Old Oregon Trail Road & Old 44 Drive and Airport Road & SR 44 EB Ramps intersections.

Significance after Mitigation

Project mitigation is to pay traffic impact fee or/and fair share contribution towards the construction of these improvements. The stated improvement was planned and funded in 2008. The project shall still pay the required traffic impact fee for the improvements in the future conditions. The project impact till the improvement is constructed is unavoidable and significant.

Intersection 13: Boyle Road & Deschutes Road:

This TWSC intersection is projected to operate at an unacceptable LOS F during AM peak hour *Year 2035* conditions. This intersection meets the peak hour signal warrant under *Year 2035* AM peak hour conditions. The following improvement will provide adequate capacity to result in acceptable LOS E or better conditions.

- Install an All-Way Stop Control

Significance after Mitigation

Project mitigation is to pay traffic impact fee or/and fair share contribution towards the construction of these improvements. The project impact till the improvement is constructed is unavoidable and significant.

TABLE 19
MITIGATED YEAR 2035 PLUS PROJECT INTERSECTION LOS

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
10	Airport Road/SR 44 WB Ramps	Signal	C	8.1	A	Yes	17.9	B	Yes
10	Airport Road/SR 44 WB Ramps	RDB	C	6.6	A	Yes	7.7	A	Yes
13	Boyle Road/Deschutes Road	AWSC	E	17.8	C	Yes	10.5	B	No

Notes:
1. TWSC = Two Way Stop Control, RDB = Roundabout, AWSC = All Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections
3. Warrant = Based on California MUTCD Warrant 3

The following improvements are proposed to mitigate the project's impact on traffic safety:

Deschutes Road (Boyle Rd to SR 44):

Installation of the following is recommended for Existing Plus Project conditions:

- Caltrans standard W2 intersection warning signs with W16-8P advance street name plaques at Lassen View Drive, Beryl Drive, Sunny Oaks Drive, Wesley Drive, Robledo Road, Oak Meadow Road, Oak Tree Lane, and Coloma Drive.

Year 2035 Plus Project Access Queuing

As stated in the Project access and site circulation, there does not seem to be a queuing issue qualitatively on Old Alturas Road/Seven Lake Road (East - West) from Old Alturas Road (North) to Project Roadway "A." However, a micro-simulation was conducted for *Year 2035 Plus Project* PM peak hour volumes using SimTraffic to quantitatively justify no queuing issue occurs on Old Alturas Road (East - West) from Old Alturas Road (North - South) to Project Roadway "A." The two intersection layouts were similar to what was submitted by S2J2 to the Planning Department

of Shasta County on November 10, 2010. The Old Alturas Road had free flow traffic with stop control on Seven Lakes Road at Project Roadway "A."

As per the standard industry practice, five simulation runs were conducted for 60 minutes of duration. The resulting output showed that the 95th percentile queuing eastbound on Seven Lakes Road was 45 feet and from project Roadway "A" was 31 feet for *Year 2035 Plus Project* Conditions. The results can be found in Appendix. The 95th percentile queuing is less than the stacking space available at both stop control roadway. Therefore, the segments between Old Alturas Road/Seven Lake Road (East - West) from Old Alturas Road (North) to Project Roadway "A" including minor streets are projected to operate at acceptable LOS without experiencing any queuing.

Fair-Share of Improvement Cost Calculations

Fair-share calculations have been identified for all intersections, which are projected to operate at unacceptable LOS under no project conditions, and experience an increase in delay with the addition of project traffic. Below is a listing of each of the study intersections warranting improvements, the corresponding improvements that the proposed project would be required to pay a fair-share of improvement cost towards, and the proposed project's equitable share of these improvements. The proposed project's equitable share is calculated using the method for calculating equitable mitigation measures outlined in the *Caltrans Guide for the Preparation of Traffic Impact Studies* (State of California, DOT, December 2002), which is shown below:

$P = T / (T_B – T_E)$ where,

P = The equitable share for the project's traffic impact.

T = The vehicle trips generated by the project during the peak hour of adjacent roadway facility in vehicles per hour (vph).

T_B = The forecasted traffic volume on an impacted roadway facility at the time of general plan build-out (e.g. 20 year model or the furthest model date feasible), vph.

T_E = The traffic volume existing on the impacted roadway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

Note that the percent fair-share calculated using the above formula is reported to the nearest whole number and the calculations are based on the PM Peak Hour volumes.

Intersection #10: State Route 44 WB Ramps/Airport Road

Fair-Share %: T= 30

T_E= 1,388

T_B= 1,870

P= **6%**

Intersection #13: Boyle Road/Deschutes Road

Fair-Share %: T= 40

T_E= 434

T_B= 740

P= **13%**

APPENDIX

SYNCHRO (HCM 2010) REPORTS
SIMTRAFFIC REPORT
SIDRA REPORTS
WARRANT SHEETS
PROJECT DRIVEWAY EXHIBIT
TDM SELECT ZONE MODEL PLOTS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	116	156	110	264	148	51
Number	2	12	1	6	3	18
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	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	352	299	266	926	281	251
Arrive On Green	0.19	0.00	0.15	0.51	0.16	0.16
Sat Flow, veh/h	1810	1538	1723	1810	1723	1538
Grp Volume(v), veh/h	135	0	128	307	172	59
Grp Sat Flow(s),veh/h/ln	1810	1538	1723	1810	1723	1538
Q Serve(g_s), s	1.6	0.0	1.7	2.5	2.3	0.8
Cycle Q Clear(g_c), s	1.6	0.0	1.7	2.5	2.3	0.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	352	299	266	926	281	251
V/C Ratio(X)	0.38	0.00	0.48	0.33	0.61	0.23
Avail Cap(c_a), veh/h	1765	1500	1471	3604	1611	1438
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	9.5	3.5	9.6	9.0
Incr Delay (d2), s/veh	0.7	0.0	1.4	0.2	2.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.4	0.0	0.5	0.2	0.8	0.2
Lane Grp Delay (d), s/veh	9.3	0.0	10.9	3.7	11.7	9.4
Lane Grp LOS	A		B	A	B	A
Approach Vol, veh/h	135			435	231	
Approach Delay, s/veh	9.3			5.8	11.1	
Approach LOS	A			A	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	8.8		7.8	16.6		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	24.0		21.0	49.0		
Max Q Clear Time (g_c+I1), s	3.6		3.7	4.5		
Green Ext Time (p_c), s	1.4		0.3	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	11	18	31	12	83	1	114	39	97	160	12
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	22	13	22	37	14	100	1	137	47	117	193	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	657	624	203	617	600	171	198	0	0	189	0	0
Stage 1	432	432	-	168	168	-	-	-	-	-	-	-
Stage 2	225	192	-	449	432	-	-	-	-	-	-	-
Follow-up Headway	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Capacity-1 Maneuver	377	400	835	401	413	870	1369	-	-	1379	-	-
Stage 1	600	581	-	832	758	-	-	-	-	-	-	-
Stage 2	775	740	-	587	581	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	297	358	828	349	370	863	1363	-	-	1373	-	-
Mov Capacity-2 Maneuver	297	358	-	349	370	-	-	-	-	-	-	-
Stage 1	597	523	-	828	754	-	-	-	-	-	-	-
Stage 2	669	736	-	502	523	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	13.4	0	2.8
HCM LOS	C	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1363	-	-	416	579	1373	-	-
HCM Control Delay, s	7.644	0	-	15	13.4	7.866	0	-
HCM Lane V/C Ratio	0.00	-	-	0.14	0.26	0.09	-	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.5	1.0	0.3	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	24	0	3	3	1	24
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	0	3	3	1	27
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Minor 1			
Conflicting Flow All	27	0	88	10	5	-
Stage 1	-	-	59	-	-	-
Stage 2	-	-	29	-	-	-
Follow-up Headway	-	-	4.018	3.318	2.218	-
Pot Capacity-1 Maneuver	-	-	802	1071	1616	-
Stage 1	-	-	846	-	-	-
Stage 2	-	-	-	-	-	-
Time blocked-Platoon, %	0	-	0	0	0	-
Mov Capacity-1 Maneuver	-	-	# 0	1062	1609	-
Mov Capacity-2 Maneuver	-	-	# 0	-	-	-
Stage 1	-	-	# 0	-	-	-
Stage 2	-	-	# 0	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	-	0.3
HCM LOS	-	-	-

Minor Lane / Major Mvmt	EBL	EBT	WBLn1	SBL	SBR
Cap, veh/h	-	-	-	1609	-
HCM Control Delay, s	-	-	-	7.239	-
HCM Lane V/C Ratio	-	-	-	0.00	0.00
HCM Lane LOS	-	-	-	A	-
HCM 95th-tile Q, veh	-	-	-	0.0	0.0

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	11	102	187	3	39	37	477	127	56	657	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	123	82	179	422	15	182	67	1265	566	89	1320	19
Arrive On Green	0.12	0.12	0.12	0.13	0.13	0.13	0.04	0.36	0.36	0.05	0.38	0.38
Sat Flow, veh/h	1064	709	1553	3375	119	1452	1740	3471	1553	1740	3502	51
Grp Volume(v), veh/h	35	0	128	234	0	53	46	596	159	70	407	426
Grp Sat Flow(s),veh/h/ln	1774	0	1553	1688	0	1571	1740	1736	1553	1740	1736	1818
Q Serve(g_s), s	0.8	0.0	3.7	3.0	0.0	1.4	1.2	6.1	3.4	1.9	8.9	8.9
Cycle Q Clear(g_c), s	0.8	0.0	3.7	3.0	0.0	1.4	1.2	6.1	3.4	1.9	8.9	8.9
Prop In Lane	0.60		1.00	1.00		0.92	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	205	0	179	422	0	197	67	1265	566	89	654	685
V/C Ratio(X)	0.17	0.00	0.71	0.55	0.00	0.27	0.69	0.47	0.28	0.79	0.62	0.62
Avail Cap(c_a), veh/h	610	0	534	1161	0	540	224	1716	768	337	970	1016
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	19.8	19.1	0.0	18.4	22.1	11.3	10.5	21.8	11.8	11.8
Incr Delay (d2), s/veh	0.4	0.0	5.2	1.1	0.0	0.7	11.7	0.3	0.3	14.0	1.0	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	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.4	0.0	1.6	1.2	0.0	0.6	0.7	2.3	1.1	1.1	3.3	3.5
Lane Grp Delay (d), s/veh	19.0	0.0	25.0	20.3	0.0	19.2	33.8	11.6	10.7	35.8	12.8	12.7
Lane Grp LOS	B		C	C		B	C	B	B	D	B	B
Approach Vol, veh/h		163			287			801			903	
Approach Delay, s/veh		23.7			20.1			12.7			14.5	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		9.4			9.8		5.8	21.0		6.4	21.5	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		6.0	23.0		9.0	26.0	
Max Q Clear Time (g_c+I1), s		5.7			5.0		3.2	8.1		3.9	10.9	
Green Ext Time (p_c), s		0.4			0.9		0.0	6.6		0.1	6.7	

Intersection Summary		
HCM 2010 Ctrl Delay		15.3
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	45	1	89	0	599	416	0	352	594
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	54	1	107	0	722	501	0	424	716
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	939	1151	371	424	0	0	727	0	0
Stage 1	727	727	-	-	-	-	-	-	-
Stage 2	212	424	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	263	197	626	1132	-	-	872	-	-
Stage 1	439	427	-	-	-	-	-	-	-
Stage 2	803	585	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	261	# 0	621	1127	-	-	868	-	-
Mov Capacity-2 Maneuver	261	# 0	-	-	-	-	-	-	-
Stage 1	437	# 0	-	-	-	-	-	-	-
Stage 2	800	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1127	-	-	339	621	868	-	-
HCM Control Delay, s	0	-	-	19.5	11.6	0	-	-
HCM Lane V/C Ratio	-	-	-	0.27	0.12	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.1	0.4	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	332	0	212	0	0	0	0	683	91	134	263	0
Number	5	2	12				3	8	18	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	184.5	184.5	184.5				0.0	184.5	184.5	184.5	184.5	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	536	0	476				0	1212	542	221	1914	0
Arrive On Green	0.31	0.00	0.31				0.00	0.35	0.00	0.13	0.55	0.00
Sat Flow, veh/h	1757	0	1560				0	3597	1568	1757	3597	0
Grp Volume(v), veh/h	420	0	268				0	865	0	170	333	0
Grp Sat Flow(s),veh/h/ln	1757	0	1560				0	1752	1568	1757	1752	0
Q Serve(g_s), s	11.7	0.0	7.7				0.0	11.5	0.0	5.0	2.6	0.0
Cycle Q Clear(g_c), s	11.7	0.0	7.7				0.0	11.5	0.0	5.0	2.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	536	0	476				0	1212	542	221	1914	0
V/C Ratio(X)	0.78	0.00	0.56				0.00	0.71	0.00	0.77	0.17	0.00
Avail Cap(c_a), veh/h	882	0	783				0	1760	787	457	2933	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	15.7				0.0	15.3	0.0	22.7	6.1	0.0
Incr Delay (d2), s/veh	2.6	0.0	1.0				0.0	0.8	0.0	5.5	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
%ile Back of Q (50%), veh/ln	5.0	0.0	2.9				0.0	4.7	0.0	2.4	0.9	0.0
Lane Grp Delay (d), s/veh	19.6	0.0	16.7				0.0	16.1	0.0	28.3	6.2	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		688						865			503	
Approach Delay, s/veh		18.5						16.1			13.6	
Approach LOS		B						B			B	

Timer												
Assigned Phs		2						8		7	4	
Phs Duration (G+Y+Rc), s		20.4						22.6		10.8	33.4	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		27.0						27.0		14.0	45.0	
Max Q Clear Time (g_c+I1), s		13.7						13.5		7.0	4.6	
Green Ext Time (p_c), s		2.7						5.1		0.3	6.9	

Intersection Summary		
HCM 2010 Ctrl Delay		16.3
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	51	88	108	51	136	37	81	151	32	22	113	37
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	109	133	63	168	46	100	186	40	27	140	46
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	15.5	15.2	17.7	12.5
HCM LOS	C	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	21%	23%	16%	0%
Vol Thru, %	57%	36%	61%	84%	0%
Vol Right, %	12%	44%	17%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	247	224	135	37
LT Vol	151	88	136	113	0
Through Vol	32	108	37	0	37
RT Vol	81	51	51	22	0
Lane Flow Rate	326	305	277	167	46
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.575	0.515	0.484	0.329	0.08
Departure Headway (Hd)	6.35	6.083	6.3	7.114	6.314
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	567	592	570	505	566
Service Time	4.4	4.135	4.352	4.871	4.07
HCM Lane V/C Ratio	0.575	0.515	0.486	0.331	0.081
HCM Control Delay	17.7	15.5	15.2	13.3	9.6
HCM Lane LOS	C	C	C	B	A
HCM 95th-tile Q	3.6	2.9	2.6	1.4	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	4	34	189	6	31	105	282	152	48	239	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	13	10	83	290	55	292	163	420	226	76	542	45
Arrive On Green	0.01	0.06	0.06	0.17	0.22	0.22	0.10	0.39	0.39	0.05	0.34	0.34
Sat Flow, veh/h	1691	167	1368	1691	246	1300	1691	1087	585	1691	1617	135
Grp Volume(v), veh/h	7	0	46	228	0	44	127	0	523	58	0	312
Grp Sat Flow(s),veh/h/ln	1691	0	1534	1691	0	1546	1691	0	1672	1691	0	1752
Q Serve(g_s), s	0.2	0.0	1.4	6.1	0.0	1.1	3.5	0.0	13.3	1.6	0.0	6.9
Cycle Q Clear(g_c), s	0.2	0.0	1.4	6.1	0.0	1.1	3.5	0.0	13.3	1.6	0.0	6.9
Prop In Lane	1.00		0.89	1.00		0.84	1.00		0.35	1.00		0.08
Lane Grp Cap(c), veh/h	13	0	93	290	0	348	163	0	646	76	0	587
V/C Ratio(X)	0.56	0.00	0.49	0.79	0.00	0.13	0.78	0.00	0.81	0.76	0.00	0.53
Avail Cap(c_a), veh/h	142	0	516	534	0	878	356	0	1020	142	0	848
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	23.5	0.0	21.6	18.9	0.0	14.7	21.0	0.0	13.0	22.4	0.0	12.8
Incr Delay (d2), s/veh	33.4	0.0	4.0	4.7	0.0	0.2	7.9	0.0	2.7	14.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.2	0.0	0.6	2.6	0.0	0.4	1.6	0.0	4.8	0.9	0.0	2.5
Lane Grp Delay (d), s/veh	56.9	0.0	25.6	23.6	0.0	14.9	28.9	0.0	15.7	36.8	0.0	13.5
Lane Grp LOS	E		C	C		B	C		B	D		B
Approach Vol, veh/h		53			272			650			370	
Approach Delay, s/veh		29.7			22.2			18.3			17.2	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.4	6.9		12.2	14.7		8.6	22.4		6.1	19.9	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		15.0	27.0		10.0	29.0		4.0	23.0	
Max Q Clear Time (g_c+I1), s	2.2	3.4		8.1	3.1		5.5	15.3		3.6	8.9	
Green Ext Time (p_c), s	0.0	0.2		0.4	0.3		0.1	3.1		0.0	3.1	

Intersection Summary		
HCM 2010 Ctrl Delay		19.2
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	85	1	44	134	495	0	0	256	206
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	99	1	51	156	576	0	0	298	240
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1309	1429	586	537	0	0	581	0	0
Stage 1			892	892	-	-	-	-	-	-	-
Stage 2			417	537	-	-	-	-	-	-	-
Follow-up Headway			3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Capacity-1 Maneuver			174	133	506	1021	-	-	983	-	-
Stage 1			397	358	-	-	-	-	-	-	-
Stage 2			661	520	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			146	# 0	502	1017	-	-	979	-	-
Mov Capacity-2 Maneuver			146	# 0	-	-	-	-	-	-	-
Stage 1			335	# 0	-	-	-	-	-	-	-
Stage 2			658	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	69.5	2	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	1017	-	-	193	979	-	-
HCM Control Delay, s	9.179	-	-	69.5	0	-	-
HCM Lane V/C Ratio	0.15	-	-	0.78	-	-	-
HCM Lane LOS	A	-	-	F	A	-	-
HCM 95th-tile Q, veh	0.5	-	-	5.4	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	217	0	240	0	0	0	0	412	130	39	302	0
Number	5	2	12				3	8	18	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	181.0	181.0	181.0				0.0	181.0	181.0	181.0	181.0	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	460	0	411				0	698	594	69	956	0
Arrive On Green	0.27	0.00	0.27				0.00	0.39	0.39	0.04	0.53	0.00
Sat Flow, veh/h	1723	0	1538				0	1810	1538	1723	1810	0
Grp Volume(v), veh/h	255	0	282				0	485	153	46	355	0
Grp Sat Flow(s),veh/h/ln	1723	0	1538				0	1810	1538	1723	1810	0
Q Serve(g_s), s	5.0	0.0	6.4				0.0	8.8	2.7	1.0	4.5	0.0
Cycle Q Clear(g_c), s	5.0	0.0	6.4				0.0	8.8	2.7	1.0	4.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	460	0	411				0	698	594	69	956	0
V/C Ratio(X)	0.55	0.00	0.69				0.00	0.69	0.26	0.66	0.37	0.00
Avail Cap(c_a), veh/h	970	0	865				0	1805	1534	309	2314	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	12.9				0.0	10.1	8.2	18.5	5.4	0.0
Incr Delay (d2), s/veh	1.0	0.0	2.0				0.0	1.3	0.2	10.4	0.2	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
%ile Back of Q (50%), veh/ln	1.9	0.0	2.3				0.0	3.1	0.8	0.6	1.2	0.0
Lane Grp Delay (d), s/veh	13.4	0.0	14.9				0.0	11.3	8.4	28.9	5.6	0.0
Lane Grp LOS	B		B					B	A	C	A	
Approach Vol, veh/h		537						638			401	
Approach Delay, s/veh		14.2						10.6			8.3	
Approach LOS		B						B			A	

Timer												
Assigned Phs		2						8		7	4	
Phs Duration (G+Y+Rc), s		14.4						19.1		5.6	24.7	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		22.0						39.0		7.0	50.0	
Max Q Clear Time (g_c+I1), s		8.4						10.8		3.0	6.5	
Green Ext Time (p_c), s		2.0						4.3		0.0	4.4	

Intersection Summary												
HCM 2010 Ctrl Delay			11.2									
HCM 2010 LOS			B									

Notes												

Intersection	
Intersection Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	119	3	28	62	6	66
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	129	3	30	67	7	72
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	120	40	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	876	1031	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	865	1022	-	-	1569	-
Mov Capacity-2 Maneuver	865	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.6
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	865	1022	1569	-
HCM Control Delay, s	-	-	9.9	8.5	7.304	-
HCM Lane V/C Ratio	-	-	0.15	0.00	0.00	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th-tile Q, veh	-	-	0.5	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	39	63	89	35	6	27	133	69	6	246	9
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	51	82	116	45	8	35	173	90	8	319	12
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	665	683	335	705	645	228	336	0	0	267	0	0
Stage 1	346	346	-	293	293	-	-	-	-	-	-	-
Stage 2	319	337	-	412	352	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	374	372	707	351	391	811	1223	-	-	1297	-	-
Stage 1	670	635	-	715	670	-	-	-	-	-	-	-
Stage 2	693	641	-	617	632	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	324	356	701	267	374	804	1218	-	-	1292	-	-
Mov Capacity-2 Maneuver	324	356	-	267	374	-	-	-	-	-	-	-
Stage 1	648	628	-	692	648	-	-	-	-	-	-	-
Stage 2	617	620	-	496	625	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	31.6	0.9	0.2
HCM LOS	C	D	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1218	-	-	498	299	1292	-	-
HCM Control Delay, s	8.043	-	-	15	31.6	7.803	-	-
HCM Lane V/C Ratio	0.03	-	-	0.28	0.57	0.01	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th-tile Q, veh	0.1	-	-	1.1	3.2	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	43.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	25	181	22	44	146	133	334	11	62	412	49
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	74	30	221	27	54	178	162	407	13	76	502	60
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	21.9	26.7	62.2	43.4
HCM LOS	C	D	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	23%	0%
Vol Thru, %	0%	97%	0%	100%	0%	0%	23%	77%	81%
Vol Right, %	0%	3%	0%	0%	100%	0%	77%	0%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	345	61	25	181	22	190	268	255
LT Vol	0	334	0	25	0	0	44	206	206
Through Vol	0	11	0	0	181	0	146	0	49
RT Vol	133	0	61	0	0	22	0	62	0
Lane Flow Rate	162	421	74	30	221	27	232	327	311
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.457	1	0.221	0.086	0.582	0.081	0.631	0.852	0.789
Departure Headway (Hd)	10.137	9.596	10.693	10.194	9.496	10.833	9.803	9.38	9.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	357	383	335	351	380	330	366	386	395
Service Time	7.837	7.296	8.482	7.983	7.285	8.633	7.603	7.158	6.908
HCM Lane V/C Ratio	0.454	1.099	0.221	0.085	0.582	0.082	0.634	0.847	0.787
HCM Control Delay	21.1	78	16.5	13.9	24.8	14.6	28.1	47.7	38.8
HCM Lane LOS	C	F	C	B	C	B	D	E	E
HCM 95th-tile Q	2.3	11.9	0.8	0.3	3.5	0.3	4.1	8.1	6.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	38.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	2	41	86	5	16	52	463	122	13	540	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	20	2	48	100	6	19	60	538	142	15	628	9
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	12.4	15.8	52	29.9
HCM LOS	B	C	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	89%	0%	80%	100%	0%	0%
Vol Thru, %	0%	100%	0%	11%	0%	5%	0%	100%	96%
Vol Right, %	0%	0%	100%	0%	100%	15%	0%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	463	122	19	41	107	13	360	188
LT Vol	0	463	0	2	0	5	0	360	180
Through Vol	0	0	122	0	41	16	0	0	8
RT Vol	52	0	0	17	0	86	13	0	0
Lane Flow Rate	60	538	142	22	48	124	15	419	219
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.131	1	0.258	0.059	0.112	0.313	0.032	0.842	0.438
Departure Headway (Hd)	7.779	7.27	6.557	9.57	8.431	9.06	7.736	7.237	7.207
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	501	550	376	427	398	460	498	496
Service Time	5.492	4.983	4.27	7.282	6.143	6.771	5.524	5.024	4.994
HCM Lane V/C Ratio	0.13	1.074	0.258	0.059	0.112	0.312	0.033	0.841	0.442
HCM Control Delay	11.7	67.2	11.5	12.9	12.2	15.8	10.8	38	15.6
HCM Lane LOS	B	F	B	B	B	C	B	E	C
HCM 95th-tile Q	0.4	13.6	1	0.2	0.4	1.3	0.1	8.5	2.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	24	0	40	160	597	0	0	205	462
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	27	0	45	182	678	0	0	233	525
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1280	1280	349	233	0	0	683	0	0
Stage 1			1047	1047	-	-	-	-	-	-	-
Stage 2			233	233	-	-	-	-	-	-	-
Follow-up Headway			3.538	4.038	3.338	2.236	-	-	2.24	-	-
Pot Capacity-1 Maneuver			168	163	643	1323	-	-	893	-	-
Stage 1			296	301	-	-	-	-	-	-	-
Stage 2			800	707	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			144	0	638	1317	-	-	889	-	-
Mov Capacity-2 Maneuver			144	0	-	-	-	-	-	-	-
Stage 1			254	0	-	-	-	-	-	-	-
Stage 2			797	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.8	1.7	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1317	-	-	144	406	889	-	-
HCM Control Delay, s	8.171	-	-	33.6	15.2	0	-	-
HCM Lane V/C Ratio	0.14	-	-	0.13	0.13	-	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th-tile Q, veh	0.5	-	-	0.4	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	365	0	109	0	0	0	0	392	29	28	201	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	424	0	127	0	0	0	0	456	34	33	234	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	14.3	15.2	16.9
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	196	29	183	183	109	28	201
LT Vol	196	196	0	0	0	0	0	201
Through Vol	0	0	29	0	0	109	0	0
RT Vol	0	0	0	183	183	0	28	0
Lane Flow Rate	228	228	34	212	212	127	33	234
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.452	0.452	0.043	0.427	0.427	0.212	0.074	0.498
Departure Headway (Hd)	7.236	7.236	4.625	7.243	7.243	6.032	8.176	7.665
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	501	501	762	494	494	591	441	472
Service Time	4.936	4.936	2.424	5.029	5.029	3.817	5.876	5.365
HCM Lane V/C Ratio	0.455	0.455	0.045	0.429	0.429	0.215	0.075	0.496
HCM Control Delay	15.8	15.8	7.6	15.4	15.4	10.5	11.5	17.7
HCM Lane LOS	C	C	A	C	C	B	B	C
HCM 95th-tile Q	2.3	2.3	0.1	2.1	2.1	0.8	0.2	2.7

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	233	96	70	149	91	99
Number	2	12	1	6	7	14
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	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1
Cap, veh/h	705	599	92	914	671	599
Arrive On Green	0.38	0.00	0.05	0.50	0.38	0.38
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	238	0	71	152	93	101
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	6.0	0.0	2.6	3.0	2.3	2.8
Cycle Q Clear(g_c), s	6.0	0.0	2.6	3.0	2.3	2.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	705	599	92	914	671	599
V/C Ratio(X)	0.34	0.00	0.77	0.17	0.14	0.17
Avail Cap(c_a), veh/h	705	599	403	1325	671	599
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	30.6	9.1	13.2	13.3
Incr Delay (d2), s/veh	1.3	0.0	12.9	0.1	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.5	0.0	1.4	1.0	0.9	1.1
Lane Grp Delay (d), s/veh	15.6	0.0	43.5	9.2	13.6	14.0
Lane Grp LOS	B		D	A	B	B
Approach Vol, veh/h	238			223	194	
Approach Delay, s/veh	15.6			20.1	13.8	
Approach LOS	B			C	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	29.0		7.4	36.4		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	25.0		15.0	47.0		
Max Q Clear Time (g_c+I1), s	8.0		4.6	5.0		
Green Ext Time (p_c), s	1.2		0.1	1.3		

Intersection Summary						
HCM 2010 Ctrl Delay			16.6			
HCM 2010 LOS			B			

Notes

Intersection	
Intersection Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	5	8	27	4	43	9	103	18	53	89	25
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	6	9	31	5	50	10	120	21	62	103	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	415	399	113	395	388	140	108	0	0	146	0	0
Stage 1	232	232	-	156	156	-	-	-	-	-	-	-
Stage 2	183	167	-	239	232	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	548	539	940	565	547	908	1483	-	-	1436	-	-
Stage 1	771	713	-	846	769	-	-	-	-	-	-	-
Stage 2	819	760	-	764	713	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	489	506	932	527	513	900	1477	-	-	1430	-	-
Mov Capacity-2 Maneuver	489	506	-	527	513	-	-	-	-	-	-	-
Stage 1	762	677	-	837	760	-	-	-	-	-	-	-
Stage 2	760	752	-	712	677	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	10.9	0.5	2.4
HCM LOS	B	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1477	-	-	564	693	1430	-	-
HCM Control Delay, s	7.455	0	-	11.8	10.9	7.631	0	-
HCM Lane V/C Ratio	0.01	-	-	0.06	0.12	0.04	-	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.2	0.4	0.1	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	1	2	0	1	35
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	1	2	0	1	38
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Minor 1			
Conflicting Flow All	38	0	106	11	6	-
Stage 1	-	-	66	-	-	-
Stage 2	-	-	40	-	-	-
Follow-up Headway	-	-	4.018	3.318	2.218	-
Pot Capacity-1 Maneuver	-	-	784	1070	1615	-
Stage 1	-	-	840	-	-	-
Stage 2	-	-	-	-	-	-
Time blocked-Platoon, %	0	-	0	0	0	-
Mov Capacity-1 Maneuver	-	-	# 0	1061	1608	-
Mov Capacity-2 Maneuver	-	-	# 0	-	-	-
Stage 1	-	-	# 0	-	-	-
Stage 2	-	-	# 0	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	-	0.2
HCM LOS	-	-	-

Minor Lane / Major Mvmt	EBL	EBT	WBLn1	SBL	SBR
Cap, veh/h	-	-	-	1608	-
HCM Control Delay, s	-	-	-	7.24	-
HCM Lane V/C Ratio	-	-	-	0.00	0.00
HCM Lane LOS	-	-	-	A	-
HCM 95th-tile Q, veh	-	-	-	0.0	0.0

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	6	45	239	5	51	101	440	111	28	398	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	65	35	88	516	20	220	144	1147	513	51	930	49
Arrive On Green	0.06	0.06	0.06	0.15	0.15	0.15	0.08	0.32	0.32	0.03	0.27	0.27
Sat Flow, veh/h	1173	631	1583	3442	134	1470	1774	3539	1583	1774	3419	181
Grp Volume(v), veh/h	20	0	49	260	0	60	110	478	121	30	224	232
Grp Sat Flow(s),veh/h/ln	1804	0	1583	1721	0	1603	1774	1770	1583	1774	1770	1831
Q Serve(g_s), s	0.4	0.0	1.1	2.5	0.0	1.2	2.2	3.8	2.0	0.6	3.8	3.8
Cycle Q Clear(g_c), s	0.4	0.0	1.1	2.5	0.0	1.2	2.2	3.8	2.0	0.6	3.8	3.8
Prop In Lane	0.65		1.00	1.00		0.92	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	100	0	88	516	0	240	144	1147	513	51	481	498
V/C Ratio(X)	0.20	0.00	0.56	0.50	0.00	0.25	0.77	0.42	0.24	0.59	0.46	0.47
Avail Cap(c_a), veh/h	797	0	700	1616	0	753	588	2443	1093	294	928	961
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	16.7	14.2	0.0	13.6	16.3	9.6	9.0	17.4	11.0	11.0
Incr Delay (d2), s/veh	1.0	0.0	5.5	0.8	0.0	0.5	8.2	0.2	0.2	10.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.2	0.0	0.5	1.0	0.0	0.4	1.2	1.4	0.7	0.4	1.5	1.5
Lane Grp Delay (d), s/veh	17.3	0.0	22.2	14.9	0.0	14.1	24.5	9.8	9.2	27.7	11.7	11.7
Lane Grp LOS	B		C	B		B	C	A	A	C	B	B
Approach Vol, veh/h		69			320			709			486	
Approach Delay, s/veh		20.8			14.8			12.0			12.7	
Approach LOS		C			B			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		6.0			9.4		6.9	15.7		5.0	13.8	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			17.0		12.0	25.0		6.0	19.0	
Max Q Clear Time (g_c+I1), s		3.1			4.5		4.2	5.8		2.6	5.8	
Green Ext Time (p_c), s		0.1			1.1		0.2	4.6		0.0	4.0	

Intersection Summary		
HCM 2010 Ctrl Delay		13.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	51	2	91	0	618	306	0	347	337
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	58	2	103	0	702	348	0	394	383
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	904	1101	361	394	0	0	707	0	0
Stage 1	707	707	-	-	-	-	-	-	-
Stage 2	197	394	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	277	211	636	1161	-	-	887	-	-
Stage 1	450	436	-	-	-	-	-	-	-
Stage 2	817	604	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	275	# 0	631	1156	-	-	883	-	-
Mov Capacity-2 Maneuver	275	# 0	-	-	-	-	-	-	-
Stage 1	448	# 0	-	-	-	-	-	-	-
Stage 2	814	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1156	-	-	348	631	883	-	-
HCM Control Delay, s	0	-	-	19.2	11.4	0	-	-
HCM Lane V/C Ratio	-	-	-	0.27	0.11	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.1	0.4	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	416	1	432	0	0	0	0	508	35	70	328	0
Number	7	4	14				5	2	12	1	6	16
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	186.3	186.3	186.3				0.0	186.3	186.3	186.3	186.3	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	744	2	665				0	954	427	105	1460	0
Arrive On Green	0.42	0.42	0.42				0.00	0.27	0.00	0.06	0.41	0.00
Sat Flow, veh/h	1771	4	1583				0	3632	1583	1774	3632	0
Grp Volume(v), veh/h	490	0	508				0	598	0	82	386	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1770	1583	1774	1770	0
Q Serve(g_s), s	10.6	0.0	13.1				0.0	7.1	0.0	2.2	3.4	0.0
Cycle Q Clear(g_c), s	10.6	0.0	13.1				0.0	7.1	0.0	2.2	3.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	746	0	665				0	954	427	105	1460	0
V/C Ratio(X)	0.66	0.00	0.76				0.00	0.63	0.00	0.78	0.26	0.00
Avail Cap(c_a), veh/h	1372	0	1224				0	1553	695	371	2588	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.1	0.0	11.8				0.0	15.4	0.0	22.2	9.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.9				0.0	0.7	0.0	11.7	0.1	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
%ile Back of Q (50%), veh/ln	4.2	0.0	4.6				0.0	2.8	0.0	1.3	1.3	0.0
Lane Grp Delay (d), s/veh	12.1	0.0	13.7				0.0	16.0	0.0	33.9	9.4	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		998						598			468	
Approach Delay, s/veh		12.9						16.0			13.7	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		24.1						16.9		6.8	23.7	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		37.0						21.0		10.0	35.0	
Max Q Clear Time (g_c+I1), s		15.1						9.1		4.2	5.4	
Green Ext Time (p_c), s		5.0						3.8		0.1	5.1	

Intersection Summary												
HCM 2010 Ctrl Delay			14.0									
HCM 2010 LOS			B									

Notes												

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	77	124	53	27	73	22	47	158	54	32	121	60
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	132	56	29	78	23	50	168	57	34	129	64
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	12.4	10.3	12.4	10.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	30%	22%	21%	0%
Vol Thru, %	61%	49%	60%	79%	0%
Vol Right, %	21%	21%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	259	254	122	153	60
LT Vol	158	124	73	121	0
Through Vol	54	53	22	0	60
RT Vol	47	77	27	32	0
Lane Flow Rate	276	270	130	163	64
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.419	0.412	0.207	0.279	0.095
Departure Headway (Hd)	5.472	5.486	5.745	6.174	5.357
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	656	654	622	581	667
Service Time	3.518	3.532	3.803	3.924	3.107
HCM Lane V/C Ratio	0.421	0.413	0.209	0.281	0.096
HCM Control Delay	12.4	12.4	10.3	11.3	8.7
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	2.1	2	0.8	1.1	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	13	69	188	1	37	21	282	162	30	313	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	24	24	124	280	9	366	41	416	239	54	706	4
Arrive On Green	0.01	0.09	0.09	0.16	0.24	0.24	0.02	0.37	0.37	0.03	0.38	0.38
Sat Flow, veh/h	1774	259	1363	1774	36	1553	1774	1112	638	1774	1851	10
Grp Volume(v), veh/h	13	0	94	216	0	44	24	0	510	34	0	362
Grp Sat Flow(s),veh/h/ln	1774	0	1622	1774	0	1589	1774	0	1750	1774	0	1861
Q Serve(g_s), s	0.3	0.0	2.6	5.4	0.0	1.0	0.6	0.0	11.9	0.9	0.0	6.9
Cycle Q Clear(g_c), s	0.3	0.0	2.6	5.4	0.0	1.0	0.6	0.0	11.9	0.9	0.0	6.9
Prop In Lane	1.00		0.84	1.00		0.98	1.00		0.36	1.00		0.01
Lane Grp Cap(c), veh/h	24	0	148	280	0	374	41	0	654	54	0	710
V/C Ratio(X)	0.55	0.00	0.64	0.77	0.00	0.12	0.59	0.00	0.78	0.63	0.00	0.51
Avail Cap(c_a), veh/h	154	0	562	538	0	895	154	0	1137	154	0	1209
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	22.6	0.0	20.3	18.6	0.0	13.9	22.3	0.0	12.8	22.1	0.0	11.0
Incr Delay (d2), s/veh	18.5	0.0	4.5	4.5	0.0	0.1	12.8	0.0	2.1	11.2	0.0	0.6
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 Back of Q (50%), veh/ln	0.3	0.0	1.1	2.4	0.0	0.3	0.4	0.0	4.3	0.5	0.0	2.5
Lane Grp Delay (d), s/veh	41.2	0.0	24.7	23.1	0.0	14.0	35.2	0.0	14.8	33.4	0.0	11.5
Lane Grp LOS	D		C	C		B	D		B	C		B
Approach Vol, veh/h		107			260			534			396	
Approach Delay, s/veh		26.7			21.6			15.7			13.4	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.6	8.2		11.3	14.9		5.1	21.3		5.4	21.6	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		14.0	26.0		4.0	30.0		4.0	30.0	
Max Q Clear Time (g_c+I1), s	2.3	4.6		7.4	3.0		2.6	13.9		2.9	8.9	
Green Ext Time (p_c), s	0.0	0.3		0.4	0.5		0.0	3.4		0.0	3.6	

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	30.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	93	0	37	260	428	0	0	312	258
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	0	0	106	0	42	295	486	0	0	355	293
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1583	1730	496	648	0	0	491	0	0
Stage 1			1082	1082	-	-	-	-	-	-	-
Stage 2			501	648	-	-	-	-	-	-	-
Follow-up Headway			3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Capacity-1 Maneuver			118	87	568	924	-	-	1057	-	-
Stage 1			321	290	-	-	-	-	-	-	-
Stage 2			603	461	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 79	0	563	920	-	-	1053	-	-
Mov Capacity-2 Maneuver			# 79	0	-	-	-	-	-	-	-
Stage 1			217	0	-	-	-	-	-	-	-
Stage 2			600	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 304.3	4.1	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	920	-	-	105	1053	-	-
HCM Control Delay, s	10.753	-	-	$ 304.3	0	-	-
HCM Lane V/C Ratio	0.32	-	-	1.41	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	1.4	-	-	10.6	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	212	0	247	0	0	0	0	476	117	38	367	0
Number	7	4	14				5	2	12	1	6	16
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	182.7	182.7	182.7				0.0	182.7	182.7	182.7	182.7	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	443	0	396				0	747	635	65	997	0
Arrive On Green	0.25	0.00	0.25				0.00	0.41	0.41	0.04	0.55	0.00
Sat Flow, veh/h	1740	0	1553				0	1827	1553	1740	1827	0
Grp Volume(v), veh/h	236	0	274				0	529	130	42	408	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553				0	1827	1553	1740	1827	0
Q Serve(g_s), s	4.7	0.0	6.4				0.0	9.7	2.2	1.0	5.2	0.0
Cycle Q Clear(g_c), s	4.7	0.0	6.4				0.0	9.7	2.2	1.0	5.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	443	0	396				0	747	635	65	997	0
V/C Ratio(X)	0.53	0.00	0.69				0.00	0.71	0.20	0.65	0.41	0.00
Avail Cap(c_a), veh/h	910	0	812				0	1866	1586	260	2321	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	0.0	13.5				0.0	9.9	7.7	19.1	5.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	2.2				0.0	1.3	0.2	10.4	0.3	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
%ile Back of Q (50%), veh/ln	1.8	0.0	2.3				0.0	3.3	0.6	0.5	1.4	0.0
Lane Grp Delay (d), s/veh	13.9	0.0	15.7				0.0	11.1	7.8	29.4	5.6	0.0
Lane Grp LOS	B		B					B	A	C	A	
Approach Vol, veh/h		510						659			450	
Approach Delay, s/veh		14.9						10.5			7.8	
Approach LOS		B						B			A	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		14.2						20.4		5.5	25.9	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		21.0						41.0		6.0	51.0	
Max Q Clear Time (g_c+I1), s		8.4						11.7		3.0	7.2	
Green Ext Time (p_c), s		1.9						4.7		0.0	4.9	

Intersection Summary		
HCM 2010 Ctrl Delay		11.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	1	89	108	6	40
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	1	99	120	7	44
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	162	109	0	0	104	0
Stage 1	104	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	829	945	-	-	1488	-
Stage 1	920	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	818	937	-	-	1482	-
Mov Capacity-2 Maneuver	818	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	1
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	818	937	1482	-
HCM Control Delay, s	-	-	9.8	8.8	7.44	-
HCM Lane V/C Ratio	-	-	0.08	0.00	0.00	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th-tile Q, veh	-	-	0.3	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	6	34	26	6	5	51	149	29	3	108	9
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	6	36	27	6	5	54	157	31	3	114	9
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	420	430	128	435	418	182	128	0	0	192	0	0
Stage 1	130	130	-	284	284	-	-	-	-	-	-	-
Stage 2	290	300	-	151	134	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	544	518	922	531	526	861	1458	-	-	1381	-	-
Stage 1	874	789	-	723	676	-	-	-	-	-	-	-
Stage 2	718	666	-	851	785	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	515	494	914	486	501	854	1452	-	-	1375	-	-
Mov Capacity-2 Maneuver	515	494	-	486	501	-	-	-	-	-	-	-
Stage 1	838	784	-	693	648	-	-	-	-	-	-	-
Stage 2	678	639	-	806	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	12.5	1.7	0.2
HCM LOS	B	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1452	-	-	740	519	1375	-	-
HCM Control Delay, s	7.575	-	-	10.2	12.5	7.624	-	-
HCM Lane V/C Ratio	0.04	-	-	0.07	0.07	0.00	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th-tile Q, veh	0.1	-	-	0.2	0.2	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	23.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	26	24	64	49	18	55	56	357	53	43	285	10
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	30	28	74	56	21	63	64	410	61	49	328	11
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.6	12.2	35.5	14.5
HCM LOS	B	B	E	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	23%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	25%	77%	93%
Vol Right, %	0%	13%	0%	0%	100%	0%	75%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	410	26	24	64	49	73	186	153
LT Vol	0	357	0	24	0	0	18	143	143
Through Vol	0	53	0	0	64	0	55	0	10
RT Vol	56	0	26	0	0	49	0	43	0
Lane Flow Rate	64	471	30	28	74	56	84	213	175
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.129	0.869	0.072	0.062	0.151	0.135	0.176	0.428	0.344
Departure Headway (Hd)	7.234	6.637	8.648	8.134	7.414	8.608	7.548	7.228	7.063
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	496	547	414	440	483	417	475	499	508
Service Time	4.971	4.373	6.402	5.888	5.168	6.36	5.3	4.971	4.807
HCM Lane V/C Ratio	0.129	0.861	0.072	0.064	0.153	0.134	0.177	0.427	0.344
HCM Control Delay	11	38.9	12.1	11.4	11.5	12.7	11.9	15.3	13.5
HCM Lane LOS	B	E	B	B	B	B	B	C	B
HCM 95th-tile Q	0.4	9.6	0.2	0.2	0.5	0.5	0.6	2.1	1.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	48	32	88	71	7	12	133	384	73	17	348	25
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	52	35	96	77	8	13	145	417	79	18	378	27
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	12.8	14.2	26.1	16.1
HCM LOS	B	B	D	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	60%	0%	79%	100%	0%	0%
Vol Thru, %	0%	100%	0%	40%	0%	8%	0%	100%	82%
Vol Right, %	0%	0%	100%	0%	100%	13%	0%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	384	73	80	88	90	17	232	141
LT Vol	0	384	0	32	0	7	0	232	116
Through Vol	0	0	73	0	88	12	0	0	25
RT Vol	133	0	0	48	0	71	17	0	0
Lane Flow Rate	145	417	79	87	96	98	18	252	153
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.302	0.812	0.139	0.206	0.2	0.237	0.041	0.522	0.312
Departure Headway (Hd)	7.512	7.002	6.288	8.529	7.514	8.728	7.958	7.447	7.32
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	518	569	420	476	411	450	484	490
Service Time	5.262	4.752	4.038	6.293	5.278	6.497	5.713	5.202	5.075
HCM Lane V/C Ratio	0.303	0.805	0.139	0.207	0.202	0.238	0.04	0.521	0.312
HCM Control Delay	13.5	33.5	10.1	13.5	12.2	14.2	11.1	18.1	13.4
HCM Lane LOS	B	D	B	B	B	B	B	C	B
HCM 95th-tile Q	1.3	7.8	0.5	0.8	0.7	0.9	0.1	3	1.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	13	0	28	91	562	0	0	253	254
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	31	101	624	0	0	281	282
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	1113	1113	322	281	0	0	629	0	0
Stage 1	832	832	-	-	-	-	-	-	-
Stage 2	281	281	-	-	-	-	-	-	-
Follow-up Headway	3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver	216	208	674	1282	-	-	949	-	-
Stage 1	389	383	-	-	-	-	-	-	-
Stage 2	766	678	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	197	0	668	1277	-	-	945	-	-
Mov Capacity-2 Maneuver	197	0	-	-	-	-	-	-	-
Stage 1	357	0	-	-	-	-	-	-	-
Stage 2	763	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	1.1	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1277	-	-	197	506	945	-	-
HCM Control Delay, s	8.061	-	-	24.2	12.7	0	-	-
HCM Lane V/C Ratio	0.08	-	-	0.05	0.07	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.3	-	-	0.2	0.2	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	362	0	173	0	0	0	0	291	35	63	203	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	411	0	197	0	0	0	0	331	40	72	231	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	13.4	13	15.5
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	146	35	181	181	173	63	203
LT Vol	146	146	0	0	0	0	0	203
Through Vol	0	0	35	0	0	173	0	0
RT Vol	0	0	0	181	181	0	63	0
Lane Flow Rate	165	165	40	206	206	197	72	231
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.332	0.332	0.052	0.401	0.401	0.317	0.156	0.469
Departure Headway (Hd)	7.227	7.227	4.749	7.012	7.012	5.802	7.823	7.314
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	494	494	745	512	512	617	456	489
Service Time	5.015	5.015	2.536	4.778	4.778	3.568	5.615	5.105
HCM Lane V/C Ratio	0.334	0.334	0.054	0.402	0.402	0.319	0.158	0.472
HCM Control Delay	13.6	13.6	7.8	14.4	14.4	11.3	12.1	16.5
HCM Lane LOS	B	B	A	B	B	B	B	C
HCM 95th-tile Q	1.4	1.4	0.2	1.9	1.9	1.4	0.5	2.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	116	160	111	264	159	53
Number	2	12	1	6	7	14
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	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	224	190	566	932	620	554
Arrive On Green	0.12	0.00	0.33	0.51	0.36	0.36
Sat Flow, veh/h	1810	1538	1723	1810	1723	1538
Grp Volume(v), veh/h	135	0	129	307	185	62
Grp Sat Flow(s),veh/h/ln	1810	1538	1723	1810	1723	1538
Q Serve(g_s), s	4.5	0.0	3.5	6.3	4.9	1.7
Cycle Q Clear(g_c), s	4.5	0.0	3.5	6.3	4.9	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	224	190	566	932	620	554
V/C Ratio(X)	0.60	0.00	0.23	0.33	0.30	0.11
Avail Cap(c_a), veh/h	680	578	566	1388	620	554
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	15.6	9.1	14.7	13.6
Incr Delay (d2), s/veh	2.6	0.0	0.9	0.2	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.0	0.0	1.4	2.1	2.0	0.6
Lane Grp Delay (d), s/veh	29.1	0.0	16.5	9.3	15.9	14.0
Lane Grp LOS	C		B	A	B	B
Approach Vol, veh/h	135			436	247	
Approach Delay, s/veh	29.1			11.4	15.4	
Approach LOS	C			B	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	11.9		25.0	36.9		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	24.0		21.0	49.0		
Max Q Clear Time (g_c+I1), s	6.5		5.5	8.3		
Green Ext Time (p_c), s	1.4		0.3	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	12	20	31	12	83	2	120	39	97	162	14
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	30	14	24	37	14	100	2	145	47	117	195	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	669	635	205	631	612	178	200	0	0	197	0	0
Stage 1	434	434	-	178	178	-	-	-	-	-	-	-
Stage 2	235	201	-	453	434	-	-	-	-	-	-	-
Follow-up Headway	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Capacity-1 Maneuver	370	395	833	392	407	862	1366	-	-	1370	-	-
Stage 1	598	579	-	821	750	-	-	-	-	-	-	-
Stage 2	766	733	-	584	579	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	291	353	826	338	364	855	1360	-	-	1364	-	-
Mov Capacity-2 Maneuver	291	353	-	338	364	-	-	-	-	-	-	-
Stage 1	594	521	-	816	745	-	-	-	-	-	-	-
Stage 2	659	728	-	496	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	13.6	0.1	2.8
HCM LOS	C	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1360	-	-	396	568	1364	-	-
HCM Control Delay, s	7.652	0	-	16	13.6	7.886	0	-
HCM Lane V/C Ratio	0.00	-	-	0.17	0.27	0.09	-	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.6	1.1	0.3	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	24	0	1	0	3	3	3	10	0	1	3	24
Peak Hour Factor	0.89	0.89	0.88	0.88	0.89	0.89	0.88	0.88	0.88	0.89	0.88	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	1	0	3	3	3	11	0	1	3	27
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	7.3	6.8	7.2	6.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	96%	0%	4%
Vol Thru, %	77%	0%	50%	11%
Vol Right, %	0%	4%	50%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	25	6	28
LT Vol	10	0	3	3
Through Vol	0	1	3	24
RT Vol	3	24	0	1
Lane Flow Rate	15	28	7	31
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.033	0.007	0.031
Departure Headway (Hd)	4.065	4.187	3.735	3.498
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	881	857	959	1023
Service Time	2.085	2.202	1.756	1.519
HCM Lane V/C Ratio	0.017	0.033	0.007	0.03
HCM Control Delay	7.2	7.3	6.8	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	11	102	187	3	39	37	478	127	56	660	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	123	82	179	422	15	182	67	1268	567	89	1323	19
Arrive On Green	0.12	0.12	0.12	0.13	0.13	0.13	0.04	0.37	0.37	0.05	0.38	0.38
Sat Flow, veh/h	1064	709	1553	3375	119	1452	1740	3471	1553	1740	3503	51
Grp Volume(v), veh/h	35	0	128	234	0	53	46	598	159	70	409	428
Grp Sat Flow(s),veh/h/ln	1774	0	1553	1688	0	1571	1740	1736	1553	1740	1736	1818
Q Serve(g_s), s	0.8	0.0	3.7	3.0	0.0	1.4	1.2	6.2	3.4	1.9	8.9	8.9
Cycle Q Clear(g_c), s	0.8	0.0	3.7	3.0	0.0	1.4	1.2	6.2	3.4	1.9	8.9	8.9
Prop In Lane	0.60		1.00	1.00		0.92	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	205	0	179	422	0	196	67	1268	567	89	656	687
V/C Ratio(X)	0.17	0.00	0.71	0.55	0.00	0.27	0.69	0.47	0.28	0.79	0.62	0.62
Avail Cap(c_a), veh/h	609	0	533	1158	0	539	224	1713	766	336	968	1014
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	19.9	19.2	0.0	18.5	22.1	11.3	10.5	21.9	11.8	11.8
Incr Delay (d2), s/veh	0.4	0.0	5.2	1.1	0.0	0.7	11.7	0.3	0.3	14.1	1.0	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	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.4	0.0	1.6	1.2	0.0	0.6	0.7	2.3	1.1	1.1	3.6	3.7
Lane Grp Delay (d), s/veh	19.0	0.0	25.1	20.3	0.0	19.2	33.9	11.6	10.7	35.9	12.8	12.7
Lane Grp LOS	B		C	C		B	C	B	B	D	B	B
Approach Vol, veh/h		163			287			803			907	
Approach Delay, s/veh		23.8			20.1			12.7			14.5	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		9.4			9.8		5.8	21.0		6.4	21.6	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		6.0	23.0		9.0	26.0	
Max Q Clear Time (g_c+I1), s		5.7			5.0		3.2	8.2		3.9	10.9	
Green Ext Time (p_c), s		0.4			0.9		0.0	6.6		0.1	6.7	

Intersection Summary		
HCM 2010 Ctrl Delay		15.3
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	45	1	89	0	600	416	0	354	595
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	54	1	107	0	723	501	0	427	717
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	941	1155	371	427	0	0	728	0	0
Stage 1	728	728	-	-	-	-	-	-	-
Stage 2	213	427	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	262	196	626	1129	-	-	871	-	-
Stage 1	439	427	-	-	-	-	-	-	-
Stage 2	802	584	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	260	# 0	621	1124	-	-	867	-	-
Mov Capacity-2 Maneuver	260	# 0	-	-	-	-	-	-	-
Stage 1	437	# 0	-	-	-	-	-	-	-
Stage 2	799	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1124	-	-	338	621	867	-	-
HCM Control Delay, s	0	-	-	19.5	11.6	0	-	-
HCM Lane V/C Ratio	-	-	-	0.27	0.12	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.1	0.4	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	332	0	212	0	0	0	0	684	91	134	265	0
Number	7	4	14				5	2	12	1	6	16
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	184.5	184.5	184.5				0.0	184.5	184.5	184.5	184.5	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	536	0	476				0	1213	543	221	1915	0
Arrive On Green	0.31	0.00	0.31				0.00	0.35	0.00	0.13	0.55	0.00
Sat Flow, veh/h	1757	0	1560				0	3597	1568	1757	3597	0
Grp Volume(v), veh/h	420	0	268				0	866	0	170	335	0
Grp Sat Flow(s),veh/h/ln	1757	0	1560				0	1752	1568	1757	1752	0
Q Serve(g_s), s	11.8	0.0	7.8				0.0	11.5	0.0	5.0	2.6	0.0
Cycle Q Clear(g_c), s	11.8	0.0	7.8				0.0	11.5	0.0	5.0	2.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	536	0	476				0	1213	543	221	1915	0
V/C Ratio(X)	0.78	0.00	0.56				0.00	0.71	0.00	0.77	0.17	0.00
Avail Cap(c_a), veh/h	881	0	783				0	1758	787	457	2931	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	15.7				0.0	15.3	0.0	22.8	6.1	0.0
Incr Delay (d2), s/veh	2.6	0.0	1.0				0.0	0.8	0.0	5.5	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
%ile Back of Q (50%), veh/ln	5.0	0.0	2.9				0.0	4.7	0.0	2.5	0.9	0.0
Lane Grp Delay (d), s/veh	19.6	0.0	16.7				0.0	16.1	0.0	28.3	6.2	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		688						866			505	
Approach Delay, s/veh		18.5						16.1			13.6	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		20.4						22.6		10.8	33.4	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		27.0						27.0		14.0	45.0	
Max Q Clear Time (g_c+I1), s		13.8						13.5		7.0	4.6	
Green Ext Time (p_c), s		2.7						5.1		0.3	7.0	

Intersection Summary												
HCM 2010 Ctrl Delay			16.3									
HCM 2010 LOS			B									

Notes												

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	51	98	108	70	165	46	81	151	38	25	113	37
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	121	133	86	204	57	100	186	47	31	140	46
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	17.8	20.1	20.5	13.7
HCM LOS	C	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	30%	20%	25%	18%	0%
Vol Thru, %	56%	38%	59%	82%	0%
Vol Right, %	14%	42%	16%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	257	281	138	37
LT Vol	151	98	165	113	0
Through Vol	38	108	46	0	37
RT Vol	81	51	70	25	0
Lane Flow Rate	333	317	347	170	46
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.625	0.568	0.629	0.358	0.086
Departure Headway (Hd)	6.746	6.449	6.525	7.57	6.757
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	533	555	552	472	526
Service Time	4.828	4.534	4.608	5.363	4.55
HCM Lane V/C Ratio	0.625	0.571	0.629	0.36	0.087
HCM Control Delay	20.5	17.8	20.1	14.6	10.2
HCM Lane LOS	C	C	C	B	B
HCM 95th-tile Q	4.3	3.5	4.3	1.6	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	4	34	189	6	31	105	288	152	48	256	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	13	10	83	290	55	292	163	428	226	76	551	43
Arrive On Green	0.01	0.06	0.06	0.17	0.22	0.22	0.10	0.39	0.39	0.04	0.34	0.34
Sat Flow, veh/h	1691	167	1368	1691	246	1300	1691	1096	578	1691	1627	127
Grp Volume(v), veh/h	7	0	46	228	0	44	127	0	530	58	0	332
Grp Sat Flow(s),veh/h/ln	1691	0	1534	1691	0	1546	1691	0	1674	1691	0	1753
Q Serve(g_s), s	0.2	0.0	1.4	6.2	0.0	1.1	3.5	0.0	13.6	1.6	0.0	7.4
Cycle Q Clear(g_c), s	0.2	0.0	1.4	6.2	0.0	1.1	3.5	0.0	13.6	1.6	0.0	7.4
Prop In Lane	1.00		0.89	1.00		0.84	1.00		0.35	1.00		0.07
Lane Grp Cap(c), veh/h	13	0	93	290	0	347	163	0	653	76	0	594
V/C Ratio(X)	0.56	0.00	0.50	0.79	0.00	0.13	0.78	0.00	0.81	0.76	0.00	0.56
Avail Cap(c_a), veh/h	141	0	511	528	0	870	352	0	1011	141	0	840
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	23.7	0.0	21.8	19.1	0.0	14.9	21.2	0.0	13.1	22.7	0.0	12.9
Incr Delay (d2), s/veh	33.4	0.0	4.1	4.7	0.0	0.2	7.9	0.0	2.9	14.6	0.0	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 Back of Q (50%), veh/ln	0.2	0.0	0.6	2.6	0.0	0.4	1.7	0.0	4.9	0.9	0.0	2.7
Lane Grp Delay (d), s/veh	57.2	0.0	25.9	23.8	0.0	15.0	29.1	0.0	16.0	37.3	0.0	13.8
Lane Grp LOS	E		C	C		B	C		B	D		B
Approach Vol, veh/h		53			272			657			390	
Approach Delay, s/veh		30.0			22.4			18.5			17.3	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.4	6.9		12.2	14.8		8.6	22.7		6.2	20.3	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		15.0	27.0		10.0	29.0		4.0	23.0	
Max Q Clear Time (g_c+I1), s	2.2	3.4		8.2	3.1		5.5	15.6		3.6	9.4	
Green Ext Time (p_c), s	0.0	0.2		0.4	0.3		0.1	3.2		0.0	3.2	

Intersection Summary			
HCM 2010 Ctrl Delay		19.4	
HCM 2010 LOS		B	

Notes

Intersection	
Intersection Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	85	1	44	134	501	0	0	270	209
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	99	1	51	156	583	0	0	314	243
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1334	1456	593	557	0	0	588	0	0
Stage 1			899	899	-	-	-	-	-	-	-
Stage 2			435	557	-	-	-	-	-	-	-
Follow-up Headway			3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Capacity-1 Maneuver			168	128	502	1004	-	-	977	-	-
Stage 1			394	355	-	-	-	-	-	-	-
Stage 2			648	509	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			141	# 0	498	1000	-	-	973	-	-
Mov Capacity-2 Maneuver			141	# 0	-	-	-	-	-	-	-
Stage 1			331	# 0	-	-	-	-	-	-	-
Stage 2			645	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	75.3	2	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	1000	-	-	187	973	-	-
HCM Control Delay, s	9.263	-	-	75.3	0	-	-
HCM Lane V/C Ratio	0.16	-	-	0.81	-	-	-
HCM Lane LOS	A	-	-	F	A	-	-
HCM 95th-tile Q, veh	0.6	-	-	5.6	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	218	0	240	0	0	0	0	417	130	39	316	0
Number	7	4	14				5	2	12	1	6	16
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	181.0	181.0	181.0				0.0	181.0	181.0	181.0	181.0	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	459	0	409				0	705	600	69	961	0
Arrive On Green	0.27	0.00	0.27				0.00	0.39	0.39	0.04	0.53	0.00
Sat Flow, veh/h	1723	0	1538				0	1810	1538	1723	1810	0
Grp Volume(v), veh/h	256	0	282				0	491	153	46	372	0
Grp Sat Flow(s),veh/h/ln	1723	0	1538				0	1810	1538	1723	1810	0
Q Serve(g_s), s	5.1	0.0	6.5				0.0	9.0	2.7	1.0	4.8	0.0
Cycle Q Clear(g_c), s	5.1	0.0	6.5				0.0	9.0	2.7	1.0	4.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	459	0	409				0	705	600	69	961	0
V/C Ratio(X)	0.56	0.00	0.69				0.00	0.70	0.26	0.67	0.39	0.00
Avail Cap(c_a), veh/h	960	0	857				0	1787	1519	305	2291	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	13.0				0.0	10.1	8.2	18.7	5.5	0.0
Incr Delay (d2), s/veh	1.1	0.0	2.1				0.0	1.3	0.2	10.4	0.3	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
%ile Back of Q (50%), veh/ln	1.9	0.0	2.3				0.0	3.1	0.8	0.6	1.3	0.0
Lane Grp Delay (d), s/veh	13.6	0.0	15.1				0.0	11.3	8.4	29.1	5.7	0.0
Lane Grp LOS	B		B					B	A	C	A	
Approach Vol, veh/h		538						644			418	
Approach Delay, s/veh		14.4						10.6			8.3	
Approach LOS		B						B			A	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		14.5						19.4		5.6	25.0	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		22.0						39.0		7.0	50.0	
Max Q Clear Time (g_c+I1), s		8.5						11.0		3.0	6.8	
Green Ext Time (p_c), s		2.0						4.4		0.0	4.6	

Intersection Summary												
HCM 2010 Ctrl Delay			11.3									
HCM 2010 LOS			B									

Notes

Intersection	
Intersection Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	176	3	28	81	6	67
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	3	30	88	7	73
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	121	40	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	874	1031	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	863	1022	-	-	1569	-
Mov Capacity-2 Maneuver	863	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.6
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	863	1022	1569	-
HCM Control Delay, s	-	-	10.4	8.5	7.304	-
HCM Lane V/C Ratio	-	-	0.22	0.00	0.00	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	0.8	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	42	77	89	36	6	32	133	69	6	246	11
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	55	100	116	47	8	42	173	90	8	319	14
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	680	697	337	730	660	228	339	0	0	267	0	0
Stage 1	347	347	-	306	306	-	-	-	-	-	-	-
Stage 2	333	350	-	424	354	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	365	365	705	338	383	811	1220	-	-	1297	-	-
Stage 1	669	635	-	704	662	-	-	-	-	-	-	-
Stage 2	681	633	-	608	630	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	313	347	699	245	364	804	1215	-	-	1292	-	-
Mov Capacity-2 Maneuver	313	347	-	245	364	-	-	-	-	-	-	-
Stage 1	643	628	-	677	636	-	-	-	-	-	-	-
Stage 2	601	609	-	471	623	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	36.2	1.1	0.2
HCM LOS	C	E	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1215	-	-	486	279	1292	-	-
HCM Control Delay, s	8.068	-	-	16.3	36.2	7.803	-	-
HCM Lane V/C Ratio	0.03	-	-	0.35	0.61	0.01	-	-
HCM Lane LOS	A	-	-	C	E	A	-	-
HCM 95th-tile Q, veh	0.1	-	-	1.6	3.7	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	44.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	25	181	22	44	146	133	337	11	63	420	50
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	74	30	221	27	54	178	162	411	13	77	512	61
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	22.1	27	62.4	45.6
HCM LOS	C	D	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	23%	0%
Vol Thru, %	0%	97%	0%	100%	0%	0%	23%	77%	81%
Vol Right, %	0%	3%	0%	0%	100%	0%	77%	0%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	348	61	25	181	22	190	273	260
LT Vol	0	337	0	25	0	0	44	210	210
Through Vol	0	11	0	0	181	0	146	0	50
RT Vol	133	0	61	0	0	22	0	63	0
Lane Flow Rate	162	424	74	30	221	27	232	333	317
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.459	1	0.222	0.087	0.585	0.081	0.634	0.869	0.806
Departure Headway (Hd)	10.184	9.544	10.738	10.239	9.54	10.879	9.849	9.397	9.148
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	355	378	334	349	377	328	366	386	396
Service Time	7.884	7.344	8.521	8.023	7.324	8.675	7.645	7.172	6.923
HCM Lane V/C Ratio	0.456	1.122	0.222	0.086	0.586	0.082	0.634	0.863	0.801
HCM Control Delay	21.2	78.2	16.6	14	25	14.6	28.4	50.3	40.7
HCM Lane LOS	C	F	C	B	C	B	D	F	E
HCM 95th-tile Q	2.3	11.8	0.8	0.3	3.6	0.3	4.2	8.4	7.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	38.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	2	41	86	5	16	52	466	122	14	547	9
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	20	2	48	100	6	19	60	542	142	16	636	10
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	12.4	15.8	52.2	30.7
HCM LOS	B	C	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	89%	0%	80%	100%	0%	0%
Vol Thru, %	0%	100%	0%	11%	0%	5%	0%	100%	95%
Vol Right, %	0%	0%	100%	0%	100%	15%	0%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	466	122	19	41	107	14	365	191
LT Vol	0	466	0	2	0	5	0	365	182
Through Vol	0	0	122	0	41	16	0	0	9
RT Vol	52	0	0	17	0	86	14	0	0
Lane Flow Rate	60	542	142	22	48	124	16	424	222
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.131	1	0.259	0.059	0.112	0.31	0.035	0.853	0.446
Departure Headway (Hd)	7.801	7.292	6.579	9.595	8.456	9.095	7.741	7.242	7.209
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	462	504	549	375	426	398	461	500	498
Service Time	5.507	4.998	4.286	7.301	6.162	6.795	5.518	5.018	4.986
HCM Lane V/C Ratio	0.13	1.075	0.259	0.059	0.113	0.312	0.035	0.848	0.446
HCM Control Delay	11.7	67.3	11.6	12.9	12.2	15.8	10.8	39.4	15.7
HCM Lane LOS	B	F	B	B	B	C	B	E	C
HCM 95th-tile Q	0.4	13.6	1	0.2	0.4	1.3	0.1	8.8	2.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	24	0	41	160	599	0	0	211	463
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	27	0	47	182	681	0	0	240	526
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1289	1289	350	240	0	0	686	0	0
Stage 1			1049	1049	-	-	-	-	-	-	-
Stage 2			240	240	-	-	-	-	-	-	-
Follow-up Headway			3.538	4.038	3.338	2.236	-	-	2.24	-	-
Pot Capacity-1 Maneuver			165	161	642	1315	-	-	890	-	-
Stage 1			296	300	-	-	-	-	-	-	-
Stage 2			794	702	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			141	0	637	1310	-	-	886	-	-
Mov Capacity-2 Maneuver			141	0	-	-	-	-	-	-	-
Stage 1			254	0	-	-	-	-	-	-	-
Stage 2			791	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20	1.7	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1310	-	-	141	405	886	-	-
HCM Control Delay, s	8.19	-	-	34.3	15.3	0	-	-
HCM Lane V/C Ratio	0.14	-	-	0.13	0.14	-	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th-tile Q, veh	0.5	-	-	0.4	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	365	0	109	0	0	0	0	394	29	30	205	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	424	0	127	0	0	0	0	458	34	35	238	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	14.4	15.3	17.3
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	197	29	183	183	109	30	205
LT Vol	197	197	0	0	0	0	0	205
Through Vol	0	0	29	0	0	109	0	0
RT Vol	0	0	0	183	183	0	30	0
Lane Flow Rate	229	229	34	212	212	127	35	238
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.456	0.456	0.044	0.429	0.429	0.213	0.079	0.509
Departure Headway (Hd)	7.265	7.265	4.752	7.271	7.271	6.059	8.193	7.683
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	499	758	492	492	588	440	472
Service Time	4.965	4.965	2.452	5.058	5.058	3.846	5.893	5.383
HCM Lane V/C Ratio	0.459	0.459	0.045	0.431	0.431	0.216	0.08	0.504
HCM Control Delay	15.9	15.9	7.7	15.5	15.5	10.5	11.6	18.1
HCM Lane LOS	C	C	A	C	C	B	B	C
HCM 95th-tile Q	2.4	2.4	0.1	2.1	2.1	0.8	0.3	2.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	19	68	71	8	23	57
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	22	77	81	9	26	65
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	95	0	-	0	210	95
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	120	-
Follow-up Headway	2.245	-	-	-	3.545	3.345
Pot Capacity-1 Maneuver	1480	-	-	-	772	953
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	898	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1474	-	-	-	753	945
Mov Capacity-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.6
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1474	-	-	-	880
HCM Control Delay, s	7.479	0	-	-	9.6
HCM Lane V/C Ratio	0.01	-	-	-	0.10
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.0	-	-	-	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	233	108	72	149	98	100
Number	2	12	1	6	7	14
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	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1
Cap, veh/h	704	598	95	916	670	598
Arrive On Green	0.38	0.00	0.05	0.50	0.38	0.38
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	238	0	73	152	100	102
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	6.0	0.0	2.7	3.0	2.4	2.8
Cycle Q Clear(g_c), s	6.0	0.0	2.7	3.0	2.4	2.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	704	598	95	916	670	598
V/C Ratio(X)	0.34	0.00	0.77	0.17	0.15	0.17
Avail Cap(c_a), veh/h	704	598	402	1323	670	598
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	30.6	9.1	13.3	13.4
Incr Delay (d2), s/veh	1.3	0.0	12.4	0.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.5	0.0	1.4	1.0	1.0	1.1
Lane Grp Delay (d), s/veh	15.7	0.0	43.0	9.1	13.8	14.0
Lane Grp LOS	B		D	A	B	B
Approach Vol, veh/h	238			225	202	
Approach Delay, s/veh	15.7			20.1	13.9	
Approach LOS	B			C	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	29.0		7.5	36.5		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	25.0		15.0	47.0		
Max Q Clear Time (g_c+I1), s	8.0		4.7	5.0		
Green Ext Time (p_c), s	1.2		0.1	1.3		

Intersection Summary						
HCM 2010 Ctrl Delay			16.6			
HCM 2010 LOS			B			

Notes

Intersection	
Intersection Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	6	9	27	5	43	11	107	18	53	95	33
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	7	10	31	6	50	13	124	21	62	110	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	432	415	120	412	404	145	115	0	0	150	0	0
Stage 1	239	239	-	165	165	-	-	-	-	-	-	-
Stage 2	193	176	-	247	239	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	534	528	931	550	536	902	1474	-	-	1431	-	-
Stage 1	764	708	-	837	762	-	-	-	-	-	-	-
Stage 2	809	753	-	757	708	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	474	493	923	510	501	894	1468	-	-	1425	-	-
Mov Capacity-2 Maneuver	474	493	-	510	501	-	-	-	-	-	-	-
Stage 1	753	671	-	825	751	-	-	-	-	-	-	-
Stage 2	747	742	-	702	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	11.1	0.6	2.2
HCM LOS	B	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1468	-	-	541	676	1425	-	-
HCM Control Delay, s	7.474	0	-	12.2	11.1	7.64	0	-
HCM Lane V/C Ratio	0.01	-	-	0.08	0.13	0.04	-	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.3	0.4	0.1	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	28	1	3	0	2	0	2	7	0	1	11	35
Peak Hour Factor	0.93	0.93	0.88	0.88	0.93	0.93	0.88	0.88	0.88	0.93	0.88	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	1	3	0	2	0	2	8	0	1	12	38
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	7.4	7.1	7.2	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	88%	0%	2%
Vol Thru, %	78%	3%	100%	23%
Vol Right, %	0%	9%	0%	74%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	32	2	47
LT Vol	7	1	2	11
Through Vol	0	3	0	35
RT Vol	2	28	0	1
Lane Flow Rate	10	35	2	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.04	0.002	0.051
Departure Headway (Hd)	4.082	4.162	4.068	3.563
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	877	862	880	1005
Service Time	2.104	2.178	2.092	1.584
HCM Lane V/C Ratio	0.011	0.041	0.002	0.051
HCM Control Delay	7.2	7.4	7.1	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	6	45	239	5	51	101	443	111	28	400	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	65	35	87	516	20	220	144	1150	515	51	933	49
Arrive On Green	0.06	0.06	0.06	0.15	0.15	0.15	0.08	0.33	0.33	0.03	0.27	0.27
Sat Flow, veh/h	1173	631	1583	3442	134	1470	1774	3539	1583	1774	3420	180
Grp Volume(v), veh/h	20	0	49	260	0	60	110	482	121	30	225	233
Grp Sat Flow(s),veh/h/ln	1804	0	1583	1721	0	1603	1774	1770	1583	1774	1770	1831
Q Serve(g_s), s	0.4	0.0	1.1	2.5	0.0	1.2	2.2	3.9	2.0	0.6	3.8	3.9
Cycle Q Clear(g_c), s	0.4	0.0	1.1	2.5	0.0	1.2	2.2	3.9	2.0	0.6	3.8	3.9
Prop In Lane	0.65		1.00	1.00		0.92	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	100	0	87	516	0	240	144	1150	515	51	483	499
V/C Ratio(X)	0.20	0.00	0.56	0.50	0.00	0.25	0.77	0.42	0.24	0.59	0.47	0.47
Avail Cap(c_a), veh/h	796	0	699	1613	0	752	587	2440	1091	293	927	959
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	16.7	14.2	0.0	13.6	16.3	9.6	8.9	17.4	11.0	11.0
Incr Delay (d2), s/veh	1.0	0.0	5.5	0.8	0.0	0.5	8.2	0.2	0.2	10.3	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.2	0.0	0.5	1.0	0.0	0.4	1.2	1.4	0.7	0.4	1.5	1.5
Lane Grp Delay (d), s/veh	17.3	0.0	22.2	14.9	0.0	14.2	24.5	9.8	9.2	27.7	11.7	11.7
Lane Grp LOS	B		C	B		B	C	A	A	C	B	B
Approach Vol, veh/h		69			320			713			488	
Approach Delay, s/veh		20.8			14.8			12.0			12.7	
Approach LOS		C			B			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		6.0			9.4		6.9	15.8		5.0	13.9	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			17.0		12.0	25.0		6.0	19.0	
Max Q Clear Time (g_c+I1), s		3.1			4.5		4.2	5.9		2.6	5.9	
Green Ext Time (p_c), s		0.1			1.1		0.2	4.7		0.0	4.0	

Intersection Summary		
HCM 2010 Ctrl Delay		13.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	51	2	91	0	621	306	0	348	338
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	58	2	103	0	706	348	0	395	384
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	909	1106	363	395	0	0	711	0	0
Stage 1	711	711	-	-	-	-	-	-	-
Stage 2	198	395	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	274	209	634	1160	-	-	884	-	-
Stage 1	448	434	-	-	-	-	-	-	-
Stage 2	816	603	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	272	# 0	629	1155	-	-	880	-	-
Mov Capacity-2 Maneuver	272	# 0	-	-	-	-	-	-	-
Stage 1	446	# 0	-	-	-	-	-	-	-
Stage 2	813	# 0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1155	-	-	345	629	880	-	-
HCM Control Delay, s	0	-	-	19.3	11.4	0	-	-
HCM Lane V/C Ratio	-	-	-	0.27	0.11	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.1	0.4	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	417	1	432	0	0	0	0	510	35	70	329	0
Number	7	4	14				5	2	12	1	6	16
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	186.3	186.3	186.3				0.0	186.3	186.3	186.3	186.3	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	744	2	665				0	956	428	105	1461	0
Arrive On Green	0.42	0.42	0.42				0.00	0.27	0.00	0.06	0.41	0.00
Sat Flow, veh/h	1771	4	1583				0	3632	1583	1774	3632	0
Grp Volume(v), veh/h	492	0	508				0	600	0	82	387	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1770	1583	1774	1770	0
Q Serve(g_s), s	10.7	0.0	13.1				0.0	7.1	0.0	2.2	3.5	0.0
Cycle Q Clear(g_c), s	10.7	0.0	13.1				0.0	7.1	0.0	2.2	3.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	746	0	665				0	956	428	105	1461	0
V/C Ratio(X)	0.66	0.00	0.76				0.00	0.63	0.00	0.78	0.26	0.00
Avail Cap(c_a), veh/h	1369	0	1222				0	1550	694	370	2584	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.1	0.0	11.9				0.0	15.4	0.0	22.2	9.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.9				0.0	0.7	0.0	11.7	0.1	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
%ile Back of Q (50%), veh/ln	4.2	0.0	4.6				0.0	2.8	0.0	1.3	1.3	0.0
Lane Grp Delay (d), s/veh	12.2	0.0	13.7				0.0	16.1	0.0	33.9	9.4	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		1000						600			469	
Approach Delay, s/veh		12.9						16.1			13.7	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		24.1						16.9		6.8	23.8	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		37.0						21.0		10.0	35.0	
Max Q Clear Time (g_c+I1), s		15.1						9.1		4.2	5.5	
Green Ext Time (p_c), s		5.0						3.8		0.1	5.1	

Intersection Summary												
HCM 2010 Ctrl Delay			14.0									
HCM 2010 LOS			B									

Notes												

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	77	156	53	39	92	28	47	158	75	42	121	60
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	166	56	41	98	30	50	168	80	45	129	64
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	14.2	11.5	14	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	27%	25%	26%	0%
Vol Thru, %	56%	55%	58%	74%	0%
Vol Right, %	27%	19%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	286	159	163	60
LT Vol	158	156	92	121	0
Through Vol	75	53	28	0	60
RT Vol	47	77	39	42	0
Lane Flow Rate	298	304	169	173	64
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.476	0.485	0.283	0.315	0.101
Departure Headway (Hd)	5.75	5.744	6.014	6.54	5.696
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	623	624	592	546	624
Service Time	3.825	3.818	4.101	4.321	3.476
HCM Lane V/C Ratio	0.478	0.487	0.285	0.317	0.103
HCM Control Delay	14	14.2	11.5	12.3	9.1
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	2.6	2.6	1.2	1.3	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	13	69	188	1	37	21	301	162	30	324	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	24	23	124	279	8	364	41	438	235	54	724	4
Arrive On Green	0.01	0.09	0.09	0.16	0.23	0.23	0.02	0.38	0.38	0.03	0.39	0.39
Sat Flow, veh/h	1774	259	1363	1774	36	1553	1774	1141	613	1774	1851	10
Grp Volume(v), veh/h	13	0	94	216	0	44	24	0	532	34	0	374
Grp Sat Flow(s),veh/h/ln	1774	0	1622	1774	0	1589	1774	0	1754	1774	0	1861
Q Serve(g_s), s	0.3	0.0	2.7	5.5	0.0	1.0	0.6	0.0	12.7	0.9	0.0	7.3
Cycle Q Clear(g_c), s	0.3	0.0	2.7	5.5	0.0	1.0	0.6	0.0	12.7	0.9	0.0	7.3
Prop In Lane	1.00		0.84	1.00		0.98	1.00		0.35	1.00		0.01
Lane Grp Cap(c), veh/h	24	0	147	279	0	373	41	0	673	54	0	728
V/C Ratio(X)	0.55	0.00	0.64	0.77	0.00	0.12	0.59	0.00	0.79	0.63	0.00	0.51
Avail Cap(c_a), veh/h	150	0	548	524	0	872	150	0	1111	150	0	1178
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	23.2	0.0	20.8	19.1	0.0	14.3	22.9	0.0	12.9	22.7	0.0	11.0
Incr Delay (d2), s/veh	18.6	0.0	4.6	4.6	0.0	0.1	13.0	0.0	2.1	11.4	0.0	0.6
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 Back of Q (50%), veh/ln	0.3	0.0	1.2	2.5	0.0	0.4	0.4	0.0	4.8	0.5	0.0	2.7
Lane Grp Delay (d), s/veh	41.9	0.0	25.4	23.7	0.0	14.4	35.9	0.0	15.0	34.1	0.0	11.5
Lane Grp LOS	D		C	C		B	D		B	C		B
Approach Vol, veh/h		107			260			556			408	
Approach Delay, s/veh		27.4			22.1			15.9			13.4	
Approach LOS		C			C			B			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.6	8.3		11.5	15.1		5.1	22.2		5.4	22.5	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		14.0	26.0		4.0	30.0		4.0	30.0	
Max Q Clear Time (g_c+I1), s	2.3	4.7		7.5	3.0		2.6	14.7		2.9	9.3	
Green Ext Time (p_c), s	0.0	0.3		0.4	0.5		0.0	3.5		0.0	3.8	

Intersection Summary												
HCM 2010 Ctrl Delay			17.3									
HCM 2010 LOS			B									

Notes

Intersection	
Intersection Delay, s/veh	33.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	93	0	37	260	447	0	0	321	260
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	0	0	106	0	42	295	508	0	0	365	295
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1617	1764	518	660	0	0	513	0	0
Stage 1			1104	1104	-	-	-	-	-	-	-
Stage 2			513	660	-	-	-	-	-	-	-
Follow-up Headway			3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Capacity-1 Maneuver			112	83	552	914	-	-	1037	-	-
Stage 1			313	283	-	-	-	-	-	-	-
Stage 2			595	456	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 75	0	547	910	-	-	1033	-	-
Mov Capacity-2 Maneuver			# 75	0	-	-	-	-	-	-	-
Stage 1			211	0	-	-	-	-	-	-	-
Stage 2			593	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 343.6	4	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	910	-	-	99	1033	-	-
HCM Control Delay, s	10.846	-	-	$ 343.6	0	-	-
HCM Lane V/C Ratio	0.33	-	-	1.49	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	1.4	-	-	11.1	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	215	0	247	0	0	0	0	492	117	38	376	0
Number	7	4	14				5	2	12	1	6	16
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	182.7	182.7	182.7				0.0	182.7	182.7	182.7	182.7	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	441	0	393				0	762	648	65	1008	0
Arrive On Green	0.25	0.00	0.25				0.00	0.42	0.42	0.04	0.55	0.00
Sat Flow, veh/h	1740	0	1553				0	1827	1553	1740	1827	0
Grp Volume(v), veh/h	239	0	274				0	547	130	42	418	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553				0	1827	1553	1740	1827	0
Q Serve(g_s), s	4.9	0.0	6.6				0.0	10.2	2.2	1.0	5.5	0.0
Cycle Q Clear(g_c), s	4.9	0.0	6.6				0.0	10.2	2.2	1.0	5.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	441	0	393				0	762	648	65	1008	0
V/C Ratio(X)	0.54	0.00	0.70				0.00	0.72	0.20	0.65	0.41	0.00
Avail Cap(c_a), veh/h	890	0	795				0	1825	1551	254	2270	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	0.0	13.9				0.0	9.9	7.6	19.5	5.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	2.2				0.0	1.3	0.2	10.5	0.3	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
%ile Back of Q (50%), veh/ln	1.9	0.0	2.5				0.0	3.5	0.6	0.6	1.5	0.0
Lane Grp Delay (d), s/veh	14.3	0.0	16.1				0.0	11.2	7.8	30.0	5.6	0.0
Lane Grp LOS	B		B					B	A	C	A	
Approach Vol, veh/h		513						677			460	
Approach Delay, s/veh		15.3						10.6			7.8	
Approach LOS		B						B			A	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		14.4						21.1		5.5	26.6	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		21.0						41.0		6.0	51.0	
Max Q Clear Time (g_c+I1), s		8.6						12.2		3.0	7.5	
Green Ext Time (p_c), s		1.9						4.9		0.0	5.1	

Intersection Summary												
HCM 2010 Ctrl Delay			11.3									
HCM 2010 LOS			B									

Notes

Intersection	
Intersection Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	97	1	90	171	6	41
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	1	100	190	7	46
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	164	110	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	827	943	-	-	1486	-
Stage 1	919	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	816	935	-	-	1480	-
Mov Capacity-2 Maneuver	816	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	816	935	1480	-
HCM Control Delay, s	-	-	10.1	8.9	7.443	-
HCM Lane V/C Ratio	-	-	0.13	0.00	0.01	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	0.5	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	8	43	26	9	5	66	149	29	3	108	16
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	8	45	27	9	5	69	157	31	3	114	17
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	456	464	132	476	458	182	136	0	0	192	0	0
Stage 1	133	133	-	316	316	-	-	-	-	-	-	-
Stage 2	323	331	-	160	142	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	515	495	917	499	499	861	1448	-	-	1381	-	-
Stage 1	870	786	-	695	655	-	-	-	-	-	-	-
Stage 2	689	645	-	842	779	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	481	466	909	446	470	854	1442	-	-	1375	-	-
Mov Capacity-2 Maneuver	481	466	-	446	470	-	-	-	-	-	-	-
Stage 1	825	781	-	659	621	-	-	-	-	-	-	-
Stage 2	639	612	-	786	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	13.2	2.1	0.2
HCM LOS	B	B	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1442	-	-	705	480	1375	-	-
HCM Control Delay, s	7.623	-	-	10.6	13.2	7.624	-	-
HCM Lane V/C Ratio	0.05	-	-	0.09	0.09	0.00	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th-tile Q, veh	0.2	-	-	0.3	0.3	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	25.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	27	24	64	49	18	56	56	366	53	44	290	11
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	31	28	74	56	21	64	64	421	61	51	333	13
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.7	12.4	39.1	14.7
HCM LOS	B	B	E	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	23%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	24%	77%	93%
Vol Right, %	0%	13%	0%	0%	100%	0%	76%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	419	27	24	64	49	74	189	156
LT Vol	0	366	0	24	0	0	18	145	145
Through Vol	0	53	0	0	64	0	56	0	11
RT Vol	56	0	27	0	0	49	0	44	0
Lane Flow Rate	64	482	31	28	74	56	85	217	179
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.13	0.894	0.075	0.063	0.153	0.136	0.18	0.439	0.354
Departure Headway (Hd)	7.279	6.683	8.726	8.212	7.492	8.689	7.626	7.283	7.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	544	410	436	478	413	470	495	506
Service Time	5.017	4.422	6.485	5.97	5.249	6.443	5.38	5.03	4.861
HCM Lane V/C Ratio	0.13	0.886	0.076	0.064	0.155	0.136	0.181	0.438	0.354
HCM Control Delay	11.1	42.8	12.2	11.5	11.6	12.8	12.1	15.6	13.7
HCM Lane LOS	B	E	B	B	B	B	B	C	B
HCM 95th-tile Q	0.4	10.3	0.2	0.2	0.5	0.5	0.6	2.2	1.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	49	32	88	71	7	13	133	391	73	18	353	26
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	53	35	96	77	8	14	145	425	79	20	384	28
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	12.9	14.3	27.8	16.4
HCM LOS	B	B	D	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	60%	0%	78%	100%	0%	0%
Vol Thru, %	0%	100%	0%	40%	0%	8%	0%	100%	82%
Vol Right, %	0%	0%	100%	0%	100%	14%	0%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	391	73	81	88	91	18	235	144
LT Vol	0	391	0	32	0	7	0	235	118
Through Vol	0	0	73	0	88	13	0	0	26
RT Vol	133	0	0	49	0	71	18	0	0
Lane Flow Rate	145	425	79	88	96	99	20	256	156
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.303	0.832	0.14	0.21	0.201	0.241	0.044	0.532	0.319
Departure Headway (Hd)	7.557	7.047	6.333	8.597	7.58	8.785	8.005	7.494	7.364
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	476	514	566	417	473	409	447	481	487
Service Time	5.304	4.794	4.079	6.361	5.343	6.551	5.758	5.247	5.117
HCM Lane V/C Ratio	0.305	0.827	0.14	0.211	0.203	0.242	0.045	0.532	0.32
HCM Control Delay	13.6	35.9	10.1	13.6	12.3	14.3	11.1	18.5	13.6
HCM Lane LOS	B	E	B	B	B	B	B	C	B
HCM 95th-tile Q	1.3	8.3	0.5	0.8	0.7	0.9	0.1	3.1	1.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	13	0	30	91	567	0	0	257	255
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	33	101	630	0	0	286	283
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	1123	1123	325	286	0	0	635	0	0
Stage 1	837	837	-	-	-	-	-	-	-
Stage 2	286	286	-	-	-	-	-	-	-
Follow-up Headway	3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver	213	205	671	1276	-	-	944	-	-
Stage 1	386	381	-	-	-	-	-	-	-
Stage 2	762	674	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	194	0	665	1271	-	-	940	-	-
Mov Capacity-2 Maneuver	194	0	-	-	-	-	-	-	-
Stage 1	354	0	-	-	-	-	-	-	-
Stage 2	759	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	1.1	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1271	-	-	194	509	940	-	-
HCM Control Delay, s	8.077	-	-	24.5	12.6	0	-	-
HCM Lane V/C Ratio	0.08	-	-	0.05	0.07	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.3	-	-	0.2	0.2	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	363	0	173	0	0	0	0	295	35	64	206	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	412	0	197	0	0	0	0	335	40	73	234	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	13.5	13.1	15.6
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	148	148	35	182	182	173	64	206
LT Vol	148	148	0	0	0	0	0	206
Through Vol	0	0	35	0	0	173	0	0
RT Vol	0	0	0	182	182	0	64	0
Lane Flow Rate	168	168	40	206	206	197	73	234
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.337	0.337	0.053	0.403	0.403	0.318	0.158	0.477
Departure Headway (Hd)	7.246	7.246	4.768	7.036	7.036	5.827	7.844	7.334
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	493	742	509	509	613	455	489
Service Time	5.036	5.036	2.556	4.804	4.804	3.593	5.635	5.125
HCM Lane V/C Ratio	0.341	0.341	0.054	0.405	0.405	0.321	0.16	0.479
HCM Control Delay	13.7	13.7	7.8	14.5	14.5	11.3	12.1	16.7
HCM Lane LOS	B	B	A	B	B	B	B	C
HCM 95th-tile Q	1.5	1.5	0.2	1.9	1.9	1.4	0.6	2.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	63	114	65	26	15	37
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	130	74	30	17	42
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	108	0	-	0	367	99
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	273	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1483	-	-	-	633	957
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	773	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1477	-	-	-	594	949
Mov Capacity-2 Maneuver	-	-	-	-	594	-
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	9.8
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1477	-	-	-	809
HCM Control Delay, s	7.561	0	-	-	9.8
HCM Lane V/C Ratio	0.05	-	-	-	0.07
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.2	-	-	-	0.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	160	200	150	350	190	90
Number	2	12	1	6	7	14
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	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	265	225	542	943	619	553
Arrive On Green	0.15	0.00	0.31	0.52	0.36	0.36
Sat Flow, veh/h	1810	1538	1723	1810	1723	1538
Grp Volume(v), veh/h	174	0	163	380	207	98
Grp Sat Flow(s),veh/h/ln	1810	1538	1723	1810	1723	1538
Q Serve(g_s), s	6.1	0.0	4.8	8.5	5.8	2.9
Cycle Q Clear(g_c), s	6.1	0.0	4.8	8.5	5.8	2.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	265	225	542	943	619	553
V/C Ratio(X)	0.66	0.00	0.30	0.40	0.33	0.18
Avail Cap(c_a), veh/h	623	530	542	1300	619	553
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	17.3	9.7	15.6	14.6
Incr Delay (d2), s/veh	2.7	0.0	1.4	0.3	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.6	0.0	1.9	2.8	2.4	1.1
Lane Grp Delay (d), s/veh	29.7	0.0	18.8	10.0	17.0	15.3
Lane Grp LOS	C		B	A	B	B
Approach Vol, veh/h	174			543	305	
Approach Delay, s/veh	29.7			12.6	16.5	
Approach LOS	C			B	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	13.8		25.0	38.8		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	23.0		21.0	48.0		
Max Q Clear Time (g_c+I1), s	8.1		6.8	10.5		
Green Ext Time (p_c), s	1.7		0.4	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	20	30	50	20	110	10	140	60	130	200	20
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	33	22	33	54	22	120	11	152	65	141	217	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	787	749	227	744	717	195	222	0	0	222	0	0
Stage 1	505	505	-	212	212	-	-	-	-	-	-	-
Stage 2	282	244	-	532	505	-	-	-	-	-	-	-
Follow-up Headway	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Capacity-1 Maneuver	308	339	810	329	354	844	1341	-	-	1341	-	-
Stage 1	548	539	-	788	725	-	-	-	-	-	-	-
Stage 2	723	702	-	529	539	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	223	293	803	266	305	837	1335	-	-	1335	-	-
Mov Capacity-2 Maneuver	223	293	-	266	305	-	-	-	-	-	-	-
Stage 1	541	471	-	778	715	-	-	-	-	-	-	-
Stage 2	593	693	-	423	471	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	18.1	0.4	3
HCM LOS	C	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1335	-	-	333	468	1335	-	-
HCM Control Delay, s	7.719	0	-	19.6	18.1	8.016	0	-
HCM Lane V/C Ratio	0.01	-	-	0.26	0.42	0.11	-	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	1.0	2.0	0.4	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	60	5	10	10	5	45
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	5	11	11	5	49
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Minor 1			
Conflicting Flow All	49	0	201	15	10	-
Stage 1	-	-	141	-	-	-
Stage 2	-	-	60	-	-	-
Follow-up Headway	-	-	4.018	3.318	2.218	-
Pot Capacity-1 Maneuver	-	-	695	1065	1610	-
Stage 1	-	-	780	-	-	-
Stage 2	-	-	-	-	-	-
Time blocked-Platoon, %	0	-	0	0	0	-
Mov Capacity-1 Maneuver	-	-	# 0	1056	1603	-
Mov Capacity-2 Maneuver	-	-	# 0	-	-	-
Stage 1	-	-	# 0	-	-	-
Stage 2	-	-	# 0	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	-	0.7
HCM LOS	-	-	-

Minor Lane / Major Mvmt	EBL	EBT	WBLn1	SBL	SBR
Cap, veh/h	-	-	-	1603	-
HCM Control Delay, s	-	-	-	7.253	-
HCM Lane V/C Ratio	-	-	-	0.00	0.00
HCM Lane LOS	-	-	-	A	-
HCM 95th-tile Q, veh	-	-	-	0.0	0.0

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	30	220	250	10	70	90	460	150	90	690	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	172	172	299	445	26	182	126	1100	492	127	1093	32
Arrive On Green	0.19	0.19	0.19	0.13	0.13	0.13	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	891	891	1553	3375	200	1383	1740	3471	1553	1740	3444	101
Grp Volume(v), veh/h	66	0	239	272	0	87	98	500	163	98	378	394
Grp Sat Flow(s),veh/h/ln	1782	0	1553	1688	0	1583	1740	1736	1553	1740	1736	1809
Q Serve(g_s), s	1.7	0.0	8.2	4.3	0.0	2.8	3.1	6.4	4.5	3.1	10.6	10.6
Cycle Q Clear(g_c), s	1.7	0.0	8.2	4.3	0.0	2.8	3.1	6.4	4.5	3.1	10.6	10.6
Prop In Lane	0.50		1.00	1.00		0.87	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	343	0	299	445	0	209	126	1100	492	127	551	574
V/C Ratio(X)	0.19	0.00	0.80	0.61	0.00	0.42	0.78	0.45	0.33	0.77	0.69	0.69
Avail Cap(c_a), veh/h	510	0	444	966	0	453	249	1366	611	311	745	776
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	21.5	22.9	0.0	22.3	25.5	15.2	14.6	25.5	16.7	16.7
Incr Delay (d2), s/veh	0.3	0.0	6.2	1.4	0.0	1.3	10.0	0.3	0.4	9.6	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.8	0.0	3.5	1.8	0.0	1.1	1.6	2.6	1.6	1.6	4.4	4.6
Lane Grp Delay (d), s/veh	19.2	0.0	27.7	24.3	0.0	23.6	35.5	15.5	15.0	35.1	18.3	18.2
Lane Grp LOS	B		C	C		C	D	B	B	D	B	B
Approach Vol, veh/h		305			359			761			870	
Approach Delay, s/veh		25.9			24.1			18.0			20.1	
Approach LOS		C			C			B			C	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		14.8			11.4		8.0	21.7		8.1	21.7	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		8.0	22.0		10.0	24.0	
Max Q Clear Time (g_c+I1), s		10.2			6.3		5.1	8.4		5.1	12.6	
Green Ext Time (p_c), s		0.6			1.1		0.1	5.6		0.1	5.1	

Intersection Summary												
HCM 2010 Ctrl Delay			20.8									
HCM 2010 LOS			C									

Notes

Intersection	
Intersection Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	70	0	120	0	660	460	0	410	750
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	76	0	130	0	717	500	0	446	815
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	945	1168	369	446	0	0	722	0	0
Stage 1	722	722	-	-	-	-	-	-	-
Stage 2	223	446	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	260	192	628	1111	-	-	876	-	-
Stage 1	442	429	-	-	-	-	-	-	-
Stage 2	793	572	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	258	0	623	1106	-	-	872	-	-
Mov Capacity-2 Maneuver	258	0	-	-	-	-	-	-	-
Stage 1	440	0	-	-	-	-	-	-	-
Stage 2	790	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1106	-	-	328	623	872	-	-
HCM Control Delay, s	0	-	-	22.1	11.7	0	-	-
HCM Lane V/C Ratio	-	-	-	0.36	0.14	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.6	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	400	0	230	0	0	0	0	720	120	180	300	0
Number	7	4	14				5	2	12	1	6	16
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	184.5	184.5	184.5				0.0	184.5	184.5	184.5	184.5	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	553	0	491				0	1112	498	252	1877	0
Arrive On Green	0.31	0.00	0.31				0.00	0.32	0.00	0.14	0.54	0.00
Sat Flow, veh/h	1757	0	1560				0	3597	1568	1757	3597	0
Grp Volume(v), veh/h	435	0	250				0	783	0	196	326	0
Grp Sat Flow(s),veh/h/ln	1757	0	1560				0	1752	1568	1757	1752	0
Q Serve(g_s), s	12.1	0.0	7.0				0.0	10.5	0.0	5.8	2.5	0.0
Cycle Q Clear(g_c), s	12.1	0.0	7.0				0.0	10.5	0.0	5.8	2.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	553	0	491				0	1112	498	252	1877	0
V/C Ratio(X)	0.79	0.00	0.51				0.00	0.70	0.00	0.78	0.17	0.00
Avail Cap(c_a), veh/h	952	0	846				0	1638	733	460	2818	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.7	0.0	14.9				0.0	16.0	0.0	22.1	6.4	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.8				0.0	0.8	0.0	5.1	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
%ile Back of Q (50%), veh/ln	5.1	0.0	2.5				0.0	4.3	0.0	2.7	0.9	0.0
Lane Grp Delay (d), s/veh	19.2	0.0	15.8				0.0	16.9	0.0	27.2	6.4	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		685						783			522	
Approach Delay, s/veh		18.0						16.9			14.2	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		20.8						21.0		11.7	32.6	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		29.0						25.0		14.0	43.0	
Max Q Clear Time (g_c+I1), s		14.1						12.5		7.8	4.5	
Green Ext Time (p_c), s		2.8						4.5		0.4	6.2	

Intersection Summary		
HCM 2010 Ctrl Delay		16.5
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	68.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	220	140	130	360	120	110	190	80	100	160	60
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	76	239	152	141	391	130	120	207	87	109	174	65
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	75.6	76	76.4	35
HCM LOS	F	F	F	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	29%	16%	21%	38%	0%
Vol Thru, %	50%	51%	59%	62%	0%
Vol Right, %	21%	33%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	380	430	610	260	60
LT Vol	190	220	360	160	0
Through Vol	80	140	120	0	60
RT Vol	110	70	130	100	0
Lane Flow Rate	413	467	663	283	65
Geometry Grp	5	2	2	7	7
Degree of Util (X)	1	1	1	0.779	0.164
Departure Headway (Hd)	9.15	8.956	9.043	9.923	9.031
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	397	407	404	367	400
Service Time	7.178	6.984	7.071	7.623	6.731
HCM Lane V/C Ratio	1.04	1.147	1.641	0.771	0.163
HCM Control Delay	76.4	75.6	76	40	13.5
HCM Lane LOS	F	F	F	E	B
HCM 95th-tile Q	12.1	12.3	12.2	6.4	0.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	50	250	10	40	140	350	190	70	330	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	19	18	90	324	79	311	192	441	240	94	561	52
Arrive On Green	0.01	0.07	0.07	0.19	0.25	0.25	0.11	0.41	0.41	0.06	0.35	0.35
Sat Flow, veh/h	1691	262	1287	1691	317	1240	1691	1082	589	1691	1602	147
Grp Volume(v), veh/h	11	0	65	272	0	54	152	0	587	76	0	392
Grp Sat Flow(s),veh/h/ln	1691	0	1549	1691	0	1557	1691	0	1672	1691	0	1750
Q Serve(g_s), s	0.4	0.0	2.4	9.0	0.0	1.6	5.1	0.0	18.7	2.6	0.0	10.9
Cycle Q Clear(g_c), s	0.4	0.0	2.4	9.0	0.0	1.6	5.1	0.0	18.7	2.6	0.0	10.9
Prop In Lane	1.00		0.83	1.00		0.80	1.00		0.35	1.00		0.08
Lane Grp Cap(c), veh/h	19	0	108	324	0	390	192	0	682	94	0	613
V/C Ratio(X)	0.58	0.00	0.60	0.84	0.00	0.14	0.79	0.00	0.86	0.81	0.00	0.64
Avail Cap(c_a), veh/h	116	0	425	406	0	695	290	0	861	116	0	721
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	28.7	0.0	26.3	22.7	0.0	16.9	25.2	0.0	15.7	27.2	0.0	15.9
Incr Delay (d2), s/veh	25.1	0.0	5.2	11.9	0.0	0.2	8.3	0.0	7.3	27.6	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.3	0.0	1.0	4.5	0.0	0.6	2.4	0.0	7.9	1.7	0.0	4.3
Lane Grp Delay (d), s/veh	53.8	0.0	31.5	34.6	0.0	17.1	33.5	0.0	23.1	54.8	0.0	17.3
Lane Grp LOS	D		C	C		B	C		C	D		B
Approach Vol, veh/h		76			326			739			468	
Approach Delay, s/veh		34.7			31.7			25.2			23.4	
Approach LOS		C			C			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.7	8.1		15.2	18.6		10.6	27.8		7.2	24.4	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		14.0	26.0		10.0	30.0		4.0	24.0	
Max Q Clear Time (g_c+I1), s	2.4	4.4		11.0	3.6		7.1	20.7		4.6	12.9	
Green Ext Time (p_c), s	0.0	0.3		0.3	0.4		0.1	3.1		0.0	3.4	

Intersection Summary			
HCM 2010 Ctrl Delay		26.5	
HCM 2010 LOS		C	

Notes

Intersection	
Intersection Delay, s/veh	58.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	130	0	70	190	610	0	0	380	250
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	141	0	76	207	663	0	0	413	272
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1630	1766	673	685	0	0	668	0	0
Stage 1			1081	1081	-	-	-	-	-	-	-
Stage 2			549	685	-	-	-	-	-	-	-
Follow-up Headway			3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Capacity-1 Maneuver			# 111	83	452	899	-	-	912	-	-
Stage 1			323	292	-	-	-	-	-	-	-
Stage 2			575	445	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 85	0	448	895	-	-	908	-	-
Mov Capacity-2 Maneuver			# 85	0	-	-	-	-	-	-	-
Stage 1			247	0	-	-	-	-	-	-	-
Stage 2			573	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 465.2	2.4	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	895	-	-	119	908	-	-
HCM Control Delay, s	10.225	-	-	$ 465.2	0	-	-
HCM Lane V/C Ratio	0.23	-	-	1.83	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	0.9	-	-	17.1	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	250	0	340	0	0	0	0	550	220	80	430	0
Number	7	4	14				5	2	12	1	6	16
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	181.0	181.0	181.0				0.0	181.0	181.0	181.0	181.0	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	503	0	449				0	769	653	111	1017	0
Arrive On Green	0.29	0.00	0.29				0.00	0.42	0.42	0.06	0.56	0.00
Sat Flow, veh/h	1723	0	1538				0	1810	1538	1723	1810	0
Grp Volume(v), veh/h	272	0	370				0	598	239	87	467	0
Grp Sat Flow(s),veh/h/ln	1723	0	1538				0	1810	1538	1723	1810	0
Q Serve(g_s), s	7.3	0.0	12.3				0.0	15.6	5.8	2.7	8.4	0.0
Cycle Q Clear(g_c), s	7.3	0.0	12.3				0.0	15.6	5.8	2.7	8.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	503	0	449				0	769	653	111	1017	0
V/C Ratio(X)	0.54	0.00	0.82				0.00	0.78	0.37	0.79	0.46	0.00
Avail Cap(c_a), veh/h	660	0	589				0	1253	1065	283	1682	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	18.1				0.0	13.6	10.7	25.3	7.1	0.0
Incr Delay (d2), s/veh	0.9	0.0	7.2				0.0	1.7	0.3	11.5	0.3	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
%ile Back of Q (50%), veh/ln	2.9	0.0	5.2				0.0	6.0	1.9	1.4	2.8	0.0
Lane Grp Delay (d), s/veh	17.2	0.0	25.3				0.0	15.3	11.1	36.8	7.4	0.0
Lane Grp LOS	B		C					B	B	D	A	
Approach Vol, veh/h		642						837			554	
Approach Delay, s/veh		21.9						14.1			12.0	
Approach LOS		C						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		20.0						27.3		7.5	34.8	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		21.0						38.0		9.0	51.0	
Max Q Clear Time (g_c+I1), s		14.3						17.6		4.7	10.4	
Green Ext Time (p_c), s		1.7						5.7		0.1	6.5	

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	170	20	60	130	20	140
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	22	65	141	22	152
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	266	75	0	0	70	0
Stage 1	70	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	723	986	-	-	1531	-
Stage 1	953	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	707	978	-	-	1525	-
Mov Capacity-2 Maneuver	707	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.9
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	707	978	1525	-
HCM Control Delay, s	-	-	11.9	8.8	7.395	-
HCM Lane V/C Ratio	-	-	0.26	0.02	0.01	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	1.0	0.1	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	22.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	60	100	110	80	20	60	170	130	10	310	20
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	65	109	120	87	22	65	185	141	11	337	22
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	820	837	358	853	776	265	364	0	0	331	0	0
Stage 1	375	375	-	391	391	-	-	-	-	-	-	-
Stage 2	445	462	-	462	385	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	294	303	686	279	328	774	1195	-	-	1228	-	-
Stage 1	646	617	-	633	607	-	-	-	-	-	-	-
Stage 2	592	565	-	580	611	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	211	282	680	182	305	768	1190	-	-	1223	-	-
Mov Capacity-2 Maneuver	211	282	-	182	305	-	-	-	-	-	-	-
Stage 1	608	609	-	596	571	-	-	-	-	-	-	-
Stage 2	459	532	-	429	603	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.3	95.9	1.4	0.2
HCM LOS	C	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1190	-	-	417	235	1223	-	-
HCM Control Delay, s	8.201	-	-	20.3	95.9	7.97	-	-
HCM Lane V/C Ratio	0.06	-	-	0.44	0.97	0.01	-	-
HCM Lane LOS	A	-	-	C	F	A	-	-
HCM 95th-tile Q, veh	0.2	-	-	2.2	8.8	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	54.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	80	40	200	40	60	180	160	420	30	90	480	70
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	87	43	217	43	65	196	174	457	33	98	522	76
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	23.7	35.3	66.3	67.8
HCM LOS	C	E	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	27%	0%
Vol Thru, %	0%	93%	0%	100%	0%	0%	25%	73%	77%
Vol Right, %	0%	7%	0%	0%	100%	0%	75%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	450	80	40	200	40	240	330	310
LT Vol	0	420	0	40	0	0	60	240	240
Through Vol	0	30	0	0	200	0	180	0	70
RT Vol	160	0	80	0	0	40	0	90	0
Lane Flow Rate	174	489	87	43	217	43	261	359	337
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.522	1	0.273	0.131	0.611	0.137	0.75	0.992	0.904
Departure Headway (Hd)	10.812	10.244	11.322	10.823	10.125	11.361	10.344	9.955	9.661
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	334	357	318	332	357	317	350	366	377
Service Time	8.566	7.997	9.063	8.564	7.865	9.1	8.083	7.693	7.399
HCM Lane V/C Ratio	0.521	1.37	0.274	0.13	0.608	0.136	0.746	0.981	0.894
HCM Control Delay	24.8	81.1	18.3	15.2	27.6	15.9	38.5	77.7	57.2
HCM Lane LOS	C	F	C	C	D	C	E	F	F
HCM 95th-tile Q	2.9	11.5	1.1	0.4	3.9	0.5	5.8	11.4	9.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	48
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	10	70	120	20	30	90	550	150	30	670	20
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	33	11	76	130	22	33	98	598	163	33	728	22
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	14.6	22.4	54.3	52.3
HCM LOS	B	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	75%	0%	71%	100%	0%	0%
Vol Thru, %	0%	100%	0%	25%	0%	12%	0%	100%	92%
Vol Right, %	0%	0%	100%	0%	100%	18%	0%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	550	150	40	70	170	30	447	243
LT Vol	0	550	0	10	0	20	0	447	223
Through Vol	0	0	150	0	70	30	0	0	20
RT Vol	90	0	0	30	0	120	30	0	0
Lane Flow Rate	98	598	163	43	76	185	33	486	264
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.237	1	0.34	0.126	0.199	0.508	0.078	1	0.594
Departure Headway (Hd)	8.718	8.216	7.515	10.472	9.403	9.892	8.648	8.147	8.089
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	413	448	479	343	383	366	415	447	447
Service Time	6.446	5.944	5.242	8.204	7.134	7.619	6.376	5.874	5.817
HCM Lane V/C Ratio	0.237	1.335	0.34	0.125	0.198	0.505	0.08	1.087	0.591
HCM Control Delay	14.1	71.9	14.1	14.7	14.5	22.4	12.1	71.5	22
HCM Lane LOS	B	F	B	B	B	C	B	F	C
HCM 95th-tile Q	0.9	12.8	1.5	0.4	0.7	2.8	0.3	12.9	3.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	40	0	50	240	740	0	0	300	560
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	43	0	54	261	804	0	0	326	609
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1657	1657	412	326	0	0	809	0	0
Stage 1			1331	1331	-	-	-	-	-	-	-
Stage 2			326	326	-	-	-	-	-	-	-
Follow-up Headway			3.538	4.038	3.338	2.236	-	-	2.24	-	-
Pot Capacity-1 Maneuver			96	96	585	1222	-	-	800	-	-
Stage 1			209	220	-	-	-	-	-	-	-
Stage 2			725	643	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			75	0	580	1217	-	-	797	-	-
Mov Capacity-2 Maneuver			75	0	-	-	-	-	-	-	-
Stage 1			163	0	-	-	-	-	-	-	-
Stage 2			722	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42.1	2.1	0
HCM LOS	E	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1217	-	-	75	240	797	-	-
HCM Control Delay, s	8.763	-	-	80.5	25.9	0	-	-
HCM Lane V/C Ratio	0.21	-	-	0.39	0.29	-	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th-tile Q, veh	0.8	-	-	1.5	1.1	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	22.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	440	0	140	0	0	0	0	540	50	50	290	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
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	478	0	152	0	0	0	0	587	54	54	315	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	17.9	23.2	29.6
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	270	50	220	220	140	50	290
LT Vol	270	270	0	0	0	0	0	290
Through Vol	0	0	50	0	0	140	0	0
RT Vol	0	0	0	220	220	0	50	0
Lane Flow Rate	293	293	54	239	239	152	54	315
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.651	0.651	0.082	0.534	0.534	0.288	0.136	0.745
Departure Headway (Hd)	7.991	7.991	5.462	8.043	8.043	6.82	9.019	8.506
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	452	654	450	450	527	397	426
Service Time	5.741	5.741	3.21	5.782	5.782	4.559	6.778	6.264
HCM Lane V/C Ratio	0.648	0.648	0.083	0.531	0.531	0.288	0.136	0.739
HCM Control Delay	24.5	24.5	8.7	19.7	19.7	12.3	13.2	32.4
HCM Lane LOS	C	C	A	C	C	B	B	D
HCM 95th-tile Q	4.5	4.5	0.3	3.1	3.1	1.2	0.5	6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	310	140	110	200	130	140
Number	2	12	1	6	7	14
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	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1
Cap, veh/h	859	730	146	1116	496	442
Arrive On Green	0.47	0.00	0.08	0.60	0.28	0.28
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	316	0	112	204	133	143
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	7.8	0.0	4.4	3.5	4.2	5.1
Cycle Q Clear(g_c), s	7.8	0.0	4.4	3.5	4.2	5.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	859	730	146	1116	496	442
V/C Ratio(X)	0.37	0.00	0.77	0.18	0.27	0.32
Avail Cap(c_a), veh/h	859	730	372	1353	496	442
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	31.8	6.2	19.8	20.1
Incr Delay (d2), s/veh	1.2	0.0	8.2	0.1	1.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	0.0	2.1	1.1	1.8	2.1
Lane Grp Delay (d), s/veh	13.4	0.0	40.1	6.3	21.1	22.0
Lane Grp LOS	B		D	A	C	C
Approach Vol, veh/h	316			316	276	
Approach Delay, s/veh	13.4			18.3	21.6	
Approach LOS	B			B	C	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	37.0		9.9	46.9		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	33.0		15.0	52.0		
Max Q Clear Time (g_c+I1), s	9.8		6.4	5.5		
Green Ext Time (p_c), s	1.8		0.2	1.8		

Intersection Summary						
HCM 2010 Ctrl Delay			17.6			
HCM 2010 LOS			B			

Notes

Intersection	
Intersection Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	40	20	30	50	20	70	30	160	40	80	120	50
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	22	33	54	22	76	33	174	43	87	130	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	624	597	140	603	575	206	135	0	0	222	0	0
Stage 1	309	309	-	266	266	-	-	-	-	-	-	-
Stage 2	315	288	-	337	309	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	398	416	908	411	429	835	1449	-	-	1347	-	-
Stage 1	701	660	-	739	689	-	-	-	-	-	-	-
Stage 2	696	674	-	677	660	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	318	372	900	348	384	828	1443	-	-	1341	-	-
Mov Capacity-2 Maneuver	318	372	-	348	384	-	-	-	-	-	-	-
Stage 1	680	609	-	717	668	-	-	-	-	-	-	-
Stage 2	593	654	-	581	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	15.3	1	2.5
HCM LOS	C	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1443	-	-	423	499	1341	-	-
HCM Control Delay, s	7.552	0	-	16.1	15.3	7.871	0	-
HCM Lane V/C Ratio	0.02	-	-	0.23	0.30	0.07	-	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th-tile Q, veh	0.1	-	-	0.9	1.3	0.2	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	85	10	10	15	35	95
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	11	11	16	38	102
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Minor 1			
Conflicting Flow All	102	0	376	21	16	-
Stage 1	-	-	199	-	-	-
Stage 2	-	-	177	-	-	-
Follow-up Headway	-	-	4.018	3.318	2.218	-
Pot Capacity-1 Maneuver	-	-	555	1056	1602	-
Stage 1	-	-	736	-	-	-
Stage 2	-	-	-	-	-	-
Time blocked-Platoon, %	0	-	0	0	0	-
Mov Capacity-1 Maneuver	-	-	# 0	1047	1595	-
Mov Capacity-2 Maneuver	-	-	# 0	-	-	-
Stage 1	-	-	# 0	-	-	-
Stage 2	-	-	# 0	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	-	2
HCM LOS	-	-	-

Minor Lane / Major Mvmt	EBL	EBT	WBLn1	SBL	SBR
Cap, veh/h	-	-	-	1595	-
HCM Control Delay, s	-	-	-	7.312	-
HCM Lane V/C Ratio	-	-	-	0.02	0.00
HCM Lane LOS	-	-	-	A	-
HCM 95th-tile Q, veh	-	-	-	0.1	0.0

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	20	110	290	20	70	180	480	150	40	460	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	100	100	174	536	57	198	258	1269	568	65	862	38
Arrive On Green	0.11	0.11	0.11	0.16	0.16	0.16	0.15	0.36	0.36	0.04	0.25	0.25
Sat Flow, veh/h	909	909	1583	3442	368	1271	1774	3539	1583	1774	3454	152
Grp Volume(v), veh/h	44	0	120	315	0	98	196	522	163	43	256	266
Grp Sat Flow(s),veh/h/ln	1817	0	1583	1721	0	1639	1774	1770	1583	1774	1770	1836
Q Serve(g_s), s	1.0	0.0	3.4	4.0	0.0	2.5	5.0	5.2	3.5	1.1	6.0	6.0
Cycle Q Clear(g_c), s	1.0	0.0	3.4	4.0	0.0	2.5	5.0	5.2	3.5	1.1	6.0	6.0
Prop In Lane	0.50		1.00	1.00		0.78	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	200	0	174	536	0	255	258	1269	568	65	442	458
V/C Ratio(X)	0.22	0.00	0.69	0.59	0.00	0.38	0.76	0.41	0.29	0.66	0.58	0.58
Avail Cap(c_a), veh/h	617	0	537	1168	0	556	565	1952	873	226	638	662
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	0.0	20.2	18.5	0.0	17.9	19.3	11.4	10.8	22.4	15.5	15.5
Incr Delay (d2), s/veh	0.5	0.0	4.8	1.0	0.0	0.9	4.6	0.2	0.3	11.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.5	0.0	1.4	1.7	0.0	1.0	2.4	2.1	1.2	0.7	2.5	2.6
Lane Grp Delay (d), s/veh	19.7	0.0	25.0	19.5	0.0	18.8	23.9	11.6	11.1	33.4	16.7	16.7
Lane Grp LOS	B		C	B		B	C	B	B	C	B	B
Approach Vol, veh/h		164			413			881			565	
Approach Delay, s/veh		23.6			19.4			14.2			18.0	
Approach LOS		C			B			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		9.2			11.3		10.9	20.9		5.7	15.8	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		15.0	26.0		6.0	17.0	
Max Q Clear Time (g_c+I1), s		5.4			6.0		7.0	7.2		3.1	8.0	
Green Ext Time (p_c), s		0.4			1.4		0.4	5.4		0.0	3.8	

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	70	0	110	0	740	380	0	410	450
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	76	0	120	0	804	413	0	446	489
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	1032	1255	412	446	0	0	809	0	0
Stage 1	809	809	-	-	-	-	-	-	-
Stage 2	223	446	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	229	170	589	1111	-	-	812	-	-
Stage 1	398	392	-	-	-	-	-	-	-
Stage 2	793	572	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	227	0	584	1106	-	-	809	-	-
Mov Capacity-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	396	0	-	-	-	-	-	-	-
Stage 2	790	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.2	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1106	-	-	287	584	809	-	-
HCM Control Delay, s	0	-	-	25.8	12.1	0	-	-
HCM Lane V/C Ratio	-	-	-	0.40	0.14	-	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.9	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	560	0	500	0	0	0	0	560	60	100	380	0
Number	7	4	14				5	2	12	1	6	16
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	186.3	186.3	186.3				0.0	186.3	186.3	186.3	186.3	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	785	0	700				0	899	402	142	1446	0
Arrive On Green	0.44	0.00	0.44				0.00	0.25	0.00	0.08	0.41	0.00
Sat Flow, veh/h	1774	0	1583				0	3632	1583	1774	3632	0
Grp Volume(v), veh/h	609	0	543				0	609	0	109	413	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1770	1583	1774	1770	0
Q Serve(g_s), s	15.6	0.0	15.6				0.0	8.3	0.0	3.2	4.2	0.0
Cycle Q Clear(g_c), s	15.6	0.0	15.6				0.0	8.3	0.0	3.2	4.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	785	0	700				0	899	402	142	1446	0
V/C Ratio(X)	0.78	0.00	0.78				0.00	0.68	0.00	0.77	0.29	0.00
Avail Cap(c_a), veh/h	1324	0	1181				0	1254	561	298	2112	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	12.7				0.0	18.0	0.0	24.2	10.6	0.0
Incr Delay (d2), s/veh	1.7	0.0	1.9				0.0	0.9	0.0	8.5	0.1	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
%ile Back of Q (50%), veh/ln	6.3	0.0	5.6				0.0	3.4	0.0	1.7	1.6	0.0
Lane Grp Delay (d), s/veh	14.4	0.0	14.6				0.0	18.9	0.0	32.7	10.7	0.0
Lane Grp LOS	B		B					B		C	B	
Approach Vol, veh/h		1152						609			522	
Approach Delay, s/veh		14.5						18.9			15.3	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		27.7						17.6		8.3	25.9	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		40.0						19.0		9.0	32.0	
Max Q Clear Time (g_c+I1), s		17.6						10.3		5.2	6.2	
Green Ext Time (p_c), s		6.1						3.3		0.1	5.2	

Intersection Summary												
HCM 2010 Ctrl Delay			15.9									
HCM 2010 LOS			B									

Notes												

Intersection	
Intersection Delay, s/veh	72.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	110	300	90	90	190	100	80	210	140	140	180	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	117	319	96	96	202	106	85	223	149	149	191	85
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	77.6	77.4	77.6	55.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	19%	22%	24%	44%	0%
Vol Thru, %	49%	60%	50%	56%	0%
Vol Right, %	33%	18%	26%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	430	500	380	320	80
LT Vol	210	300	190	180	0
Through Vol	140	90	100	0	80
RT Vol	80	110	90	140	0
Lane Flow Rate	457	532	404	340	85
Geometry Grp	5	2	2	7	7
Degree of Util (X)	1	1	1	0.941	0.213
Departure Headway (Hd)	9.404	9.398	9.351	9.95	9.031
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	389	388	388	368	400
Service Time	7.447	7.442	7.395	7.65	6.731
HCM Lane V/C Ratio	1.175	1.371	1.041	0.924	0.212
HCM Control Delay	77.6	77.6	77.4	65.6	14.2
HCM Lane LOS	F	F	F	F	B
HCM 95th-tile Q	12	12	12	10	0.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	30	100	240	15	60	50	370	210	50	430	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	49	46	153	313	87	354	69	458	260	69	724	34
Arrive On Green	0.03	0.12	0.12	0.18	0.27	0.27	0.04	0.41	0.41	0.04	0.41	0.41
Sat Flow, veh/h	1774	381	1259	1774	322	1309	1774	1117	634	1774	1765	83
Grp Volume(v), veh/h	33	0	142	261	0	81	54	0	630	54	0	489
Grp Sat Flow(s),veh/h/ln	1774	0	1641	1774	0	1632	1774	0	1751	1774	0	1848
Q Serve(g_s), s	1.2	0.0	5.3	9.0	0.0	2.4	1.9	0.0	21.0	1.9	0.0	13.4
Cycle Q Clear(g_c), s	1.2	0.0	5.3	9.0	0.0	2.4	1.9	0.0	21.0	1.9	0.0	13.4
Prop In Lane	1.00		0.77	1.00		0.80	1.00		0.36	1.00		0.04
Lane Grp Cap(c), veh/h	49	0	200	313	0	441	69	0	718	69	0	758
V/C Ratio(X)	0.67	0.00	0.71	0.83	0.00	0.18	0.79	0.00	0.88	0.79	0.00	0.65
Avail Cap(c_a), veh/h	168	0	415	393	0	620	140	0	831	112	0	848
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	30.4	0.0	26.7	25.1	0.0	17.7	30.1	0.0	17.2	30.1	0.0	15.0
Incr Delay (d2), s/veh	14.5	0.0	4.6	11.9	0.0	0.2	17.5	0.0	9.5	17.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.7	0.0	2.3	4.7	0.0	0.9	1.1	0.0	9.8	1.1	0.0	5.6
Lane Grp Delay (d), s/veh	44.9	0.0	31.3	37.0	0.0	17.9	47.6	0.0	26.7	47.6	0.0	16.4
Lane Grp LOS	D		C	D		B	D		C	D		B
Approach Vol, veh/h		175			342			684			543	
Approach Delay, s/veh		33.9			32.5			28.3			19.5	
Approach LOS		C			C			C			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	5.8	11.7		15.1	21.1		6.4	29.9		6.4	29.9	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	6.0	16.0		14.0	24.0		5.0	30.0		4.0	29.0	
Max Q Clear Time (g_c+I1), s	3.2	7.3		11.0	4.4		3.9	23.0		3.9	15.4	
Green Ext Time (p_c), s	0.0	0.5		0.3	0.8		0.0	3.0		0.0	4.3	

Intersection Summary			
HCM 2010 Ctrl Delay		26.9	
HCM 2010 LOS		C	

Notes

Intersection	
Intersection Delay, s/veh	195.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	140	0	60	330	570	0	0	450	320
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	0	0	152	0	65	359	620	0	0	489	348
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			2005	2179	630	837	0	0	625	0	0
Stage 1			1342	1342	-	-	-	-	-	-	-
Stage 2			663	837	-	-	-	-	-	-	-
Follow-up Headway			3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Capacity-1 Maneuver			# 64	45	476	784	-	-	942	-	-
Stage 1			240	218	-	-	-	-	-	-	-
Stage 2			507	378	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 34	0	472	781	-	-	938	-	-
Mov Capacity-2 Maneuver			# 34	0	-	-	-	-	-	-	-
Stage 1			# 129	0	-	-	-	-	-	-	-
Stage 2			505	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 1805.5	4.9	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	781	-	-	47	938	-	-
HCM Control Delay, s	13.464	-	-	$ 1805.5	0	-	-
HCM Lane V/C Ratio	0.46	-	-	4.63	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	2.4	-	-	24.6	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	0	350	0	0	0	0	630	200	70	520	0
Number	7	4	14				5	2	12	1	6	16
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	182.7	182.7	182.7				0.0	182.7	182.7	182.7	182.7	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	496	0	442				0	844	718	97	1066	0
Arrive On Green	0.28	0.00	0.28				0.00	0.46	0.46	0.06	0.58	0.00
Sat Flow, veh/h	1740	0	1553				0	1827	1553	1740	1827	0
Grp Volume(v), veh/h	293	0	380				0	685	217	76	565	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553				0	1827	1553	1740	1827	0
Q Serve(g_s), s	8.8	0.0	14.1				0.0	19.6	5.3	2.6	11.3	0.0
Cycle Q Clear(g_c), s	8.8	0.0	14.1				0.0	19.6	5.3	2.6	11.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	496	0	442				0	844	718	97	1066	0
V/C Ratio(X)	0.59	0.00	0.86				0.00	0.81	0.30	0.79	0.53	0.00
Avail Cap(c_a), veh/h	573	0	511				0	1203	1022	229	1563	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.7	0.0	20.6				0.0	14.1	10.2	28.3	7.6	0.0
Incr Delay (d2), s/veh	1.2	0.0	12.4				0.0	2.9	0.2	13.0	0.4	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
%ile Back of Q (50%), veh/ln	3.7	0.0	6.6				0.0	7.9	1.7	1.4	3.9	0.0
Lane Grp Delay (d), s/veh	19.9	0.0	33.0				0.0	16.9	10.5	41.4	8.0	0.0
Lane Grp LOS	B		C					B	B	D	A	
Approach Vol, veh/h		673						902			641	
Approach Delay, s/veh		27.3						15.4			12.0	
Approach LOS		C						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		21.3						32.1		7.4	39.5	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		20.0						40.0		8.0	52.0	
Max Q Clear Time (g_c+I1), s		16.1						21.6		4.6	13.3	
Green Ext Time (p_c), s		1.2						6.5		0.0	7.8	

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	120	10	80	100	10	95
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	11	87	109	11	103
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	217	97	0	0	92	0
Stage 1	92	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	771	959	-	-	1503	-
Stage 1	932	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	759	951	-	-	1497	-
Mov Capacity-2 Maneuver	759	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.7
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	759	951	1497	-
HCM Control Delay, s	-	-	10.7	8.8	7.422	-
HCM Lane V/C Ratio	-	-	0.17	0.01	0.01	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	0.6	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	20	60	40	20	20	80	200	60	20	160	30
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	21	63	42	21	21	84	211	63	21	168	32
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	668	678	194	689	663	252	205	0	0	279	0	0
Stage 1	231	231	-	416	416	-	-	-	-	-	-	-
Stage 2	437	447	-	273	247	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	372	374	847	360	382	787	1366	-	-	1284	-	-
Stage 1	772	713	-	614	592	-	-	-	-	-	-	-
Stage 2	598	573	-	733	702	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	322	342	840	296	350	780	1360	-	-	1279	-	-
Mov Capacity-2 Maneuver	322	342	-	296	350	-	-	-	-	-	-	-
Stage 1	721	698	-	574	553	-	-	-	-	-	-	-
Stage 2	523	535	-	644	688	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	17.7	1.8	0.7
HCM LOS	B	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1360	-	-	493	367	1279	-	-
HCM Control Delay, s	7.822	-	-	14.5	17.7	7.862	-	-
HCM Lane V/C Ratio	0.06	-	-	0.24	0.23	0.02	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th-tile Q, veh	0.2	-	-	0.9	0.9	0.1	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	35.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	40	40	80	70	35	80	80	450	70	70	330	30
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	43	43	87	76	38	87	87	489	76	76	359	33
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	13	14.2	60.9	18.7
HCM LOS	B	B	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	30%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	30%	70%	85%
Vol Right, %	0%	13%	0%	0%	100%	0%	70%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	520	40	40	80	70	115	235	195
LT Vol	0	450	0	40	0	0	35	165	165
Through Vol	0	70	0	0	80	0	80	0	30
RT Vol	80	0	40	0	0	70	0	70	0
Lane Flow Rate	87	565	43	43	87	76	125	255	212
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.195	1	0.113	0.107	0.198	0.195	0.286	0.561	0.45
Departure Headway (Hd)	8.092	7.487	9.387	8.889	8.191	9.227	8.247	7.907	7.651
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	445	486	384	405	440	391	438	455	468
Service Time	5.809	5.204	7.098	6.599	5.901	6.938	5.957	5.705	5.449
HCM Lane V/C Ratio	0.196	1.163	0.112	0.106	0.198	0.194	0.285	0.56	0.453
HCM Control Delay	12.8	68.3	13.3	12.7	12.9	14.2	14.2	20.5	16.6
HCM Lane LOS	B	F	B	B	B	B	B	C	C
HCM 95th-tile Q	0.7	13.4	0.4	0.4	0.7	0.7	1.2	3.4	2.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	36
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	50	120	110	20	20	180	480	100	30	400	40
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	76	54	130	120	22	22	196	522	109	33	435	43
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	16.8	20.8	52.2	24.3
HCM LOS	C	C	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	58%	0%	73%	100%	0%	0%
Vol Thru, %	0%	100%	0%	42%	0%	13%	0%	100%	77%
Vol Right, %	0%	0%	100%	0%	100%	13%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	480	100	120	120	150	30	267	173
LT Vol	0	480	0	50	0	20	0	267	133
Through Vol	0	0	100	0	120	20	0	0	40
RT Vol	180	0	0	70	0	110	30	0	0
Lane Flow Rate	196	522	109	130	130	163	33	290	188
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.481	1	0.23	0.355	0.319	0.452	0.083	0.701	0.447
Departure Headway (Hd)	8.852	8.334	7.61	9.789	8.803	9.98	9.21	8.708	8.546
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	438	470	367	407	360	389	414	420
Service Time	6.632	6.114	5.388	7.561	6.576	7.757	6.976	6.473	6.311
HCM Lane V/C Ratio	0.482	1.192	0.232	0.354	0.319	0.453	0.085	0.7	0.448
HCM Control Delay	19.6	72.6	12.7	17.9	15.7	20.8	12.8	29.6	18.1
HCM Lane LOS	C	F	B	C	C	C	B	D	C
HCM 95th-tile Q	2.5	12.7	0.9	1.6	1.4	2.3	0.3	5.2	2.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	40	0	60	130	700	0	0	330	300
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	43	0	65	141	761	0	0	359	326
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1407	1407	390	359	0	0	766	0	0
Stage 1			1048	1048	-	-	-	-	-	-	-
Stage 2			359	359	-	-	-	-	-	-	-
Follow-up Headway			3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver			141	138	610	1200	-	-	843	-	-
Stage 1			300	304	-	-	-	-	-	-	-
Stage 2			706	626	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			123	0	605	1195	-	-	839	-	-
Mov Capacity-2 Maneuver			123	0	-	-	-	-	-	-	-
Stage 1			264	0	-	-	-	-	-	-	-
Stage 2			703	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.8	1.3	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1195	-	-	123	353	839	-	-
HCM Control Delay, s	8.416	-	-	43.1	18.1	0	-	-
HCM Lane V/C Ratio	0.12	-	-	0.24	0.23	-	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th-tile Q, veh	0.4	-	-	0.9	0.9	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	430	0	220	0	0	0	0	400	60	90	280	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	467	0	239	0	0	0	0	435	65	98	304	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	16.9	17.1	24.5
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	200	200	60	215	215	220	90	280
LT Vol	200	200	0	0	0	0	0	280
Through Vol	0	0	60	0	0	220	0	0
RT Vol	0	0	0	215	215	0	90	0
Lane Flow Rate	217	217	65	234	234	239	98	304
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.488	0.488	0.101	0.504	0.504	0.435	0.237	0.695
Departure Headway (Hd)	8.088	8.088	5.593	7.77	7.77	6.551	8.73	8.217
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	446	446	639	465	465	550	412	441
Service Time	5.838	5.838	3.342	5.508	5.508	4.289	6.481	5.968
HCM Lane V/C Ratio	0.487	0.487	0.102	0.503	0.503	0.435	0.238	0.689
HCM Control Delay	18.3	18.3	9	18.2	18.2	14.3	14.2	27.8
HCM Lane LOS	C	C	A	C	C	B	B	D
HCM 95th-tile Q	2.6	2.6	0.3	2.8	2.8	2.2	0.9	5.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	160	204	151	350	201	92
Number	2	12	1	6	7	14
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	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	265	225	542	943	619	553
Arrive On Green	0.15	0.00	0.31	0.52	0.36	0.36
Sat Flow, veh/h	1810	1538	1723	1810	1723	1538
Grp Volume(v), veh/h	174	0	164	380	218	100
Grp Sat Flow(s),veh/h/ln	1810	1538	1723	1810	1723	1538
Q Serve(g_s), s	6.1	0.0	4.8	8.5	6.2	3.0
Cycle Q Clear(g_c), s	6.1	0.0	4.8	8.5	6.2	3.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	265	225	542	943	619	553
V/C Ratio(X)	0.66	0.00	0.30	0.40	0.35	0.18
Avail Cap(c_a), veh/h	623	530	542	1300	619	553
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	17.3	9.7	15.7	14.7
Incr Delay (d2), s/veh	2.7	0.0	1.4	0.3	1.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.6	0.0	1.9	2.8	2.6	1.1
Lane Grp Delay (d), s/veh	29.7	0.0	18.8	10.0	17.3	15.4
Lane Grp LOS	C		B	A	B	B
Approach Vol, veh/h	174			544	318	
Approach Delay, s/veh	29.7			12.6	16.7	
Approach LOS	C			B	B	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	13.8		25.0	38.8		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	23.0		21.0	48.0		
Max Q Clear Time (g_c+I1), s	8.1		6.8	10.5		
Green Ext Time (p_c), s	1.7		0.4	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	37	21	32	50	20	110	11	146	60	130	202	22
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	23	35	54	22	120	12	159	65	141	220	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	798	760	230	756	727	201	225	0	0	229	0	0
Stage 1	507	507	-	220	220	-	-	-	-	-	-	-
Stage 2	291	253	-	536	507	-	-	-	-	-	-	-
Follow-up Headway	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Capacity-1 Maneuver	303	334	807	323	349	837	1338	-	-	1333	-	-
Stage 1	546	538	-	780	719	-	-	-	-	-	-	-
Stage 2	715	696	-	527	538	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	219	288	800	259	300	830	1332	-	-	1327	-	-
Mov Capacity-2 Maneuver	219	288	-	259	300	-	-	-	-	-	-	-
Stage 1	538	470	-	769	709	-	-	-	-	-	-	-
Stage 2	585	686	-	419	470	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.2	18.5	0.4	3
HCM LOS	C	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1332	-	-	319	459	1327	-	-
HCM Control Delay, s	7.727	0	-	21.2	18.5	8.036	0	-
HCM Lane V/C Ratio	0.01	-	-	0.31	0.43	0.11	-	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th-tile Q, veh	0.0	-	-	1.3	2.1	0.4	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	5	1	0	10	10	3	10	0	5	3	45
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	65	5	1	0	11	11	3	11	0	5	3	49
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	7.7	6.9	7.3	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	91%	0%	9%
Vol Thru, %	77%	8%	50%	6%
Vol Right, %	0%	2%	50%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	66	20	53
LT Vol	10	5	10	3
Through Vol	0	1	10	45
RT Vol	3	60	0	5
Lane Flow Rate	14	72	22	58
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.085	0.023	0.058
Departure Headway (Hd)	4.186	4.248	3.814	3.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	849	844	935	983
Service Time	2.242	2.271	1.851	1.667
HCM Lane V/C Ratio	0.016	0.085	0.024	0.059
HCM Control Delay	7.3	7.7	6.9	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	30	220	250	10	70	90	461	150	90	693	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7	182.7
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	172	172	299	445	26	182	126	1102	493	127	1095	32
Arrive On Green	0.19	0.19	0.19	0.13	0.13	0.13	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	891	891	1553	3375	200	1383	1740	3471	1553	1740	3444	101
Grp Volume(v), veh/h	66	0	239	272	0	87	98	501	163	98	379	396
Grp Sat Flow(s),veh/h/ln	1782	0	1553	1688	0	1583	1740	1736	1553	1740	1736	1809
Q Serve(g_s), s	1.7	0.0	8.2	4.3	0.0	2.8	3.1	6.4	4.5	3.1	10.7	10.7
Cycle Q Clear(g_c), s	1.7	0.0	8.2	4.3	0.0	2.8	3.1	6.4	4.5	3.1	10.7	10.7
Prop In Lane	0.50		1.00	1.00		0.87	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	343	0	299	445	0	208	126	1102	493	127	552	575
V/C Ratio(X)	0.19	0.00	0.80	0.61	0.00	0.42	0.78	0.45	0.33	0.77	0.69	0.69
Avail Cap(c_a), veh/h	509	0	444	964	0	452	249	1364	610	311	744	775
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	21.6	23.0	0.0	22.3	25.5	15.2	14.6	25.5	16.7	16.7
Incr Delay (d2), s/veh	0.3	0.0	6.2	1.4	0.0	1.3	10.0	0.3	0.4	9.6	1.6	1.6
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 Back of Q (50%), veh/ln	0.8	0.0	3.5	1.8	0.0	1.1	1.6	2.6	1.6	1.6	4.5	4.6
Lane Grp Delay (d), s/veh	19.2	0.0	27.8	24.3	0.0	23.7	35.5	15.5	15.0	35.2	18.3	18.3
Lane Grp LOS	B		C	C		C	D	B	B	D	B	B
Approach Vol, veh/h		305			359			762			873	
Approach Delay, s/veh		26.0			24.2			18.0			20.2	
Approach LOS		C			C			B			C	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		14.8			11.4		8.0	21.8		8.1	21.8	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		8.0	22.0		10.0	24.0	
Max Q Clear Time (g_c+I1), s		10.2			6.3		5.1	8.4		5.1	12.7	
Green Ext Time (p_c), s		0.6			1.1		0.1	5.7		0.1	5.1	

Intersection Summary		
HCM 2010 Ctrl Delay		20.8
HCM 2010 LOS		C

Notes

Intersection	
Intersection Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	70	0	120	0	661	460	0	412	751
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	76	0	130	0	718	500	0	448	816
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	947	1171	369	448	0	0	723	0	0
Stage 1	723	723	-	-	-	-	-	-	-
Stage 2	224	448	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	259	191	628	1109	-	-	875	-	-
Stage 1	441	429	-	-	-	-	-	-	-
Stage 2	792	571	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	257	0	623	1104	-	-	871	-	-
Mov Capacity-2 Maneuver	257	0	-	-	-	-	-	-	-
Stage 1	439	0	-	-	-	-	-	-	-
Stage 2	789	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.8	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1104	-	-	327	623	871	-	-
HCM Control Delay, s	0	-	-	22.2	11.7	0	-	-
HCM Lane V/C Ratio	-	-	-	0.37	0.14	-	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.6	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	400	0	230	0	0	0	0	721	120	180	302	0
Number	7	4	14				5	2	12	1	6	16
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	184.5	184.5	184.5				0.0	184.5	184.5	184.5	184.5	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	553	0	491				0	1113	498	252	1878	0
Arrive On Green	0.31	0.00	0.31				0.00	0.32	0.00	0.14	0.54	0.00
Sat Flow, veh/h	1757	0	1560				0	3597	1568	1757	3597	0
Grp Volume(v), veh/h	435	0	250				0	784	0	196	328	0
Grp Sat Flow(s),veh/h/ln	1757	0	1560				0	1752	1568	1757	1752	0
Q Serve(g_s), s	12.1	0.0	7.0				0.0	10.5	0.0	5.8	2.6	0.0
Cycle Q Clear(g_c), s	12.1	0.0	7.0				0.0	10.5	0.0	5.8	2.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	553	0	491				0	1113	498	252	1878	0
V/C Ratio(X)	0.79	0.00	0.51				0.00	0.70	0.00	0.78	0.17	0.00
Avail Cap(c_a), veh/h	952	0	845				0	1637	732	459	2815	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.7	0.0	15.0				0.0	16.1	0.0	22.1	6.4	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.8				0.0	0.8	0.0	5.2	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
%ile Back of Q (50%), veh/ln	5.1	0.0	2.5				0.0	4.3	0.0	2.7	0.9	0.0
Lane Grp Delay (d), s/veh	19.2	0.0	15.8				0.0	16.9	0.0	27.3	6.4	0.0
Lane Grp LOS	B		B					B		C	A	
Approach Vol, veh/h		685						784			524	
Approach Delay, s/veh		18.0						16.9			14.2	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		20.9						21.0		11.7	32.7	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		29.0						25.0		14.0	43.0	
Max Q Clear Time (g_c+I1), s		14.1						12.5		7.8	4.6	
Green Ext Time (p_c), s		2.8						4.5		0.4	6.2	

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	68.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	230	140	149	389	129	110	190	86	103	160	60
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	76	250	152	162	423	140	120	207	93	112	174	65
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	75.6	76	76.4	35.3
HCM LOS	F	F	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	28%	16%	22%	39%	0%
Vol Thru, %	49%	52%	58%	61%	0%
Vol Right, %	22%	32%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	386	440	667	263	60
LT Vol	190	230	389	160	0
Through Vol	86	140	129	0	60
RT Vol	110	70	149	103	0
Lane Flow Rate	420	478	725	286	65
Geometry Grp	5	2	2	7	7
Degree of Util (X)	1	1	1	0.781	0.162
Departure Headway (Hd)	9.173	8.991	9.079	9.831	8.935
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	399	407	406	366	400
Service Time	7.173	6.991	7.079	7.627	6.731
HCM Lane V/C Ratio	1.053	1.174	1.786	0.781	0.163
HCM Control Delay	76.4	75.6	76	40.3	13.5
HCM Lane LOS	F	F	F	E	B
HCM 95th-tile Q	12.1	12.3	12.2	6.5	0.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	50	250	10	40	140	356	190	70	347	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6	177.6
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	19	18	90	324	79	310	192	448	240	94	569	50
Arrive On Green	0.01	0.07	0.07	0.19	0.25	0.25	0.11	0.41	0.41	0.06	0.35	0.35
Sat Flow, veh/h	1691	262	1287	1691	317	1240	1691	1090	583	1691	1610	141
Grp Volume(v), veh/h	11	0	65	272	0	54	152	0	594	76	0	410
Grp Sat Flow(s),veh/h/ln	1691	0	1549	1691	0	1557	1691	0	1673	1691	0	1751
Q Serve(g_s), s	0.4	0.0	2.4	9.1	0.0	1.6	5.1	0.0	19.1	2.6	0.0	11.6
Cycle Q Clear(g_c), s	0.4	0.0	2.4	9.1	0.0	1.6	5.1	0.0	19.1	2.6	0.0	11.6
Prop In Lane	1.00		0.83	1.00		0.80	1.00		0.35	1.00		0.08
Lane Grp Cap(c), veh/h	19	0	108	324	0	389	192	0	687	94	0	619
V/C Ratio(X)	0.58	0.00	0.60	0.84	0.00	0.14	0.79	0.00	0.86	0.81	0.00	0.66
Avail Cap(c_a), veh/h	115	0	421	403	0	688	288	0	853	115	0	714
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	28.9	0.0	26.6	22.9	0.0	17.1	25.4	0.0	15.8	27.5	0.0	16.1
Incr Delay (d2), s/veh	25.2	0.0	5.3	12.3	0.0	0.2	8.6	0.0	7.7	28.1	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 Back of Q (50%), veh/ln	0.3	0.0	1.0	4.6	0.0	0.6	2.5	0.0	8.1	1.8	0.0	4.8
Lane Grp Delay (d), s/veh	54.1	0.0	31.8	35.2	0.0	17.3	34.0	0.0	23.6	55.5	0.0	17.9
Lane Grp LOS	D		C	D		B	C		C	E		B
Approach Vol, veh/h		76			326			746			486	
Approach Delay, s/veh		35.0			32.2			25.7			23.8	
Approach LOS		D			C			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	4.7	8.1		15.3	18.7		10.7	28.2		7.3	24.8	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	16.0		14.0	26.0		10.0	30.0		4.0	24.0	
Max Q Clear Time (g_c+I1), s	2.4	4.4		11.1	3.6		7.1	21.1		4.6	13.6	
Green Ext Time (p_c), s	0.0	0.3		0.3	0.4		0.1	3.1		0.0	3.4	

Intersection Summary												
HCM 2010 Ctrl Delay			26.9									
HCM 2010 LOS			C									

Notes

Intersection	
Intersection Delay, s/veh	63

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	130	0	70	190	616	0	0	394	253
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	141	0	76	207	670	0	0	428	275
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1654	1791	680	703	0	0	675	0	0
Stage 1			1088	1088	-	-	-	-	-	-	-
Stage 2			566	703	-	-	-	-	-	-	-
Follow-up Headway			3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Capacity-1 Maneuver			# 107	80	448	885	-	-	907	-	-
Stage 1			320	289	-	-	-	-	-	-	-
Stage 2			564	437	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 81	0	444	881	-	-	903	-	-
Mov Capacity-2 Maneuver			# 81	0	-	-	-	-	-	-	-
Stage 1			244	0	-	-	-	-	-	-	-
Stage 2			562	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 510.8	2.4	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	881	-	-	113	903	-	-
HCM Control Delay, s	10.333	-	-	$ 510.8	0	-	-
HCM Lane V/C Ratio	0.23	-	-	1.92	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	0.9	-	-	17.7	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	251	0	340	0	0	0	0	555	220	80	444	0
Number	7	4	14				5	2	12	1	6	16
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	181.0	181.0	181.0				0.0	181.0	181.0	181.0	181.0	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	502	0	448				0	774	658	111	1021	0
Arrive On Green	0.29	0.00	0.29				0.00	0.43	0.43	0.06	0.56	0.00
Sat Flow, veh/h	1723	0	1538				0	1810	1538	1723	1810	0
Grp Volume(v), veh/h	273	0	370				0	603	239	87	483	0
Grp Sat Flow(s),veh/h/ln	1723	0	1538				0	1810	1538	1723	1810	0
Q Serve(g_s), s	7.4	0.0	12.4				0.0	15.8	5.8	2.8	8.8	0.0
Cycle Q Clear(g_c), s	7.4	0.0	12.4				0.0	15.8	5.8	2.8	8.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	502	0	448				0	774	658	111	1021	0
V/C Ratio(X)	0.54	0.00	0.83				0.00	0.78	0.36	0.78	0.47	0.00
Avail Cap(c_a), veh/h	654	0	583				0	1242	1056	280	1667	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.5	0.0	18.3				0.0	13.6	10.7	25.5	7.2	0.0
Incr Delay (d2), s/veh	0.9	0.0	7.4				0.0	1.7	0.3	11.4	0.3	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
%ile Back of Q (50%), veh/ln	3.1	0.0	5.3				0.0	6.1	1.9	1.4	2.9	0.0
Lane Grp Delay (d), s/veh	17.4	0.0	25.7				0.0	15.4	11.1	37.0	7.5	0.0
Lane Grp LOS	B		C					B	B	D	A	
Approach Vol, veh/h		643						842			570	
Approach Delay, s/veh		22.2						14.1			12.0	
Approach LOS		C						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		20.1						27.7		7.6	35.2	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		21.0						38.0		9.0	51.0	
Max Q Clear Time (g_c+I1), s		14.4						17.8		4.8	10.8	
Green Ext Time (p_c), s		1.7						5.8		0.1	6.6	

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	227	20	60	149	20	141
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	247	22	65	162	22	153
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	267	75	0	0	70	0
Stage 1	70	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	722	986	-	-	1531	-
Stage 1	953	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	706	978	-	-	1525	-
Mov Capacity-2 Maneuver	706	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.9
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	706	978	1525	-
HCM Control Delay, s	-	-	12.8	8.8	7.395	-
HCM Lane V/C Ratio	-	-	0.35	0.02	0.01	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	1.6	0.1	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	26.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	17	63	114	110	81	20	65	170	130	10	310	22
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	68	124	120	88	22	71	185	141	11	337	24
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	833	848	359	874	790	265	366	0	0	331	0	0
Stage 1	376	376	-	402	402	-	-	-	-	-	-	-
Stage 2	457	472	-	472	388	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	288	298	685	270	322	774	1193	-	-	1228	-	-
Stage 1	645	616	-	625	600	-	-	-	-	-	-	-
Stage 2	583	559	-	573	609	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	204	275	679	168	298	768	1188	-	-	1223	-	-
Mov Capacity-2 Maneuver	204	275	-	168	298	-	-	-	-	-	-	-
Stage 1	604	608	-	585	562	-	-	-	-	-	-	-
Stage 2	447	523	-	410	601	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.2	117.4	1.5	0.2
HCM LOS	C	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1188	-	-	404	221	1223	-	-
HCM Control Delay, s	8.222	-	-	23.2	117.4	7.97	-	-
HCM Lane V/C Ratio	0.06	-	-	0.52	1.04	0.01	-	-
HCM Lane LOS	A	-	-	C	F	A	-	-
HCM 95th-tile Q, veh	0.2	-	-	2.9	9.8	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	55.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	80	40	200	40	60	180	160	423	30	91	489	71
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	87	43	217	43	65	196	174	460	33	99	532	77
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	23.9	35.5	65.7	70.5
HCM LOS	C	E	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	27%	0%
Vol Thru, %	0%	93%	0%	100%	0%	0%	25%	73%	77%
Vol Right, %	0%	7%	0%	0%	100%	0%	75%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	453	80	40	200	40	240	336	316
LT Vol	0	423	0	40	0	0	60	245	245
Through Vol	0	30	0	0	200	0	180	0	71
RT Vol	160	0	80	0	0	40	0	91	0
Lane Flow Rate	174	492	87	43	217	43	261	365	343
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.516	1	0.274	0.131	0.614	0.138	0.752	1	0.922
Departure Headway (Hd)	10.689	10.144	11.358	10.859	10.161	11.399	10.382	9.967	9.675
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	364	317	331	357	315	350	365	377
Service Time	8.389	7.844	9.084	8.585	7.887	9.148	8.13	7.699	7.406
HCM Lane V/C Ratio	0.513	1.352	0.274	0.13	0.608	0.137	0.746	1	0.91
HCM Control Delay	24.2	80.4	18.3	15.2	27.8	16	38.8	79.8	60.7
HCM Lane LOS	C	F	C	C	D	C	E	F	F
HCM 95th-tile Q	2.8	11.5	1.1	0.4	3.9	0.5	5.9	11.6	9.7

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	48.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	10	70	120	20	30	90	553	150	31	677	21
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	33	11	76	130	22	33	98	601	163	34	736	23
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	14.6	22.5	54.4	52.4
HCM LOS	B	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	75%	0%	71%	100%	0%	0%
Vol Thru, %	0%	100%	0%	25%	0%	12%	0%	100%	91%
Vol Right, %	0%	0%	100%	0%	100%	18%	0%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	553	150	40	70	170	31	451	247
LT Vol	0	553	0	10	0	20	0	451	226
Through Vol	0	0	150	0	70	30	0	0	21
RT Vol	90	0	0	30	0	120	31	0	0
Lane Flow Rate	98	601	163	43	76	185	34	491	268
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.237	1	0.341	0.127	0.199	0.508	0.081	1	0.603
Departure Headway (Hd)	8.728	8.227	7.525	10.487	9.417	9.905	8.652	8.15	8.09
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	413	445	479	343	382	366	415	446	448
Service Time	6.456	5.955	5.253	8.216	7.146	7.633	6.378	5.877	5.817
HCM Lane V/C Ratio	0.237	1.351	0.34	0.125	0.199	0.505	0.082	1.101	0.598
HCM Control Delay	14.2	71.9	14.1	14.7	14.5	22.5	12.1	71.5	22.4
HCM Lane LOS	B	F	B	B	B	C	B	F	C
HCM 95th-tile Q	0.9	12.8	1.5	0.4	0.7	2.8	0.3	12.8	3.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	40	0	51	240	742	0	0	306	561
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	0	0	43	0	55	261	807	0	0	333	610
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			1666	1666	413	333	0	0	812	0	0
Stage 1			1333	1333	-	-	-	-	-	-	-
Stage 2			333	333	-	-	-	-	-	-	-
Follow-up Headway			3.538	4.038	3.338	2.236	-	-	2.24	-	-
Pot Capacity-1 Maneuver			95	95	584	1215	-	-	797	-	-
Stage 1			208	219	-	-	-	-	-	-	-
Stage 2			720	639	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			74	0	579	1210	-	-	794	-	-
Mov Capacity-2 Maneuver			74	0	-	-	-	-	-	-	-
Stage 1			162	0	-	-	-	-	-	-	-
Stage 2			717	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42.5	2.1	0
HCM LOS	E	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1210	-	-	74	240	794	-	-
HCM Control Delay, s	8.791	-	-	82	26.1	0	-	-
HCM Lane V/C Ratio	0.22	-	-	0.39	0.29	-	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th-tile Q, veh	0.8	-	-	1.5	1.2	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	23
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	440	0	140	0	0	0	0	542	50	52	294	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
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	478	0	152	0	0	0	0	589	54	57	320	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	18	23.5	30.5
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	271	271	50	220	220	140	52	294
LT Vol	271	271	0	0	0	0	0	294
Through Vol	0	0	50	0	0	140	0	0
RT Vol	0	0	0	220	220	0	52	0
Lane Flow Rate	295	295	54	239	239	152	57	320
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.656	0.656	0.083	0.536	0.536	0.289	0.142	0.757
Departure Headway (Hd)	8.019	8.019	5.489	8.067	8.067	6.844	9.036	8.523
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	451	651	447	447	525	397	425
Service Time	5.772	5.772	3.24	5.809	5.809	4.585	6.797	6.283
HCM Lane V/C Ratio	0.654	0.654	0.083	0.535	0.535	0.29	0.144	0.753
HCM Control Delay	24.9	24.9	8.7	19.8	19.8	12.4	13.3	33.5
HCM Lane LOS	C	C	A	C	C	B	B	D
HCM 95th-tile Q	4.6	4.6	0.3	3.1	3.1	1.2	0.5	6.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	19	150	160	8	23	57
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	163	174	9	25	62
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	188	0	-	0	387	188
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	204	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1386	-	-	-	616	854
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	830	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1380	-	-	-	600	847
Mov Capacity-2 Maneuver	-	-	-	-	600	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.4
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1380	-	-	-	757
HCM Control Delay, s	7.648	0	-	-	10.4
HCM Lane V/C Ratio	0.01	-	-	-	0.12
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.0	-	-	-	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	310	152	112	200	137	141
Number	2	12	1	6	7	14
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	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1
Cap, veh/h	858	729	148	1117	495	442
Arrive On Green	0.46	0.00	0.08	0.61	0.28	0.28
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	316	0	114	204	140	144
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	7.9	0.0	4.5	3.5	4.4	5.2
Cycle Q Clear(g_c), s	7.9	0.0	4.5	3.5	4.4	5.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	858	729	148	1117	495	442
V/C Ratio(X)	0.37	0.00	0.77	0.18	0.28	0.33
Avail Cap(c_a), veh/h	858	729	371	1351	495	442
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	0.0	31.8	6.2	19.9	20.2
Incr Delay (d2), s/veh	1.2	0.0	8.1	0.1	1.4	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	0.0	2.1	1.1	1.9	2.1
Lane Grp Delay (d), s/veh	13.5	0.0	40.0	6.3	21.3	22.1
Lane Grp LOS	B		D	A	C	C
Approach Vol, veh/h	316			318	284	
Approach Delay, s/veh	13.5			18.4	21.7	
Approach LOS	B			B	C	

Timer						
Assigned Phs	2		1	6		
Phs Duration (G+Y+Rc), s	37.0		10.0	47.0		
Change Period (Y+Rc), s	4.0		4.0	4.0		
Max Green Setting (Gmax), s	33.0		15.0	52.0		
Max Q Clear Time (g_c+I1), s	9.9		6.5	5.5		
Green Ext Time (p_c), s	1.8		0.2	1.8		

Intersection Summary						
HCM 2010 Ctrl Delay			17.7			
HCM 2010 LOS			B			

Notes

Intersection	
Intersection Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	45	21	31	50	21	70	32	164	40	80	126	58
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		275
Median Width		0			0			0			0	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	23	34	54	23	76	35	178	43	87	137	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	640	612	147	619	591	210	142	0	0	227	0	0
Stage 1	316	316	-	275	275	-	-	-	-	-	-	-
Stage 2	324	296	-	344	316	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	388	408	900	401	420	830	1441	-	-	1341	-	-
Stage 1	695	655	-	731	683	-	-	-	-	-	-	-
Stage 2	688	668	-	671	655	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	308	364	893	337	375	823	1435	-	-	1335	-	-
Mov Capacity-2 Maneuver	308	364	-	337	375	-	-	-	-	-	-	-
Stage 1	673	604	-	708	661	-	-	-	-	-	-	-
Stage 2	584	647	-	573	604	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	15.8	1	2.4
HCM LOS	C	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1435	-	-	407	487	1335	-	-
HCM Control Delay, s	7.571	0	-	16.9	15.8	7.884	0	-
HCM Lane V/C Ratio	0.02	-	-	0.26	0.32	0.07	-	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th-tile Q, veh	0.1	-	-	1.0	1.3	0.2	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	85	10	3	0	10	15	2	7	0	35	11	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	5	2	2	2	2	2	2	5	2
Mvmt Flow	91	11	3	0	11	16	2	8	0	38	12	102
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	8.1	7.1	7.5	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	87%	0%	25%
Vol Thru, %	78%	10%	40%	8%
Vol Right, %	0%	3%	60%	67%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	98	25	141
LT Vol	7	10	10	11
Through Vol	0	3	15	95
RT Vol	2	85	0	35
Lane Flow Rate	10	105	27	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.129	0.029	0.161
Departure Headway (Hd)	4.432	4.393	3.939	3.816
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	810	894	926
Service Time	2.432	2.454	2.028	1.896
HCM Lane V/C Ratio	0.012	0.13	0.03	0.164
HCM Control Delay	7.5	8.1	7.1	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	20	110	290	20	70	180	483	150	40	462	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	0	1	1	2	1	0	1	2	1	1	2	0
Cap, veh/h	100	100	174	535	57	198	258	1270	568	65	864	38
Arrive On Green	0.11	0.11	0.11	0.16	0.16	0.16	0.15	0.36	0.36	0.04	0.25	0.25
Sat Flow, veh/h	909	909	1583	3442	368	1271	1774	3539	1583	1774	3455	151
Grp Volume(v), veh/h	44	0	120	315	0	98	196	525	163	43	257	267
Grp Sat Flow(s),veh/h/ln	1817	0	1583	1721	0	1639	1774	1770	1583	1774	1770	1836
Q Serve(g_s), s	1.0	0.0	3.4	4.0	0.0	2.5	5.0	5.3	3.5	1.1	6.0	6.0
Cycle Q Clear(g_c), s	1.0	0.0	3.4	4.0	0.0	2.5	5.0	5.3	3.5	1.1	6.0	6.0
Prop In Lane	0.50		1.00	1.00		0.78	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	200	0	174	535	0	255	258	1270	568	65	442	459
V/C Ratio(X)	0.22	0.00	0.69	0.59	0.00	0.38	0.76	0.41	0.29	0.66	0.58	0.58
Avail Cap(c_a), veh/h	616	0	537	1167	0	556	564	1950	872	226	638	661
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	20.2	18.5	0.0	17.9	19.4	11.4	10.8	22.4	15.5	15.5
Incr Delay (d2), s/veh	0.6	0.0	4.8	1.0	0.0	0.9	4.6	0.2	0.3	11.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.5	0.0	1.4	1.7	0.0	1.0	2.4	2.1	1.2	0.7	2.5	2.6
Lane Grp Delay (d), s/veh	19.7	0.0	25.0	19.5	0.0	18.8	23.9	11.6	11.1	33.5	16.7	16.7
Lane Grp LOS	B		C	B		B	C	B	B	C	B	B
Approach Vol, veh/h		164			413			884			567	
Approach Delay, s/veh		23.6			19.4			14.2			18.0	
Approach LOS		C			B			B			B	

Timer												
Assigned Phs		4			8		5	2		1	6	
Phs Duration (G+Y+Rc), s		9.2			11.3		10.9	20.9		5.7	15.8	
Change Period (Y+Rc), s		4.0			4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s		16.0			16.0		15.0	26.0		6.0	17.0	
Max Q Clear Time (g_c+I1), s		5.4			6.0		7.0	7.3		3.1	8.0	
Green Ext Time (p_c), s		0.4			1.4		0.4	5.4		0.0	3.8	

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	70	0	110	0	743	380	0	411	451
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	Free	Free	Free	Free	Free	Free	Free	Free	Free
Storage Length	0		0	0		0	0		0	0		200
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	76	0	120	0	808	413	0	447	490
Number of Lanes	0	0	0	0	1	1	0	2	1	0	2	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	1036	1260	414	447	0	0	813	0	0
Stage 1	813	813	-	-	-	-	-	-	-
Stage 2	223	447	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	227	169	587	1110	-	-	810	-	-
Stage 1	396	390	-	-	-	-	-	-	-
Stage 2	793	572	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	225	0	582	1105	-	-	807	-	-
Mov Capacity-2 Maneuver	225	0	-	-	-	-	-	-	-
Stage 1	394	0	-	-	-	-	-	-	-
Stage 2	790	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1105	-	-	285	582	807	-	-
HCM Control Delay, s	0	-	-	26	12.2	0	-	-
HCM Lane V/C Ratio	-	-	-	0.41	0.14	-	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th-tile Q, veh	0.0	-	-	1.9	0.5	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	561	0	500	0	0	0	0	562	60	100	381	0
Number	7	4	14				5	2	12	1	6	16
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	186.3	186.3	186.3				0.0	186.3	186.3	186.3	186.3	0.0
Lanes	0	1	1				0	2	1	1	2	0
Cap, veh/h	785	0	701				0	900	403	142	1446	0
Arrive On Green	0.44	0.00	0.44				0.00	0.25	0.00	0.08	0.41	0.00
Sat Flow, veh/h	1774	0	1583				0	3632	1583	1774	3632	0
Grp Volume(v), veh/h	610	0	543				0	611	0	109	414	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1770	1583	1774	1770	0
Q Serve(g_s), s	15.7	0.0	15.6				0.0	8.4	0.0	3.2	4.2	0.0
Cycle Q Clear(g_c), s	15.7	0.0	15.6				0.0	8.4	0.0	3.2	4.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	785	0	701				0	900	403	142	1446	0
V/C Ratio(X)	0.78	0.00	0.77				0.00	0.68	0.00	0.77	0.29	0.00
Avail Cap(c_a), veh/h	1320	0	1178				0	1251	560	297	2107	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	12.7				0.0	18.1	0.0	24.2	10.6	0.0
Incr Delay (d2), s/veh	1.7	0.0	1.9				0.0	0.9	0.0	8.5	0.1	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
%ile Back of Q (50%), veh/ln	6.3	0.0	5.6				0.0	3.6	0.0	1.7	1.6	0.0
Lane Grp Delay (d), s/veh	14.4	0.0	14.6				0.0	19.0	0.0	32.7	10.8	0.0
Lane Grp LOS	B		B					B		C	B	
Approach Vol, veh/h		1153						611			523	
Approach Delay, s/veh		14.5						19.0			15.3	
Approach LOS		B						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		27.8						17.7		8.3	26.0	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		40.0						19.0		9.0	32.0	
Max Q Clear Time (g_c+I1), s		17.7						10.4		5.2	6.2	
Green Ext Time (p_c), s		6.1						3.3		0.1	5.2	

Intersection Summary												
HCM 2010 Ctrl Delay			15.9									
HCM 2010 LOS			B									

Notes

Intersection	
Intersection Delay, s/veh	74
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	110	332	90	102	209	106	80	210	161	150	180	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	117	353	96	109	222	113	85	223	171	160	191	85
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	77.9	77.7	77.8	61
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	21%	24%	45%	0%
Vol Thru, %	47%	62%	50%	55%	0%
Vol Right, %	36%	17%	25%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	451	532	417	330	80
LT Vol	210	332	209	180	0
Through Vol	161	90	106	0	80
RT Vol	80	110	102	150	0
Lane Flow Rate	480	566	444	351	85
Geometry Grp	5	2	2	7	7
Degree of Util (X)	1	1	1	0.971	0.213
Departure Headway (Hd)	9.488	9.507	9.463	9.958	9.031
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	389	385	386	365	400
Service Time	7.488	7.507	7.463	7.658	6.731
HCM Lane V/C Ratio	1.234	1.47	1.15	0.962	0.212
HCM Control Delay	77.8	77.9	77.7	72.4	14.2
HCM Lane LOS	F	F	F	F	B
HCM 95th-tile Q	11.9	11.9	11.9	10.8	0.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	30	100	240	15	60	50	389	210	50	441	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
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	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Cap, veh/h	49	46	152	312	87	352	68	475	256	68	736	34
Arrive On Green	0.03	0.12	0.12	0.18	0.27	0.27	0.04	0.42	0.42	0.04	0.42	0.42
Sat Flow, veh/h	1774	381	1259	1774	322	1309	1774	1140	614	1774	1767	81
Grp Volume(v), veh/h	33	0	142	261	0	81	54	0	651	54	0	501
Grp Sat Flow(s),veh/h/ln	1774	0	1641	1774	0	1632	1774	0	1754	1774	0	1848
Q Serve(g_s), s	1.2	0.0	5.4	9.2	0.0	2.5	1.9	0.0	22.2	1.9	0.0	14.0
Cycle Q Clear(g_c), s	1.2	0.0	5.4	9.2	0.0	2.5	1.9	0.0	22.2	1.9	0.0	14.0
Prop In Lane	1.00		0.77	1.00		0.80	1.00		0.35	1.00		0.04
Lane Grp Cap(c), veh/h	49	0	199	312	0	439	68	0	731	68	0	770
V/C Ratio(X)	0.67	0.00	0.72	0.84	0.00	0.18	0.79	0.00	0.89	0.79	0.00	0.65
Avail Cap(c_a), veh/h	165	0	407	385	0	608	138	0	816	110	0	832
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	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	31.0	0.0	27.3	25.7	0.0	18.1	30.7	0.0	17.4	30.7	0.0	15.0
Incr Delay (d2), s/veh	14.7	0.0	4.7	12.6	0.0	0.2	18.1	0.0	11.1	18.1	0.0	1.6
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 Back of Q (50%), veh/ln	0.7	0.0	2.3	4.9	0.0	0.9	1.2	0.0	10.6	1.2	0.0	5.8
Lane Grp Delay (d), s/veh	45.8	0.0	32.0	38.3	0.0	18.3	48.9	0.0	28.6	48.9	0.0	16.7
Lane Grp LOS	D		C	D		B	D		C	D		B
Approach Vol, veh/h		175			342			705			555	
Approach Delay, s/veh		34.6			33.5			30.1			19.8	
Approach LOS		C			C			C			B	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	5.8	11.8		15.3	21.3		6.5	30.9		6.5	30.9	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	6.0	16.0		14.0	24.0		5.0	30.0		4.0	29.0	
Max Q Clear Time (g_c+I1), s	3.2	7.4		11.2	4.5		3.9	24.2		3.9	16.0	
Green Ext Time (p_c), s	0.0	0.5		0.3	0.8		0.0	2.7		0.0	4.4	

Intersection Summary			
HCM 2010 Ctrl Delay		28.0	
HCM 2010 LOS		C	

Notes

Intersection	
Intersection Delay, s/veh	208.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	140	0	60	330	589	0	0	459	322
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	150		0	0		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	0	0	152	0	65	359	640	0	0	499	350
Number of Lanes	0	0	0	0	1	0	1	1	0	0	1	0

Major/Minor			Minor 1			Major 1			Major 2		
Conflicting Flow All			2037	2212	650	849	0	0	645	0	0
Stage 1			1363	1363	-	-	-	-	-	-	-
Stage 2			674	849	-	-	-	-	-	-	-
Follow-up Headway			3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Capacity-1 Maneuver			# 61	43	464	776	-	-	926	-	-
Stage 1			234	213	-	-	-	-	-	-	-
Stage 2			501	373	-	-	-	-	-	-	-
Time blocked-Platoon, %			0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver			# 32	0	460	773	-	-	922	-	-
Mov Capacity-2 Maneuver			# 32	0	-	-	-	-	-	-	-
Stage 1			# 125	0	-	-	-	-	-	-	-
Stage 2			499	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 1957.4	4.9	0
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Cap, veh/h	773	-	-	44	922	-	-
HCM Control Delay, s	13.624	-	-	$ 1957.4	0	-	-
HCM Lane V/C Ratio	0.46	-	-	4.94	-	-	-
HCM Lane LOS	B	-	-	F	A	-	-
HCM 95th-tile Q, veh	2.5	-	-	24.9	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	274	0	350	0	0	0	0	645	200	70	529	0
Number	7	4	14				5	2	12	1	6	16
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	182.7	182.7	182.7				0.0	182.7	182.7	182.7	182.7	0.0
Lanes	0	1	1				0	1	1	1	1	0
Cap, veh/h	492	0	440				0	855	727	97	1074	0
Arrive On Green	0.28	0.00	0.28				0.00	0.47	0.47	0.06	0.59	0.00
Sat Flow, veh/h	1740	0	1553				0	1827	1553	1740	1827	0
Grp Volume(v), veh/h	298	0	380				0	701	217	76	575	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553				0	1827	1553	1740	1827	0
Q Serve(g_s), s	9.2	0.0	14.4				0.0	20.6	5.4	2.7	11.7	0.0
Cycle Q Clear(g_c), s	9.2	0.0	14.4				0.0	20.6	5.4	2.7	11.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	492	0	440				0	855	727	97	1074	0
V/C Ratio(X)	0.61	0.00	0.86				0.00	0.82	0.30	0.79	0.54	0.00
Avail Cap(c_a), veh/h	561	0	500				0	1177	1001	224	1531	0
HCM Platoon Ratio	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.3	0.0	21.1				0.0	14.3	10.2	28.9	7.7	0.0
Incr Delay (d2), s/veh	1.5	0.0	13.4				0.0	3.4	0.2	13.0	0.4	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
%ile Back of Q (50%), veh/ln	3.9	0.0	6.9				0.0	8.6	1.8	1.4	4.0	0.0
Lane Grp Delay (d), s/veh	20.7	0.0	34.5				0.0	17.6	10.4	41.9	8.1	0.0
Lane Grp LOS	C		C					B	B	D	A	
Approach Vol, veh/h		678						918			651	
Approach Delay, s/veh		28.4						15.9			12.1	
Approach LOS		C						B			B	

Timer												
Assigned Phs		4						2		1	6	
Phs Duration (G+Y+Rc), s		21.6						33.1		7.5	40.5	
Change Period (Y+Rc), s		4.0						4.0		4.0	4.0	
Max Green Setting (Gmax), s		20.0						40.0		8.0	52.0	
Max Q Clear Time (g_c+I1), s		16.4						22.6		4.7	13.7	
Green Ext Time (p_c), s		1.2						6.5		0.0	8.0	

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	157	10	81	163	10	96
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	120		325	185	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	11	88	177	11	104
Number of Lanes	1	1	1	1	1	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	219	98	0	0	93	0
Stage 1	93	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	769	958	-	-	1501	-
Stage 1	931	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	757	950	-	-	1495	-
Mov Capacity-2 Maneuver	757	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.7
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Cap, veh/h	-	-	757	950	1495	-
HCM Control Delay, s	-	-	11.1	8.8	7.426	-
HCM Lane V/C Ratio	-	-	0.23	0.01	0.01	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th-tile Q, veh	-	-	0.9	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	34	22	69	40	23	20	95	200	60	20	160	37
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	110		0	75		0
Median Width		0			0			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	23	73	42	24	21	100	211	63	21	168	39
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow All	705	714	198	730	701	252	212	0	0	279	0	0
Stage 1	235	235	-	447	447	-	-	-	-	-	-	-
Stage 2	470	479	-	283	254	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	351	357	843	338	363	787	1358	-	-	1284	-	-
Stage 1	768	710	-	591	573	-	-	-	-	-	-	-
Stage 2	574	555	-	724	697	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	298	322	836	270	328	780	1352	-	-	1279	-	-
Mov Capacity-2 Maneuver	298	322	-	270	328	-	-	-	-	-	-	-
Stage 1	708	695	-	545	528	-	-	-	-	-	-	-
Stage 2	491	512	-	626	683	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	19.2	2.1	0.7
HCM LOS	C	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Cap, veh/h	1352	-	-	472	340	1279	-	-
HCM Control Delay, s	7.875	-	-	15.5	19.2	7.862	-	-
HCM Lane V/C Ratio	0.07	-	-	0.28	0.26	0.02	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th-tile Q, veh	0.2	-	-	1.1	1.0	0.1	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	36.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	41	40	80	70	35	81	80	459	70	71	335	31
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	45	43	87	76	38	88	87	499	76	77	364	34
Number of Lanes	1	1	1	1	1	0	1	1	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	13	14.3	61.2	19
HCM LOS	B	B	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	30%	0%
Vol Thru, %	0%	87%	0%	100%	0%	0%	30%	70%	84%
Vol Right, %	0%	13%	0%	0%	100%	0%	70%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	529	41	40	80	70	116	239	199
LT Vol	0	459	0	40	0	0	35	168	168
Through Vol	0	70	0	0	80	0	81	0	31
RT Vol	80	0	41	0	0	70	0	71	0
Lane Flow Rate	87	575	45	43	87	76	126	259	216
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.196	1	0.117	0.108	0.199	0.194	0.286	0.571	0.46
Departure Headway (Hd)	8.13	7.526	9.419	8.921	8.223	9.272	8.29	7.927	7.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	489	383	404	439	390	436	454	468
Service Time	5.842	5.238	7.121	6.623	5.925	6.972	5.99	5.714	5.457
HCM Lane V/C Ratio	0.196	1.176	0.117	0.106	0.198	0.195	0.289	0.57	0.462
HCM Control Delay	12.8	68.5	13.4	12.7	13	14.2	14.3	20.8	16.9
HCM Lane LOS	B	F	B	B	B	B	B	C	C
HCM 95th-tile Q	0.7	13.4	0.4	0.4	0.7	0.7	1.2	3.5	2.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	36.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	71	50	120	110	20	21	180	487	100	31	405	41
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	77	54	130	120	22	23	196	529	109	34	440	45
Number of Lanes	0	1	1	0	1	0	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	2
HCM Control Delay	16.9	21	52.6	24.9
HCM LOS	C	C	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	59%	0%	73%	100%	0%	0%
Vol Thru, %	0%	100%	0%	41%	0%	13%	0%	100%	77%
Vol Right, %	0%	0%	100%	0%	100%	14%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	487	100	121	120	151	31	270	176
LT Vol	0	487	0	50	0	20	0	270	135
Through Vol	0	0	100	0	120	21	0	0	41
RT Vol	180	0	0	71	0	110	31	0	0
Lane Flow Rate	196	529	109	132	130	164	34	293	191
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.483	1	0.231	0.359	0.32	0.457	0.086	0.712	0.455
Departure Headway (Hd)	8.895	8.377	7.652	9.829	8.842	10.013	9.232	8.73	8.566
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	403	434	467	366	406	359	388	414	421
Service Time	6.676	6.158	5.432	7.604	6.616	7.788	6.997	6.495	6.331
HCM Lane V/C Ratio	0.486	1.219	0.233	0.361	0.32	0.457	0.088	0.708	0.454
HCM Control Delay	19.8	72.9	12.7	18	15.8	21	12.9	30.5	18.3
HCM Lane LOS	C	F	B	C	C	C	B	D	C
HCM 95th-tile Q	2.6	12.6	0.9	1.6	1.4	2.3	0.3	5.4	2.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	40	0	62	130	705	0	0	334	301
Conflicting Peds, #/hr	0	0	0	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None	None	None	None	Free	Free	Free
Storage Length	0		0	175		0	200		0	0		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	43	0	67	141	766	0	0	363	327
Number of Lanes	0	0	0	1	1	0	1	2	0	0	1	1

Major/Minor	Minor 1			Major 1			Major 2		
Conflicting Flow All	1417	1417	393	363	0	0	771	0	0
Stage 1	1054	1054	-	-	-	-	-	-	-
Stage 2	363	363	-	-	-	-	-	-	-
Follow-up Headway	3.519	4.019	3.319	2.218	-	-	2.22	-	-
Pot Capacity-1 Maneuver	139	136	607	1196	-	-	840	-	-
Stage 1	297	302	-	-	-	-	-	-	-
Stage 2	703	624	-	-	-	-	-	-	-
Time blocked-Platoon, %	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	122	0	602	1191	-	-	837	-	-
Mov Capacity-2 Maneuver	122	0	-	-	-	-	-	-	-
Stage 1	261	0	-	-	-	-	-	-	-
Stage 2	700	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.8	1.3	0
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Cap, veh/h	1191	-	-	122	355	837	-	-
HCM Control Delay, s	8.429	-	-	43.5	18.2	0	-	-
HCM Lane V/C Ratio	0.12	-	-	0.24	0.23	-	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th-tile Q, veh	0.4	-	-	0.9	0.9	0.0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	431	0	220	0	0	0	0	404	60	91	283	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	468	0	239	0	0	0	0	439	65	99	308	0
Number of Lanes	1	1	1	0	0	0	0	2	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	3
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	3	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	3	0	3
HCM Control Delay	17	17.4	25
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	100%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	0%	0%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	202	60	216	216	220	91	283
LT Vol	202	202	0	0	0	0	0	283
Through Vol	0	0	60	0	0	220	0	0
RT Vol	0	0	0	216	216	0	91	0
Lane Flow Rate	220	220	65	234	234	239	99	308
Geometry Grp	8	8	8	7	7	7	8	8
Degree of Util (X)	0.495	0.495	0.102	0.507	0.507	0.437	0.241	0.704
Departure Headway (Hd)	8.113	8.113	5.617	7.795	7.795	6.575	8.754	8.241
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	444	444	636	464	464	548	410	440
Service Time	5.865	5.865	3.368	5.536	5.536	4.316	6.51	5.997
HCM Lane V/C Ratio	0.495	0.495	0.102	0.504	0.504	0.436	0.241	0.7
HCM Control Delay	18.6	18.6	9	18.3	18.3	14.4	14.3	28.4
HCM Lane LOS	C	C	A	C	C	B	B	D
HCM 95th-tile Q	2.7	2.7	0.3	2.8	2.8	2.2	0.9	5.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	63	110	130	26	15	37
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	68	120	141	28	16	40
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	175	0	-	0	417	165
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	257	-
Follow-up Headway	2.245	-	-	-	3.545	3.345
Pot Capacity-1 Maneuver	1383	-	-	-	587	872
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	779	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1377	-	-	-	551	865
Mov Capacity-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	10.2
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1377	-	-	-	743
HCM Control Delay, s	7.751	0	-	-	10.2
HCM Lane V/C Ratio	0.05	-	-	-	0.08
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.2	-	-	-	0.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection: 1: project Driveway & Seven Lakes Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	82
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Old Alturas Rd & Seven Lakes Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	27	48	45
Average Queue (ft)	2	20	6
95th Queue (ft)	14	45	29
Link Distance (ft)	2444	61	1948
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

INTERSECTION SUMMARY

Existing AM
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1359	veh/h	1675	pers/h
Percent Heavy Vehicles	5.0	%		
Degree of Saturation	0.451			
Practical Spare Capacity	88.3	%		
Effective Intersection Capacity	3011	veh/h		
Control Delay (Total)	2.42	veh-h/h	2.90	pers-h/h
Control Delay (Average)	6.4	sec	6.2	sec
Control Delay (Worst Lane)	7.5	sec		
Control Delay (Worst Movement)	11.4	sec	11.4	sec
Geometric Delay (Average)	4.0	sec		
Stop-Line Delay (Average)	2.4	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.2	veh		
95% Back of Queue - Distance (Worst Lane)	83.9	ft		
Total Effective Stops	836	veh/h	1004	pers/h
Effective Stop Rate	0.62	per veh	0.60	per pers
Proportion Queued	0.62		0.60	
Performance Index	26.9		26.9	
Travel Distance (Total)	482.3	veh-mi/h	578.8	pers-mi/h
Travel Distance (Average)	1874	ft	1825	ft
Travel Time (Total)	18.9	veh-h/h	22.7	pers-h/h
Travel Time (Average)	50.0	sec	48.7	sec
Travel Speed	25.5	mph	25.5	mph
Cost (Total)	351.38	$/h	351.38	$/h
Fuel Consumption (Total)	22.4	gal/h		
Carbon Dioxide (Total)	212.7	kg/h		
Hydrocarbons (Total)	0.327	kg/h		
Carbon Monoxide (Total)	14.15	kg/h		
NOx (Total)	0.434	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	652,364	veh/y	803,956	pers/y
Delay	1,161	veh-h/y	1,394	pers-h/y
Effective Stops	401,427	veh/y	481,712	pers/y
Travel Distance	231,528	veh-mi/y	277,833	pers-mi/y
Travel Time	9,069	veh-h/y	10,882	pers-h/y
Cost	168,660	$/y	168,660	$/y
Fuel Consumption	10,767	gal/y		
Carbon Dioxide	102,101	kg/y		
Hydrocarbons	157	kg/y		
Carbon Monoxide	6,792	kg/y		
NOx	208	kg/y		

INTERSECTION SUMMARY

Existing PM
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1394	veh/h	1716	pers/h
Percent Heavy Vehicles	2.0	%		
Degree of Saturation	0.466			
Practical Spare Capacity	82.2	%		
Effective Intersection Capacity	2988	veh/h		
Control Delay (Total)	2.33	veh-h/h	2.80	pers-h/h
Control Delay (Average)	6.0	sec	5.9	sec
Control Delay (Worst Lane)	7.4	sec		
Control Delay (Worst Movement)	11.6	sec	11.6	sec
Geometric Delay (Average)	3.8	sec		
Stop-Line Delay (Average)	2.3	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.4	veh		
95% Back of Queue - Distance (Worst Lane)	85.9	ft		
Total Effective Stops	824	veh/h	989	pers/h
Effective Stop Rate	0.59	per veh	0.58	per pers
Proportion Queued	0.60		0.58	
Performance Index	27.1		27.1	
Travel Distance (Total)	493.4	veh-mi/h	592.1	pers-mi/h
Travel Distance (Average)	1869	ft	1821	ft
Travel Time (Total)	19.2	veh-h/h	23.1	pers-h/h
Travel Time (Average)	49.7	sec	48.4	sec
Travel Speed	25.6	mph	25.6	mph
Cost (Total)	347.10	$/h	347.10	$/h
Fuel Consumption (Total)	21.3	gal/h		
Carbon Dioxide (Total)	201.6	kg/h		
Hydrocarbons (Total)	0.322	kg/h		
Carbon Monoxide (Total)	13.25	kg/h		
NOx (Total)	0.406	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	668,936	veh/y	823,843	pers/y
Delay	1,118	veh-h/y	1,342	pers-h/y
Effective Stops	395,444	veh/y	474,533	pers/y
Travel Distance	236,841	veh-mi/y	284,210	pers-mi/y
Travel Time	9,235	veh-h/y	11,082	pers-h/y
Cost	166,609	$/y	166,609	$/y
Fuel Consumption	10,215	gal/y		
Carbon Dioxide	96,750	kg/y		
Hydrocarbons	155	kg/y		
Carbon Monoxide	6,359	kg/y		
NOx	195	kg/y		

INTERSECTION SUMMARY

Existing AM PP
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1407	veh/h	1732	pers/h
Percent Heavy Vehicles	5.0	%		
Degree of Saturation	0.460			
Practical Spare Capacity	84.9	%		
Effective Intersection Capacity	3060	veh/h		
Control Delay (Total)	2.55	veh-h/h	3.06	pers-h/h
Control Delay (Average)	6.5	sec	6.4	sec
Control Delay (Worst Lane)	7.5	sec		
Control Delay (Worst Movement)	11.5	sec	11.5	sec
Geometric Delay (Average)	3.9	sec		
Stop-Line Delay (Average)	2.6	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.3	veh		
95% Back of Queue - Distance (Worst Lane)	85.8	ft		
Total Effective Stops	885	veh/h	1062	pers/h
Effective Stop Rate	0.63	per veh	0.61	per pers
Proportion Queued	0.64		0.62	
Performance Index	28.2		28.2	
Travel Distance (Total)	499.1	veh-mi/h	598.9	pers-mi/h
Travel Distance (Average)	1873	ft	1826	ft
Travel Time (Total)	19.6	veh-h/h	23.5	pers-h/h
Travel Time (Average)	50.1	sec	48.9	sec
Travel Speed	25.5	mph	25.5	mph
Cost (Total)	364.73	$/h	364.73	$/h
Fuel Consumption (Total)	23.3	gal/h		
Carbon Dioxide (Total)	221.0	kg/h		
Hydrocarbons (Total)	0.341	kg/h		
Carbon Monoxide (Total)	14.77	kg/h		
NOx (Total)	0.452	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	675,273	veh/y	831,447	pers/y
Delay	1,223	veh-h/y	1,467	pers-h/y
Effective Stops	424,957	veh/y	509,949	pers/y
Travel Distance	239,574	veh-mi/y	287,488	pers-mi/y
Travel Time	9,407	veh-h/y	11,288	pers-h/y
Cost	175,069	$/y	175,069	$/y
Fuel Consumption	11,187	gal/y		
Carbon Dioxide	106,076	kg/y		
Hydrocarbons	164	kg/y		
Carbon Monoxide	7,091	kg/y		
NOx	217	kg/y		

INTERSECTION SUMMARY

Existing PM PP
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1453	veh/h	1788	pers/h
Percent Heavy Vehicles	2.0	%		
Degree of Saturation	0.493			
Practical Spare Capacity	72.5	%		
Effective Intersection Capacity	2948	veh/h		
Control Delay (Total)	2.51	veh-h/h	3.01	pers-h/h
Control Delay (Average)	6.2	sec	6.1	sec
Control Delay (Worst Lane)	8.0	sec		
Control Delay (Worst Movement)	12.3	sec	12.3	sec
Geometric Delay (Average)	3.7	sec		
Stop-Line Delay (Average)	2.5	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.7	veh		
95% Back of Queue - Distance (Worst Lane)	95.2	ft		
Total Effective Stops	888	veh/h	1065	pers/h
Effective Stop Rate	0.61	per veh	0.60	per pers
Proportion Queued	0.62		0.61	
Performance Index	28.7		28.7	
Travel Distance (Total)	514.2	veh-mi/h	617.1	pers-mi/h
Travel Distance (Average)	1868	ft	1822	ft
Travel Time (Total)	20.1	veh-h/h	24.1	pers-h/h
Travel Time (Average)	49.8	sec	48.6	sec
Travel Speed	25.6	mph	25.6	mph
Cost (Total)	363.04	$/h	363.04	$/h
Fuel Consumption (Total)	22.3	gal/h		
Carbon Dioxide (Total)	211.0	kg/h		
Hydrocarbons (Total)	0.338	kg/h		
Carbon Monoxide (Total)	13.94	kg/h		
NOx (Total)	0.426	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	697,532	veh/y	858,158	pers/y
Delay	1,204	veh-h/y	1,445	pers-h/y
Effective Stops	426,166	veh/y	511,399	pers/y
Travel Distance	246,830	veh-mi/y	296,196	pers-mi/y
Travel Time	9,653	veh-h/y	11,584	pers-h/y
Cost	174,259	$/y	174,259	$/y
Fuel Consumption	10,693	gal/y		
Carbon Dioxide	101,273	kg/y		
Hydrocarbons	162	kg/y		
Carbon Monoxide	6,691	kg/y		
NOx	204	kg/y		

INTERSECTION SUMMARY

Site: Cummulative AM

Cumulative AM
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1880	veh/h	2301	pers/h
Percent Heavy Vehicles	5.0	%		
Degree of Saturation	0.627			
Practical Spare Capacity	35.6	%		
Effective Intersection Capacity	3000	veh/h		
Control Delay (Total)	4.76	veh-h/h	5.71	pers-h/h
Control Delay (Average)	9.1	sec	8.9	sec
Control Delay (Worst Lane)	11.6	sec		
Control Delay (Worst Movement)	16.4	sec	16.4	sec
Geometric Delay (Average)	3.8	sec		
Stop-Line Delay (Average)	5.3	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	6.6	veh		
95% Back of Queue - Distance (Worst Lane)	171.7	ft		
Total Effective Stops	1579	veh/h	1894	pers/h
Effective Stop Rate	0.84	per veh	0.82	per pers
Proportion Queued	0.82		0.81	
Performance Index	43.9		43.9	
Travel Distance (Total)	666.0	veh-mi/h	799.2	pers-mi/h
Travel Distance (Average)	1870	ft	1834	ft
Travel Time (Total)	27.2	veh-h/h	32.6	pers-h/h
Travel Time (Average)	52.0	sec	51.0	sec
Travel Speed	24.5	mph	24.5	mph
Cost (Total)	507.51	$/h	507.51	$/h
Fuel Consumption (Total)	32.5	gal/h		
Carbon Dioxide (Total)	308.2	kg/h		
Hydrocarbons (Total)	0.483	kg/h		
Carbon Monoxide (Total)	21.51	kg/h		
NOx (Total)	0.646	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	902,609	veh/y	1,104,250	pers/y
Delay	2,283	veh-h/y	2,740	pers-h/y
Effective Stops	757,691	veh/y	909,230	pers/y
Travel Distance	319,693	veh-mi/y	383,631	pers-mi/y
Travel Time	13,045	veh-h/y	15,655	pers-h/y
Cost	243,604	$/y	243,604	$/y
Fuel Consumption	15,600	gal/y		
Carbon Dioxide	147,929	kg/y		
Hydrocarbons	232	kg/y		
Carbon Monoxide	10,325	kg/y		
NOx	310	kg/y		

INTERSECTION SUMMARY

Cumulative PM
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2064	veh/h	2521	pers/h
Percent Heavy Vehicles	2.0	%		
Degree of Saturation	0.848			
Practical Spare Capacity	0.2	%		
Effective Intersection Capacity	2434	veh/h		
Control Delay (Total)	6.98	veh-h/h	8.37	pers-h/h
Control Delay (Average)	12.2	sec	12.0	sec
Control Delay (Worst Lane)	24.2	sec		
Control Delay (Worst Movement)	28.5	sec	28.5	sec
Geometric Delay (Average)	3.7	sec		
Stop-Line Delay (Average)	8.5	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	13.4	veh		
95% Back of Queue - Distance (Worst Lane)	339.5	ft		
Total Effective Stops	1925	veh/h	2310	pers/h
Effective Stop Rate	0.93	per veh	0.92	per pers
Proportion Queued	0.85		0.83	
Performance Index	53.5		53.5	
Travel Distance (Total)	730.1	veh-mi/h	876.2	pers-mi/h
Travel Distance (Average)	1868	ft	1835	ft
Travel Time (Total)	31.7	veh-h/h	38.0	pers-h/h
Travel Time (Average)	55.2	sec	54.3	sec
Travel Speed	23.1	mph	23.1	mph
Cost (Total)	567.59	$/h	567.59	$/h
Fuel Consumption (Total)	34.3	gal/h		
Carbon Dioxide (Total)	324.4	kg/h		
Hydrocarbons (Total)	0.535	kg/h		
Carbon Monoxide (Total)	22.53	kg/h		
NOx (Total)	0.667	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	990,638	veh/y	1,209,886	pers/y
Delay	3,349	veh-h/y	4,018	pers-h/y
Effective Stops	924,041	veh/y	1,108,850	pers/y
Travel Distance	350,460	veh-mi/y	420,552	pers-mi/y
Travel Time	15,195	veh-h/y	18,234	pers-h/y
Cost	272,442	$/y	272,442	$/y
Fuel Consumption	16,440	gal/y		
Carbon Dioxide	155,707	kg/y		
Hydrocarbons	257	kg/y		
Carbon Monoxide	10,815	kg/y		
NOx	320	kg/y		

INTERSECTION SUMMARY

Site: Cumulative AM PP

Cumulative AM PP
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1926	veh/h	2355	pers/h
Percent Heavy Vehicles	5.0	%		
Degree of Saturation	0.665			
Practical Spare Capacity	27.7	%		
Effective Intersection Capacity	2894	veh/h		
Control Delay (Total)	5.11	veh-h/h	6.13	pers-h/h
Control Delay (Average)	9.5	sec	9.4	sec
Control Delay (Worst Lane)	12.0	sec		
Control Delay (Worst Movement)	16.8	sec	16.8	sec
Geometric Delay (Average)	3.8	sec		
Stop-Line Delay (Average)	5.8	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	7.6	veh		
95% Back of Queue - Distance (Worst Lane)	197.7	ft		
Total Effective Stops	1674	veh/h	2008	pers/h
Effective Stop Rate	0.87	per veh	0.85	per pers
Proportion Queued	0.85		0.83	
Performance Index	46.0		46.0	
Travel Distance (Total)	682.1	veh-mi/h	818.5	pers-mi/h
Travel Distance (Average)	1870	ft	1835	ft
Travel Time (Total)	28.0	veh-h/h	33.7	pers-h/h
Travel Time (Average)	52.4	sec	51.4	sec
Travel Speed	24.3	mph	24.3	mph
Cost (Total)	523.94	$/h	523.94	$/h
Fuel Consumption (Total)	33.5	gal/h		
Carbon Dioxide (Total)	318.1	kg/h		
Hydrocarbons (Total)	0.500	kg/h		
Carbon Monoxide (Total)	22.35	kg/h		
NOx (Total)	0.669	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	924,522	veh/y	1,130,546	pers/y
Delay	2,452	veh-h/y	2,943	pers-h/y
Effective Stops	803,319	veh/y	963,983	pers/y
Travel Distance	327,389	veh-mi/y	392,867	pers-mi/y
Travel Time	13,463	veh-h/y	16,155	pers-h/y
Cost	251,493	$/y	251,493	$/y
Fuel Consumption	16,101	gal/y		
Carbon Dioxide	152,678	kg/y		
Hydrocarbons	240	kg/y		
Carbon Monoxide	10,727	kg/y		
NOx	321	kg/y		

INTERSECTION SUMMARY

Cumulative PM PP
Roundabout

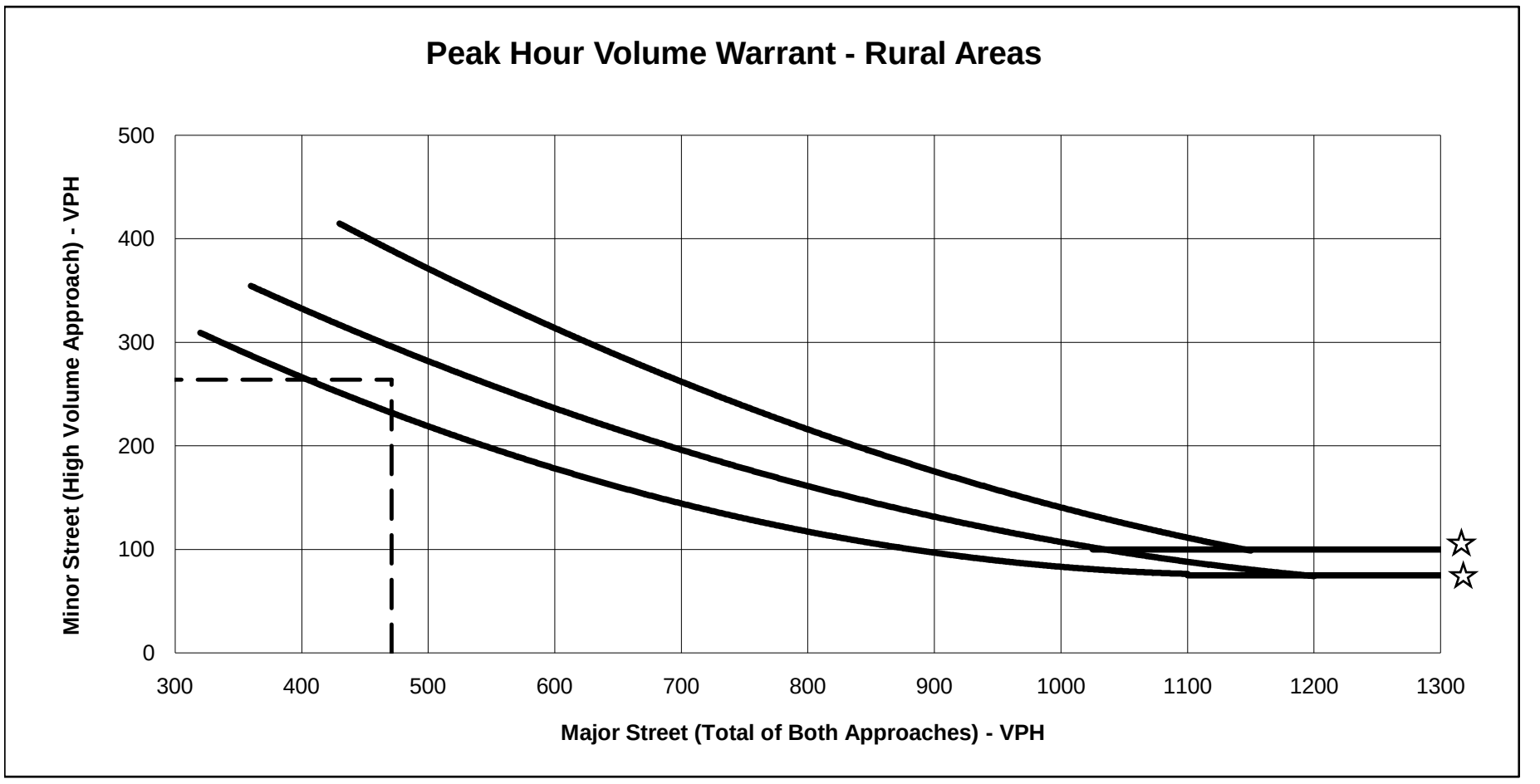
Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2123	veh/h	2592	pers/h
Percent Heavy Vehicles	2.0	%		
Degree of Saturation	0.900			
Practical Spare Capacity	-5.5	%		
Effective Intersection Capacity	2361	veh/h		
Control Delay (Total)	8.33	veh-h/h	9.99	pers-h/h
Control Delay (Average)	14.1	sec	13.9	sec
Control Delay (Worst Lane)	30.9	sec		
Control Delay (Worst Movement)	35.2	sec	35.2	sec
Geometric Delay (Average)	3.7	sec		
Stop-Line Delay (Average)	10.5	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	16.2	veh		
95% Back of Queue - Distance (Worst Lane)	412.2	ft		
Total Effective Stops	2106	veh/h	2528	pers/h
Effective Stop Rate	0.99	per veh	0.98	per pers
Proportion Queued	0.86		0.85	
Performance Index	58.4		58.4	
Travel Distance (Total)	750.9	veh-mi/h	901.1	pers-mi/h
Travel Distance (Average)	1867	ft	1836	ft
Travel Time (Total)	33.7	veh-h/h	40.4	pers-h/h
Travel Time (Average)	57.1	sec	56.1	sec
Travel Speed	22.3	mph	22.3	mph
Cost (Total)	600.91	$/h	600.91	$/h
Fuel Consumption (Total)	35.9	gal/h		
Carbon Dioxide (Total)	340.0	kg/h		
Hydrocarbons (Total)	0.565	kg/h		
Carbon Monoxide (Total)	23.68	kg/h		
NOx (Total)	0.698	kg/h		

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model used.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,019,234	veh/y	1,244,201	pers/y
Delay	3,998	veh-h/y	4,797	pers-h/y
Effective Stops	1,011,089	veh/y	1,213,307	pers/y
Travel Distance	360,449	veh-mi/y	432,538	pers-mi/y
Travel Time	16,169	veh-h/y	19,403	pers-h/y
Cost	288,435	$/y	288,435	$/y
Fuel Consumption	17,231	gal/y		
Carbon Dioxide	163,197	kg/y		
Hydrocarbons	271	kg/y		
Carbon Monoxide	11,365	kg/y		
NOx	335	kg/y		

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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

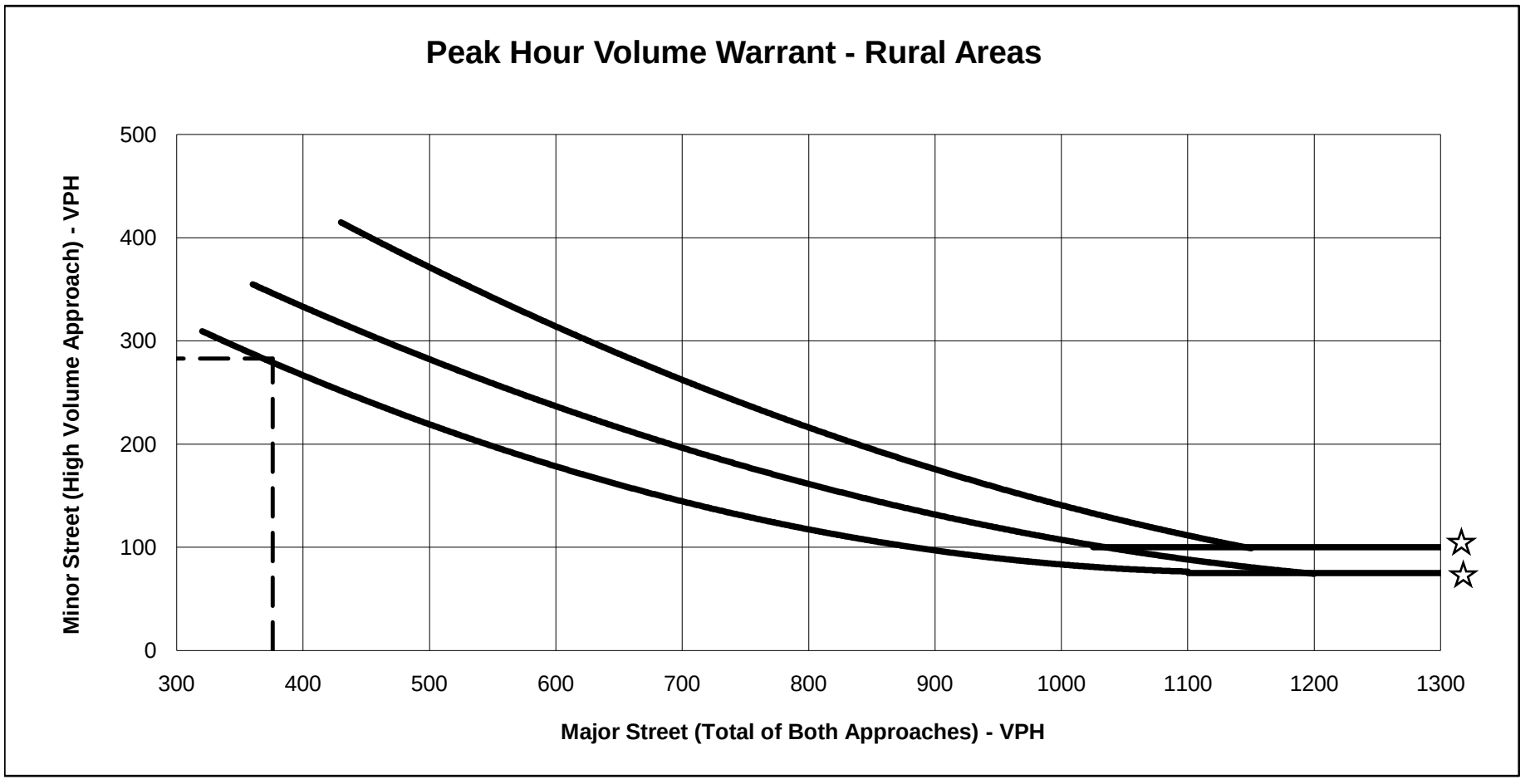


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Old Alturas Road/Old Oregon Trail
Scenario:	Existing AM peak hour conditions
Minor St. Volume:	264
Major St. Volume:	471
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

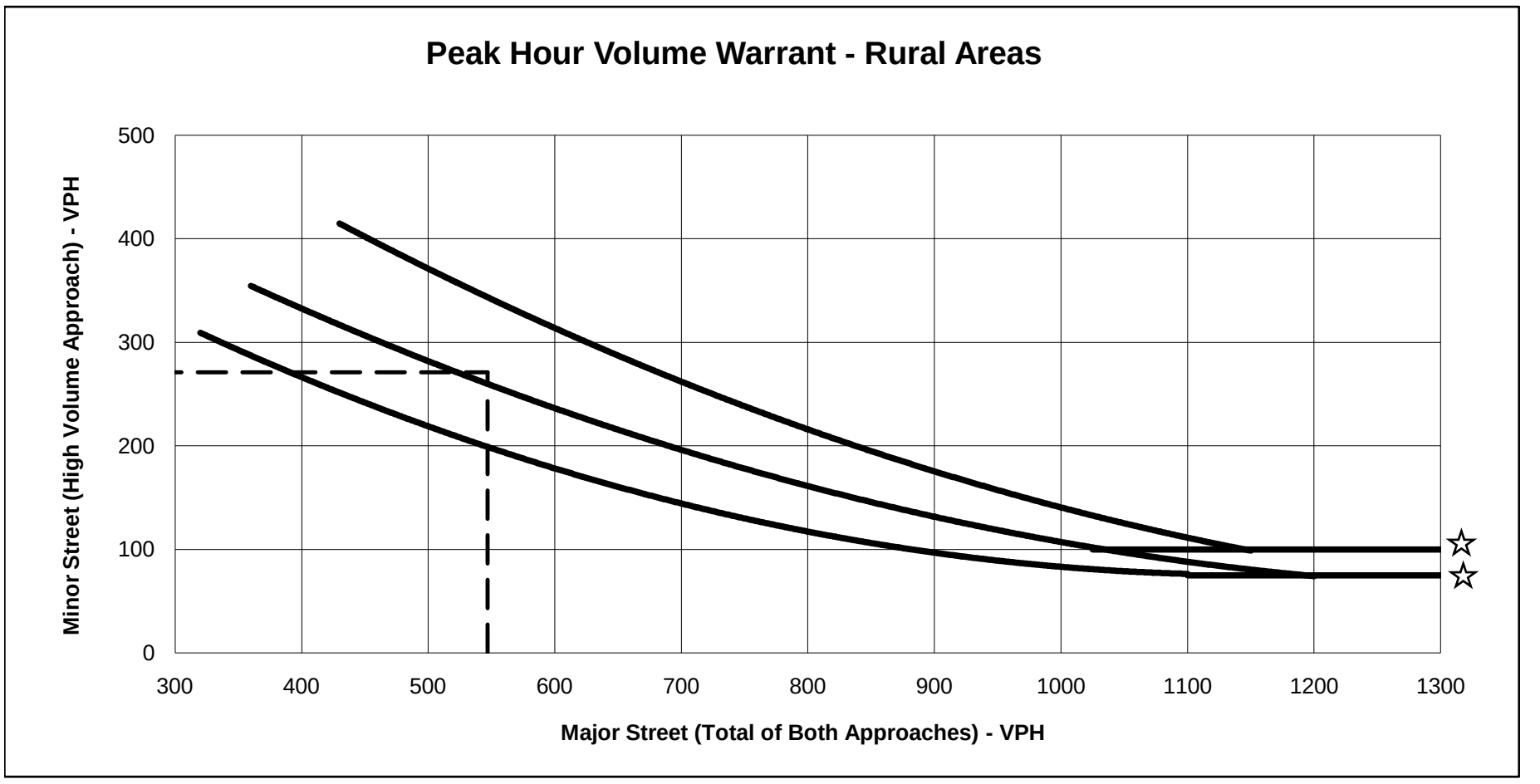


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Old Alturas Road/Old Oregon Trail
Scenario:	Existing PM peak hour conditions
Minor St. Volume:	283
Major St. Volume:	376
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

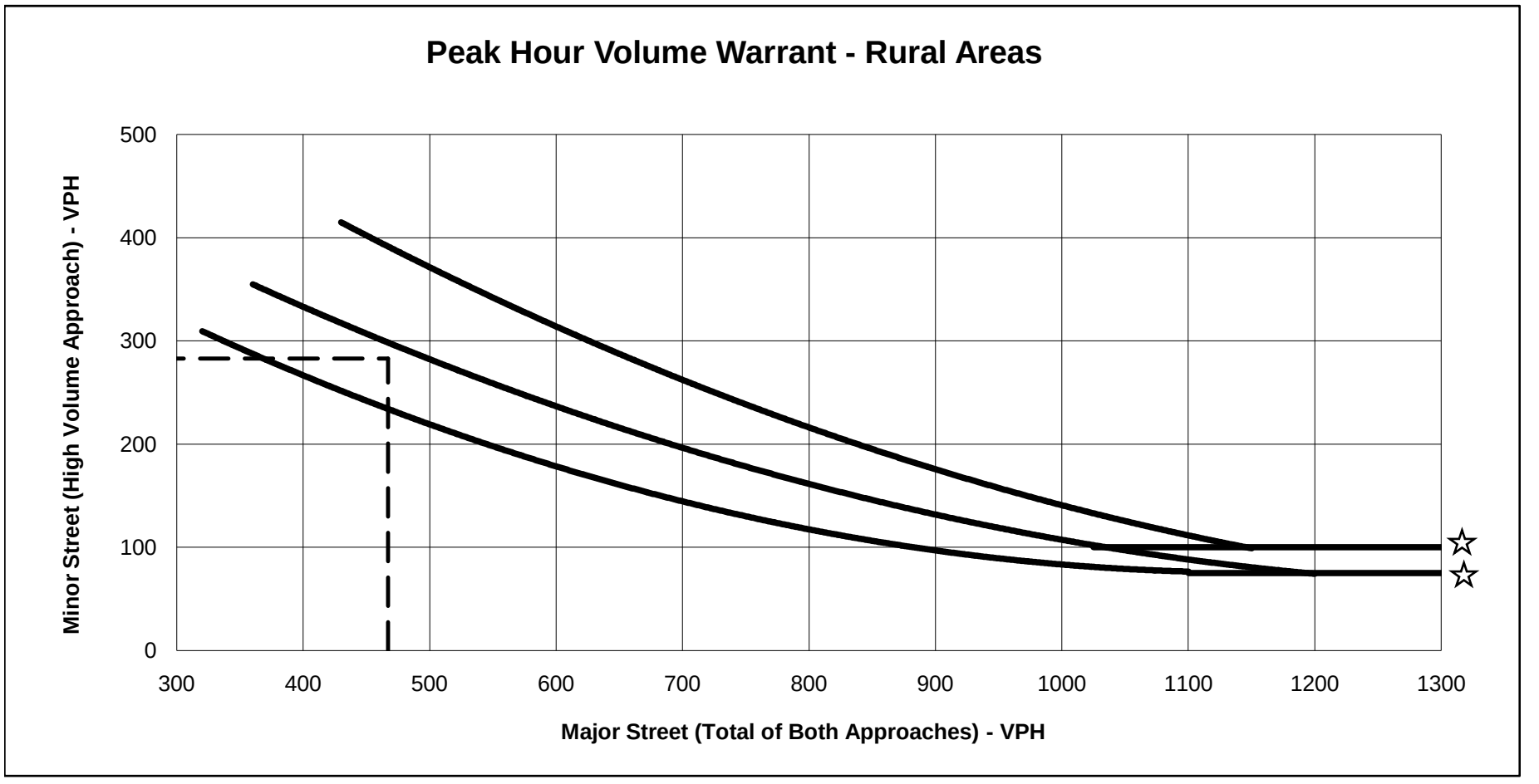


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Old Alturas Road/Old Oregon Trail
Scenario:	Existing Plus Project AM peak hour conditions
Minor St. Volume:	271
Major St. Volume:	547
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

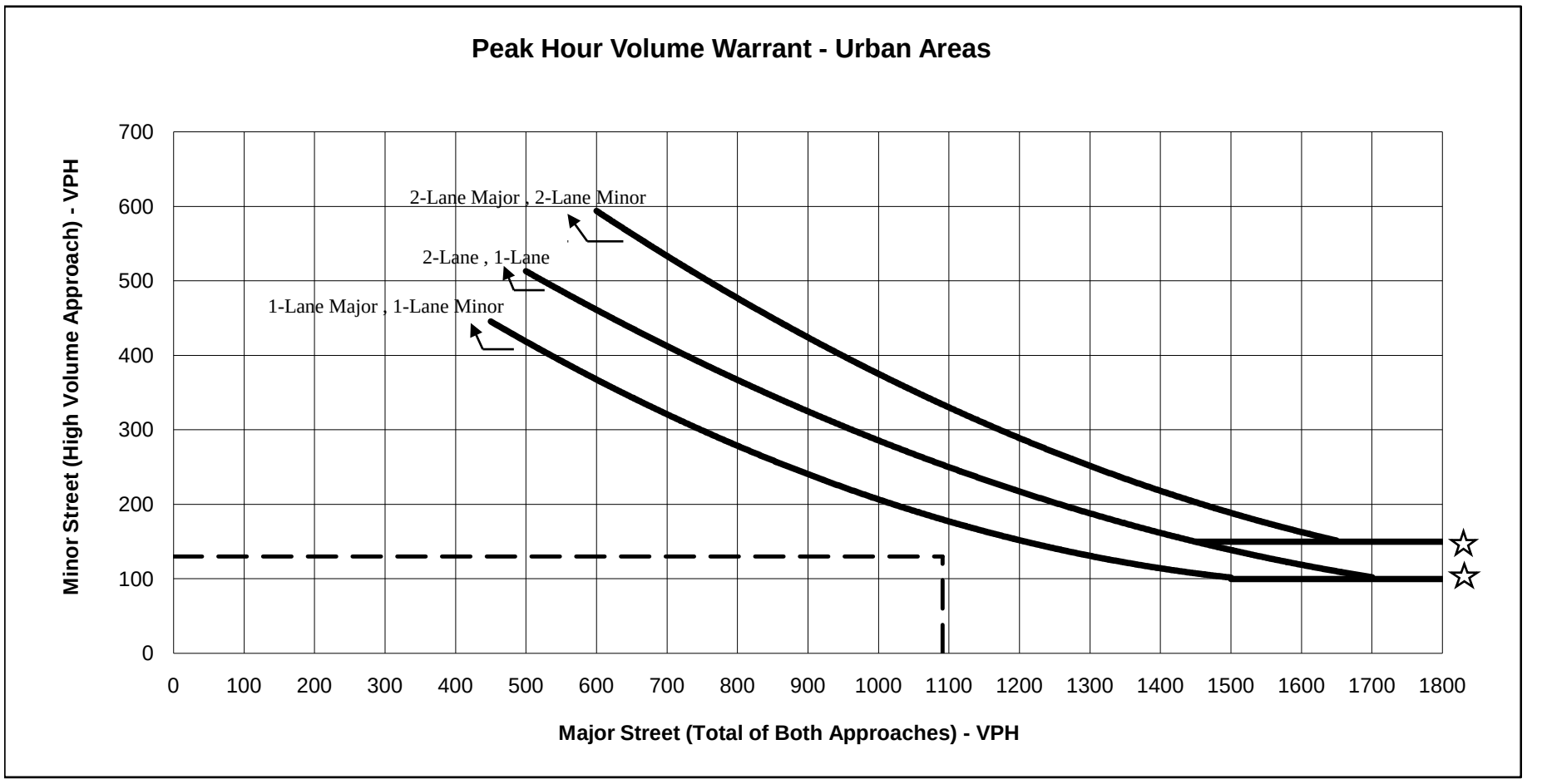


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Old Alturas Road/Old Oregon Trail
Scenario:	Existing Plus Project PM peak hour conditions
Minor St. Volume:	283
Major St. Volume:	467
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	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

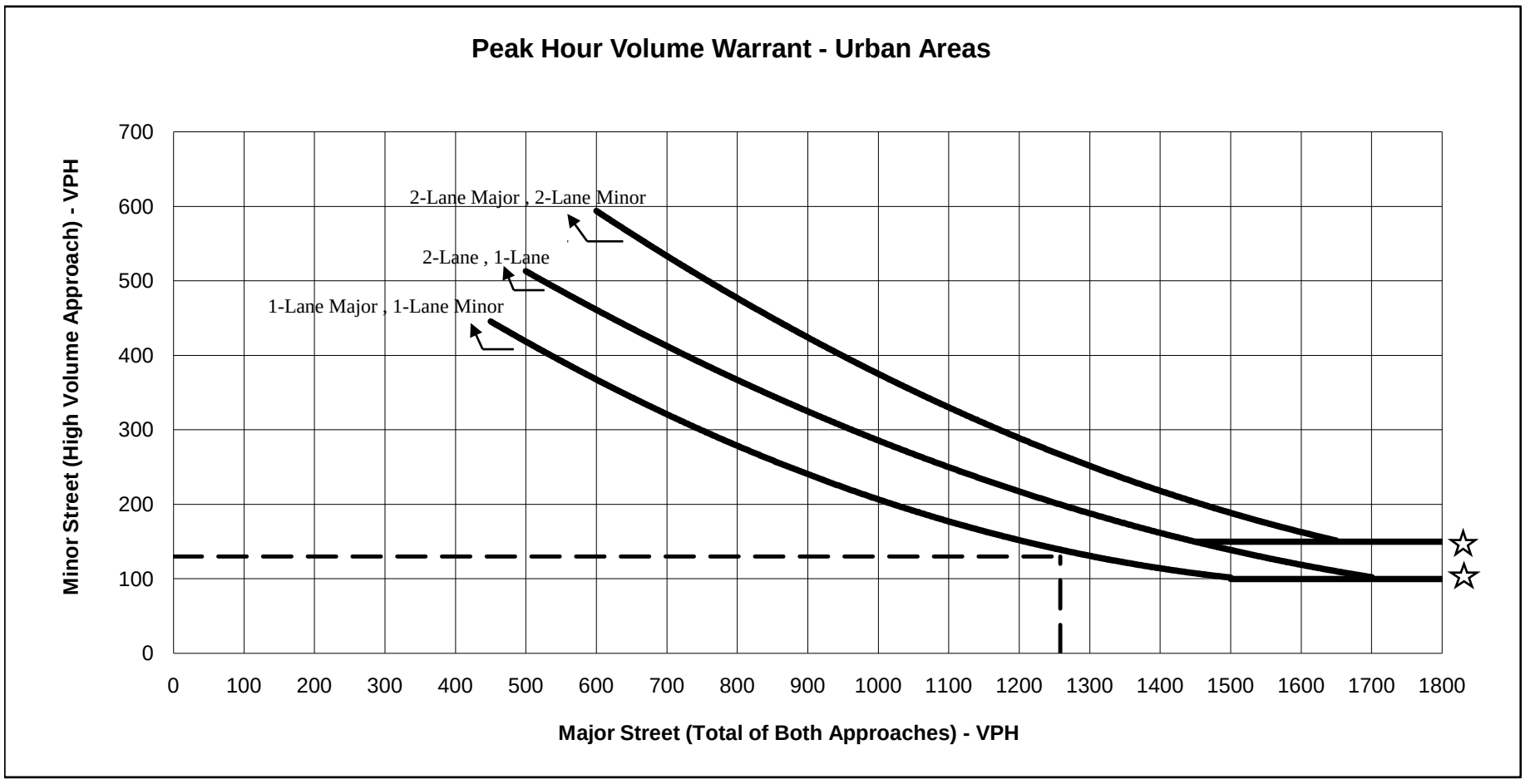


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Existing AM peak hour conditions
Minor St. Volume:	130
Major St. Volume:	1091
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

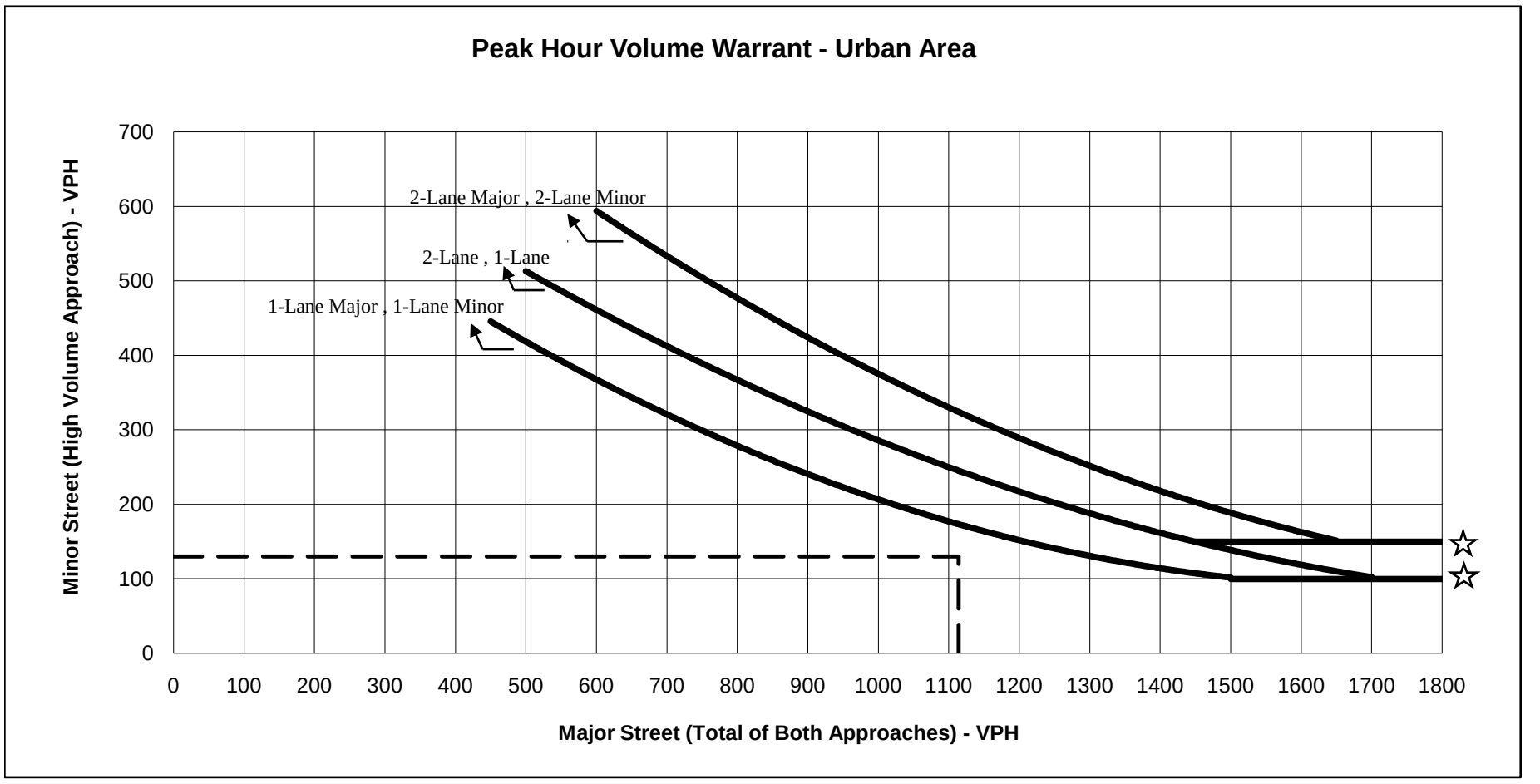


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Existing PM peak hour conditions
Minor St. Volume:	130
Major St. Volume:	1258
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

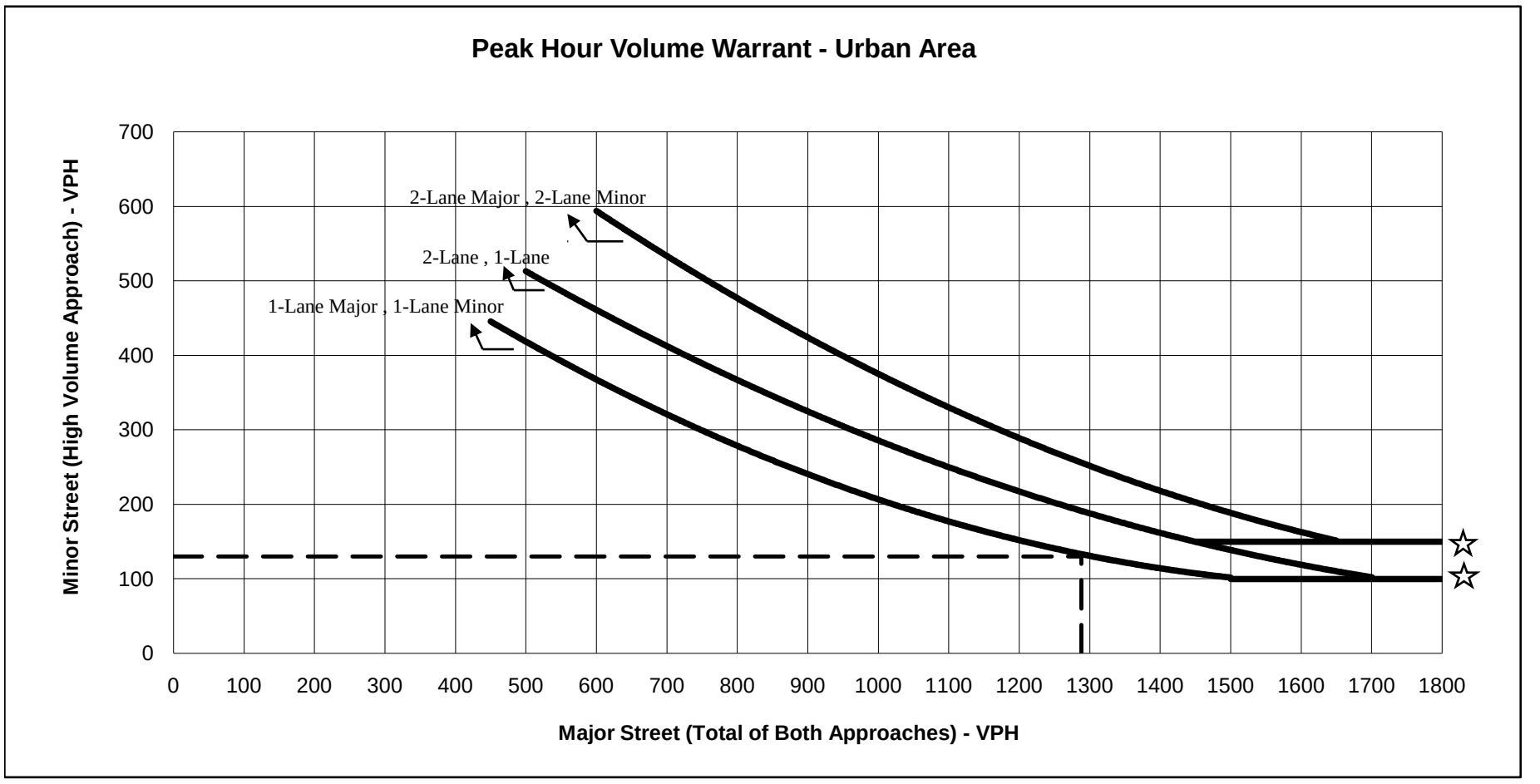


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Existing Plus Project AM peak hour conditions
Minor St. Volume:	130
Major St. Volume:	1114
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

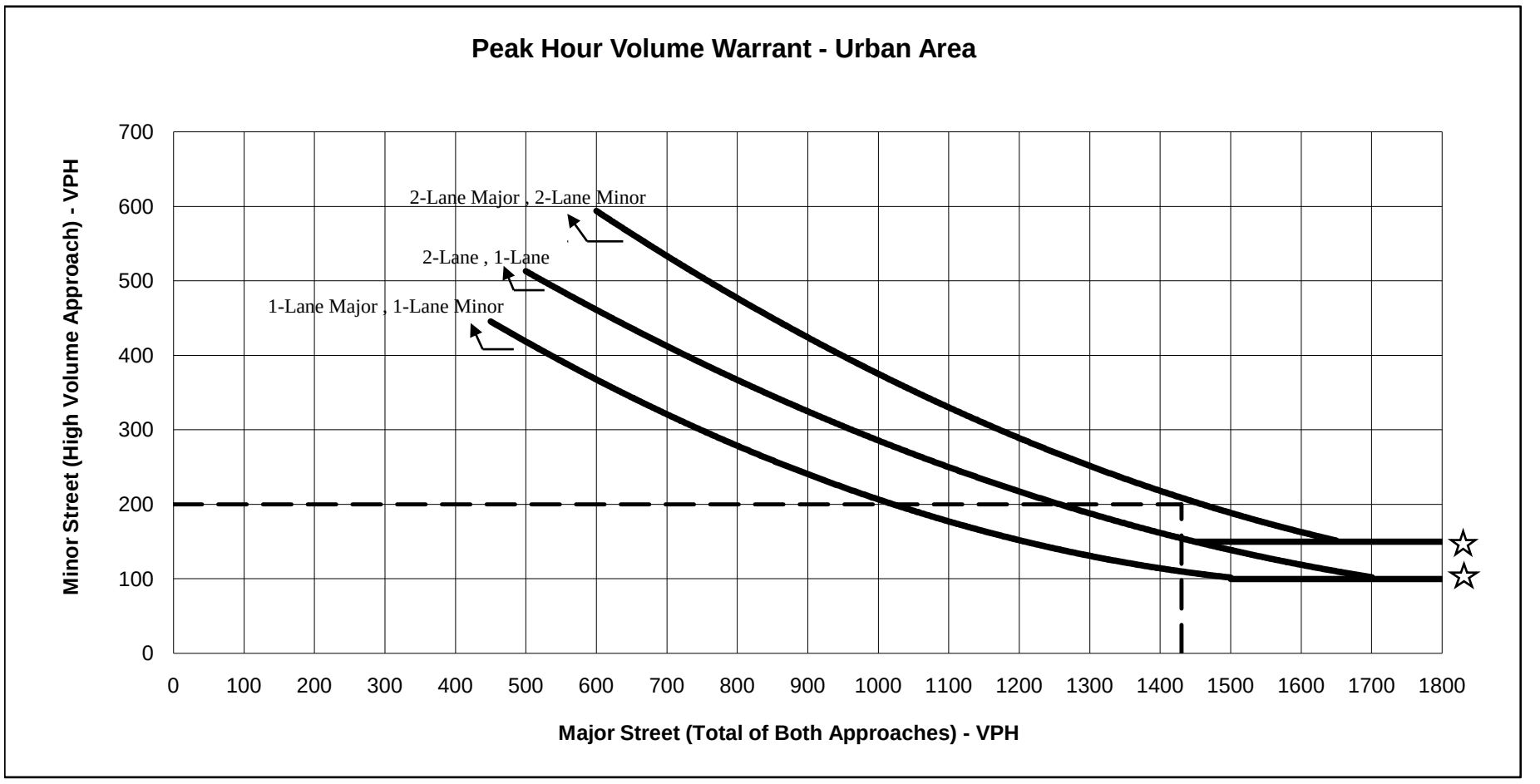


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Existing Plus Project PM peak hour conditions
Minor St. Volume:	130
Major St. Volume:	1288
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	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

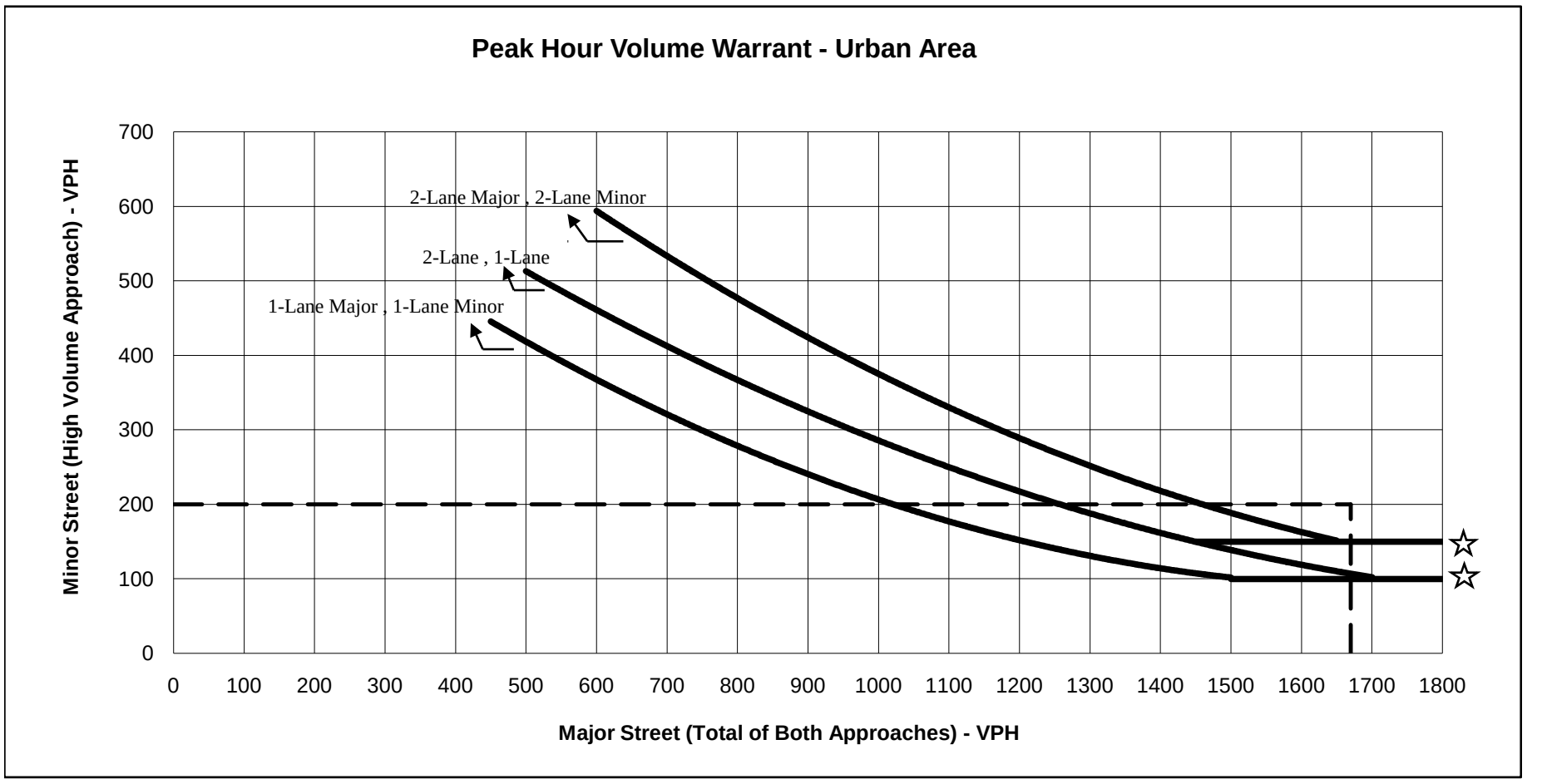


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Cumulative AM peak hour conditions
Minor St. Volume:	200
Major St. Volume:	1430
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	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

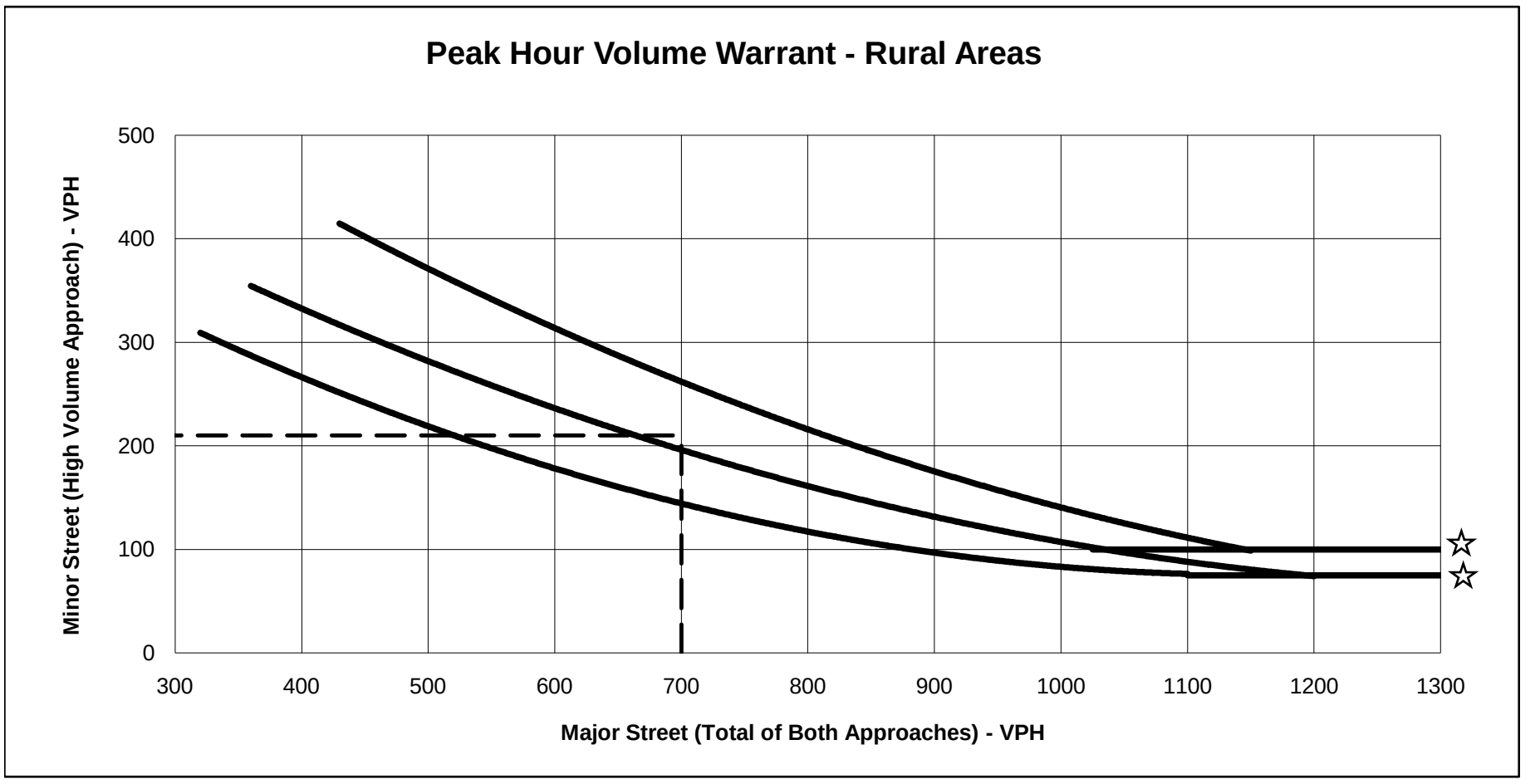


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Airport Road/SR 44 WB Ramps
Scenario:	Cumulative AM peak hour conditions
Minor St. Volume:	200
Major St. Volume:	1670
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

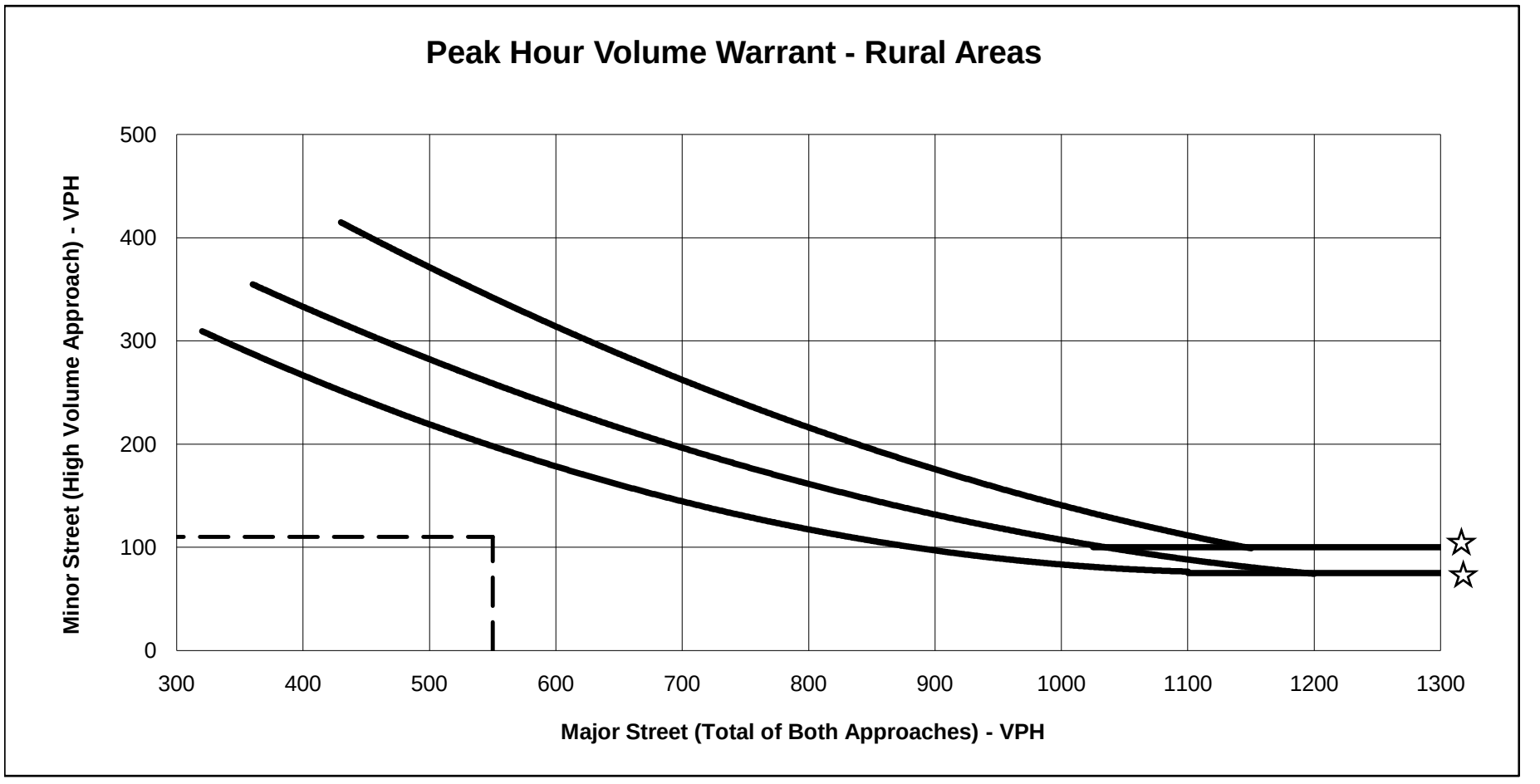


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Boyle Road/Deschutes Road
Scenario:	Cumulative AM peak hour conditions
Minor St. Volume:	210
Major St. Volume:	700
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

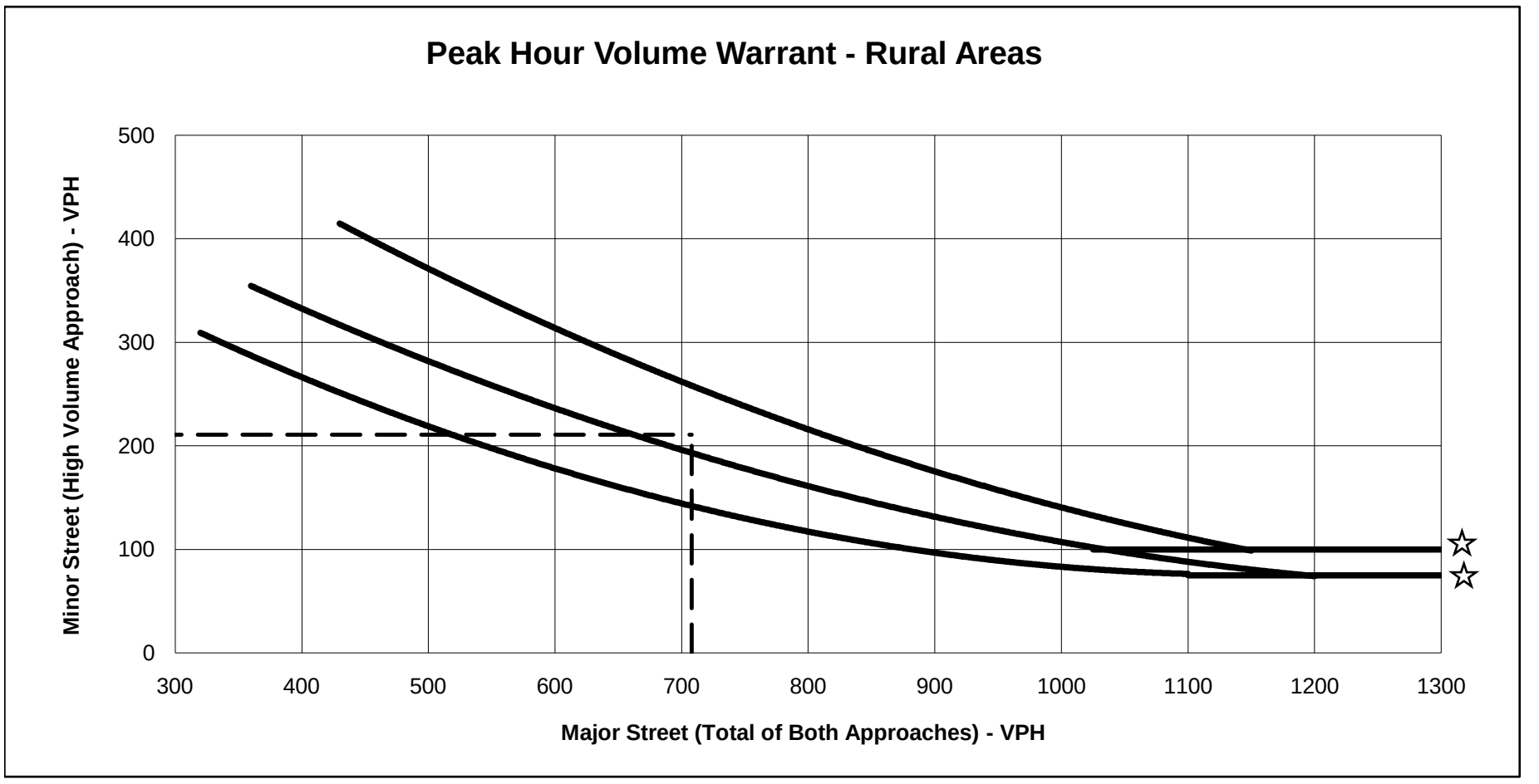


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Boyle Road/Deschutes Road
Scenario:	Cumulative PM peak hour conditions
Major St. Volume:	550
Minor St. Volume:	110
Warrant Met?:	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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

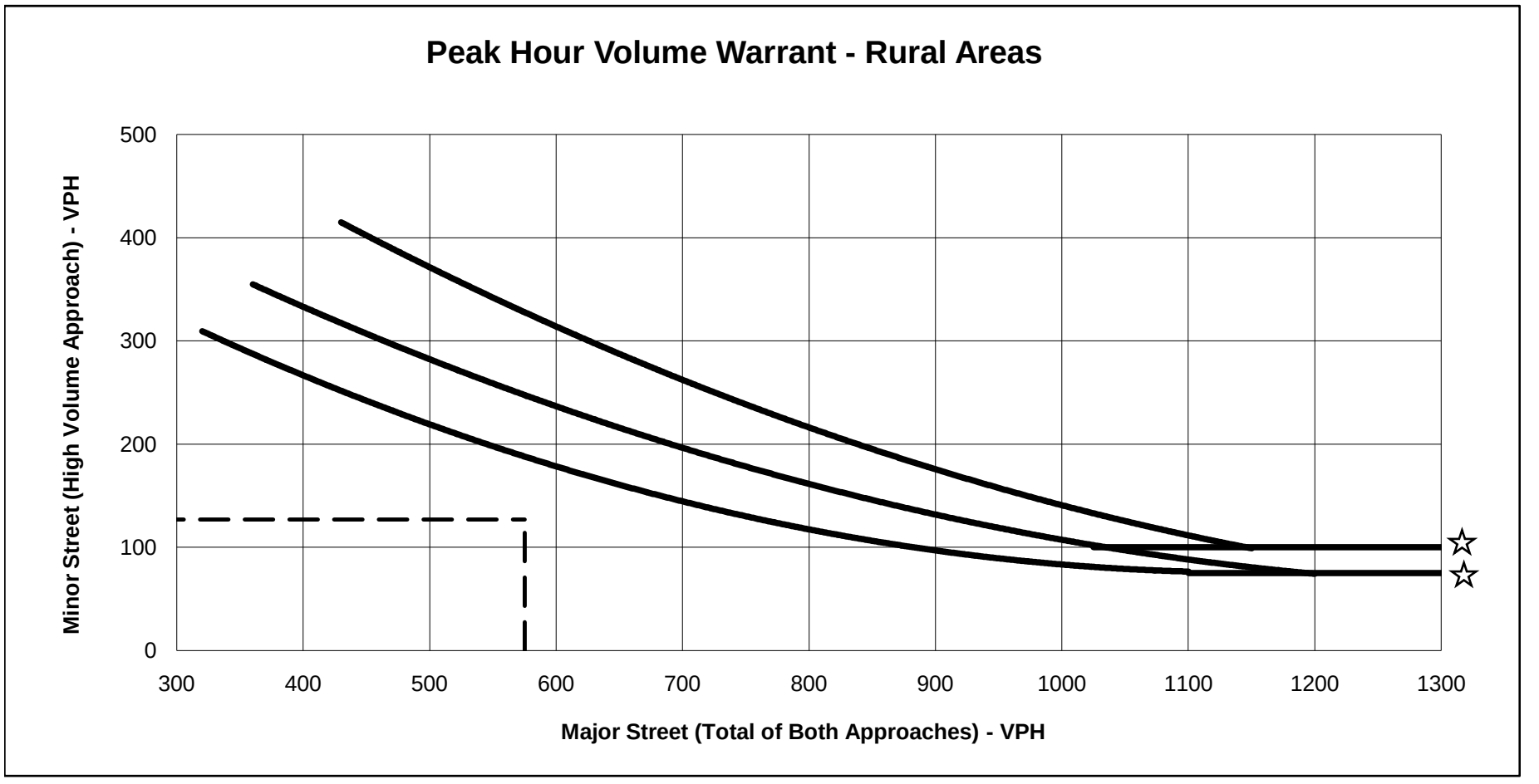


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Boyle Road/Deschutes Road
Scenario:	Cumulative Plus Project AM peak hour conditions
Minor St. Volume:	211
Major St. Volume:	708
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

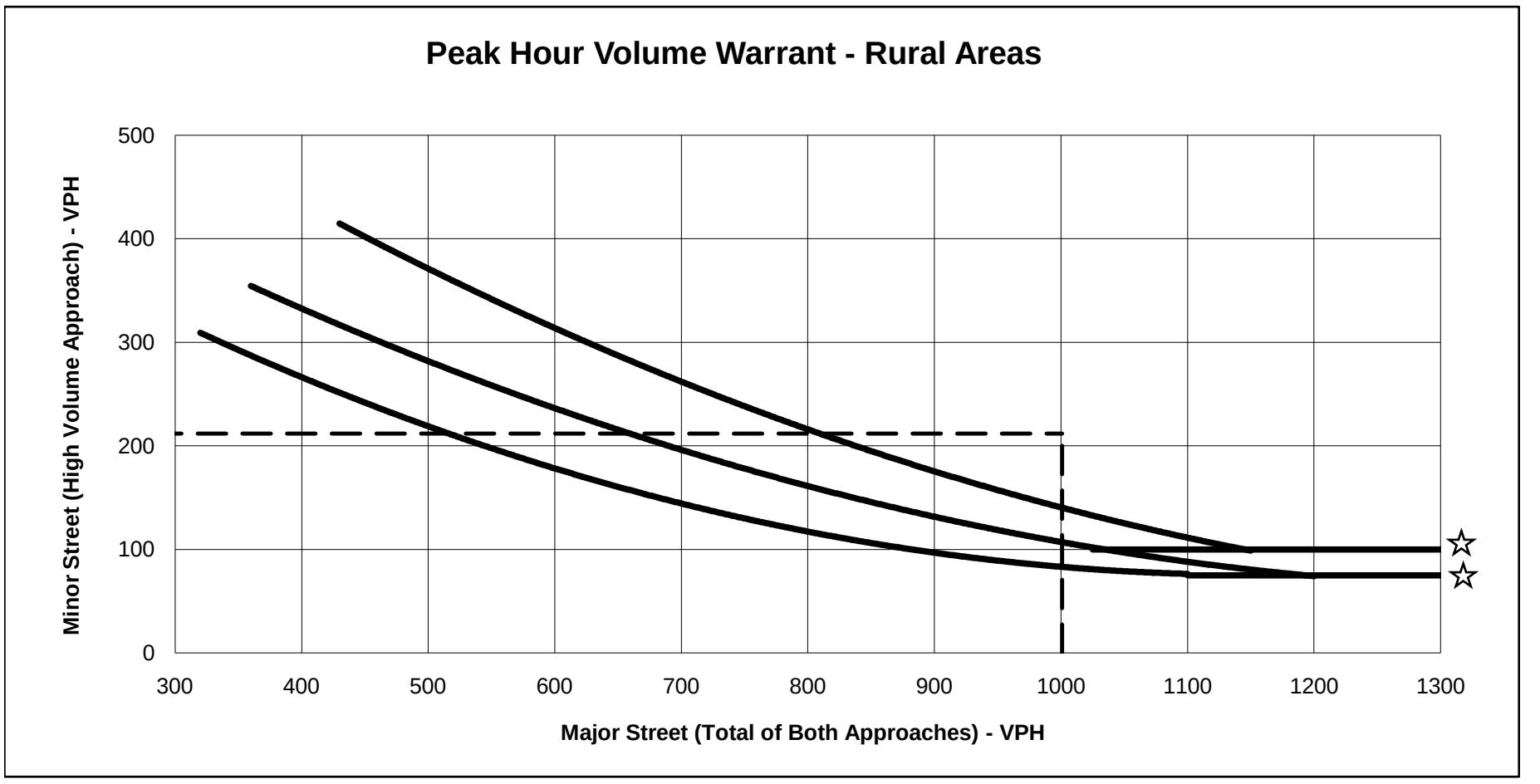


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Boyle Road/Deschutes Road
Scenario:	Cumulative Plus Project PM peak hour conditions
Major St. Volume:	575
Minor St. Volume:	127
Warrant Met?:	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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

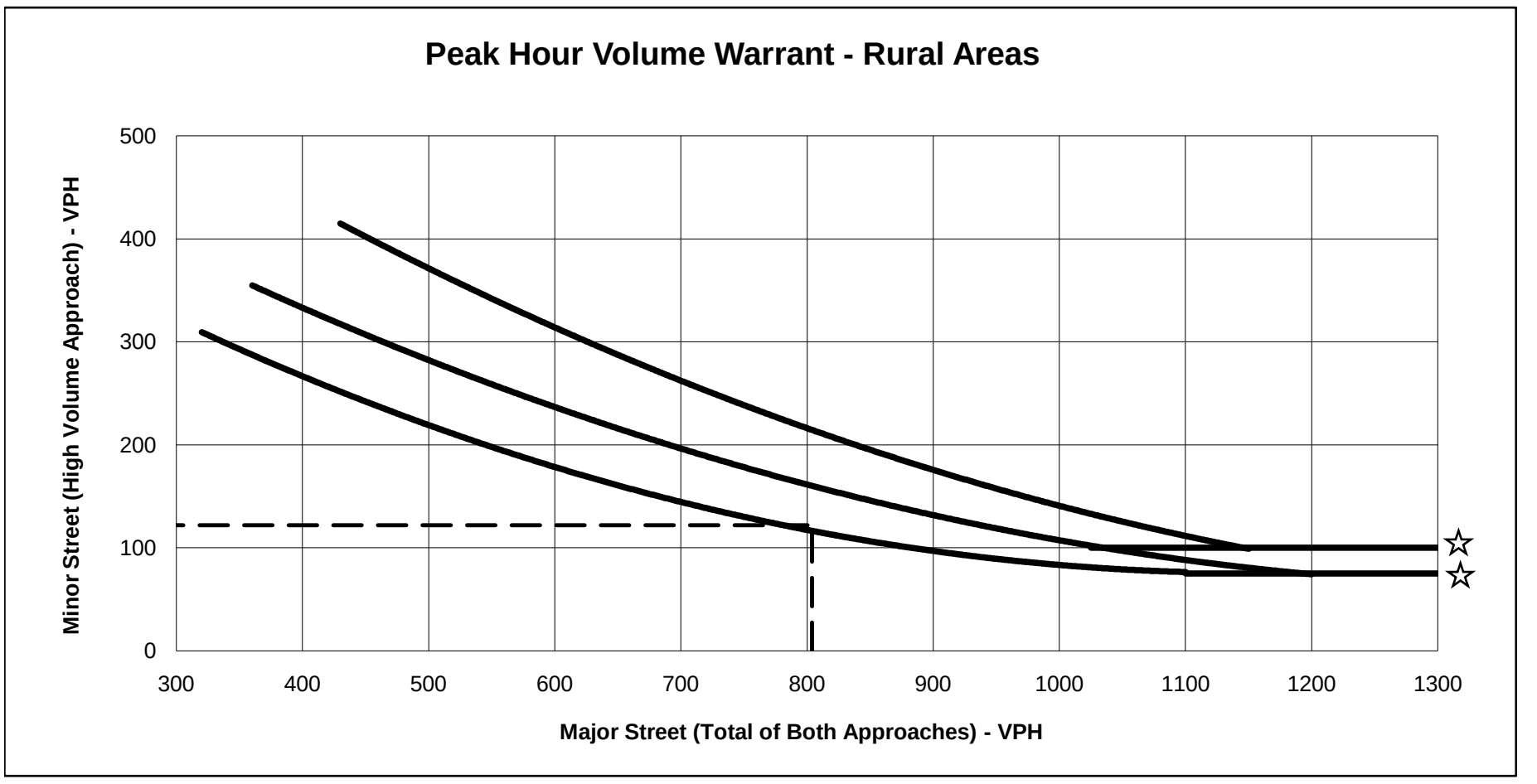


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Deschutes Road/Old Fourty Four
Scenario:	Existing AM peak hour conditions
Minor St. Volume:	212
Major St. Volume:	1001
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

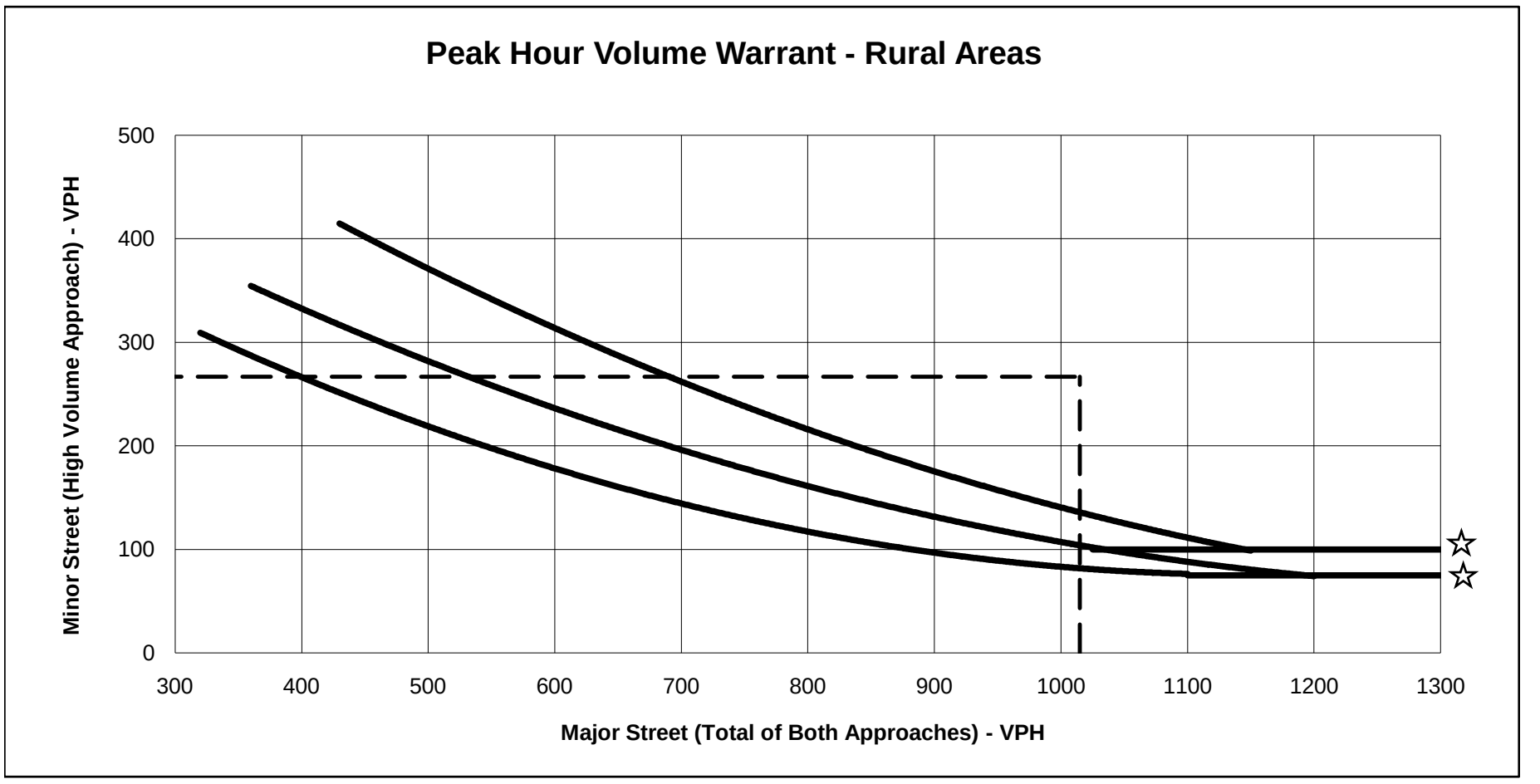


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Deschutes Road/Old Fourty Four
Scenario:	Existing PM peak hour conditions
Minor St. Volume:	122
Major St. Volume:	804
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

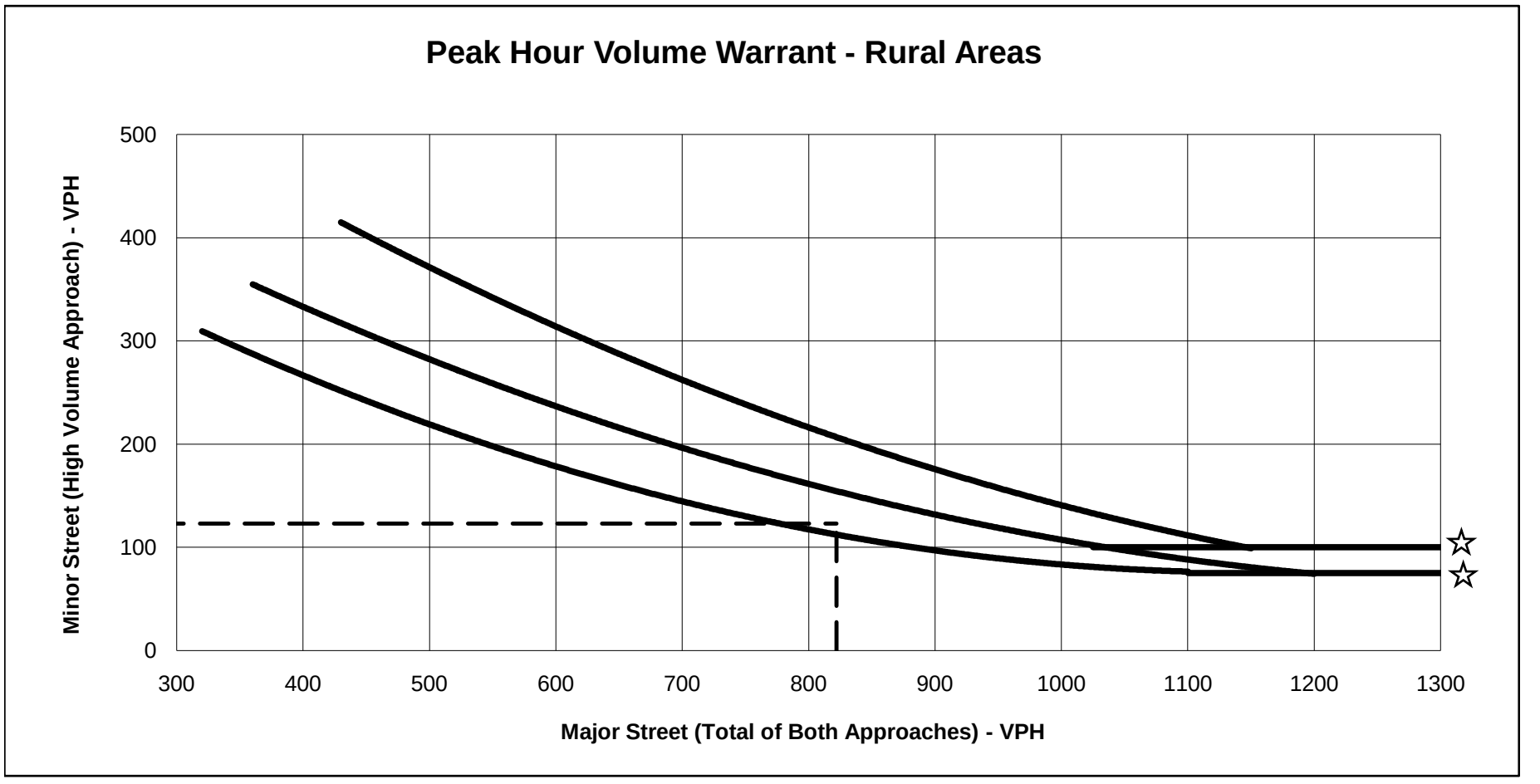


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Deschutes Road/Old Fourty Four
Scenario:	Existing Plus Project AM peak hour conditions
Minor St. Volume:	267
Major St. Volume:	1015
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
370	280				
400	270	460	297	430	410
500	215	500	290	500	380
600	185	600	230	600	310
700	140	700	198	700	265
800	115	800	170	800	210
900	99	900	125	900	180
1000	85	1000	105	1000	140
1100	75	1100	90	1100	110
1200	75	1200	75	1150	100
1300	75	1300	75	1300	100

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

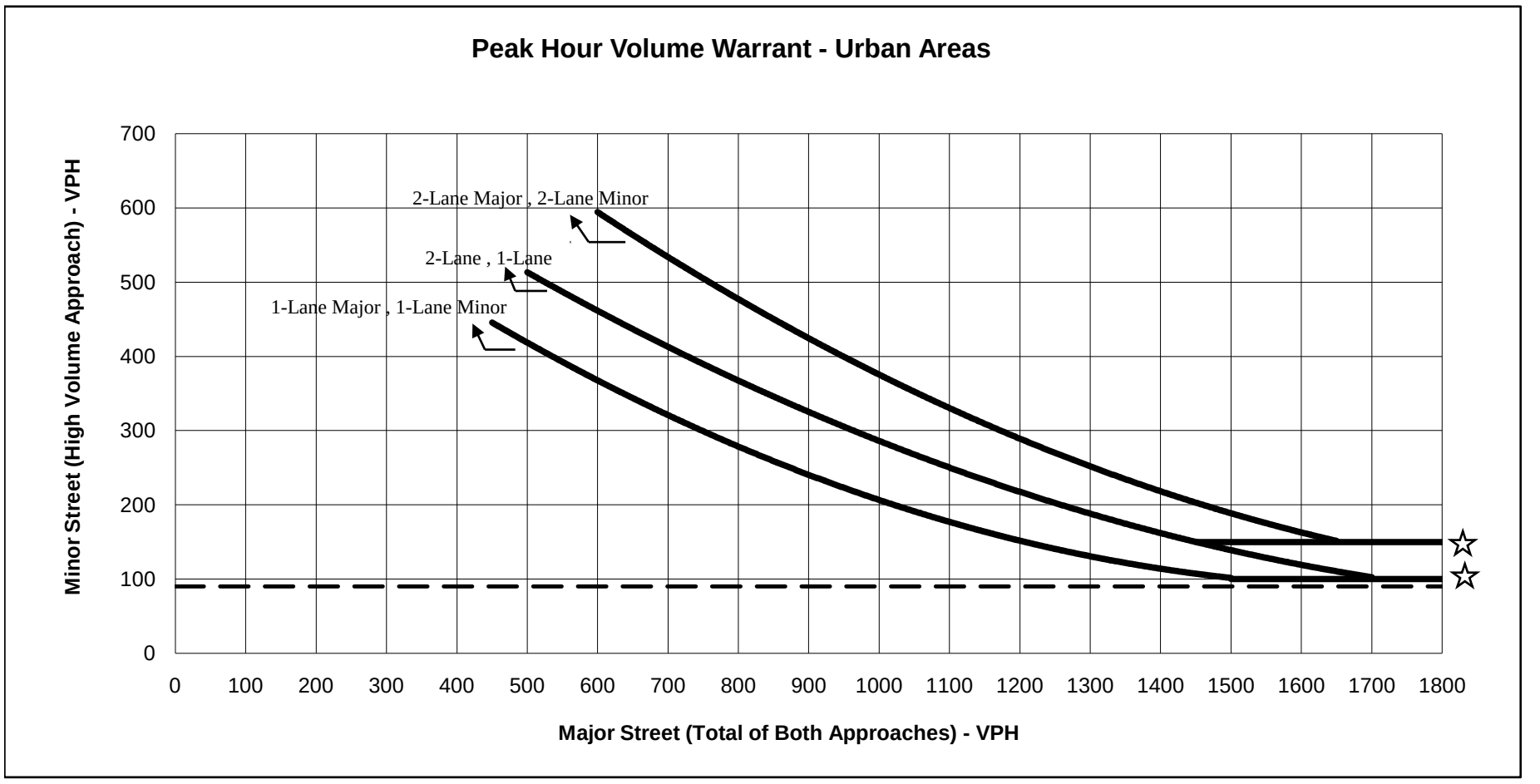


☆ NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Deschutes Road/Old Fourty Four
Scenario:	Existing Plus Project PM peak hour conditions
Minor St. Volume:	123
Major St. Volume:	822
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	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

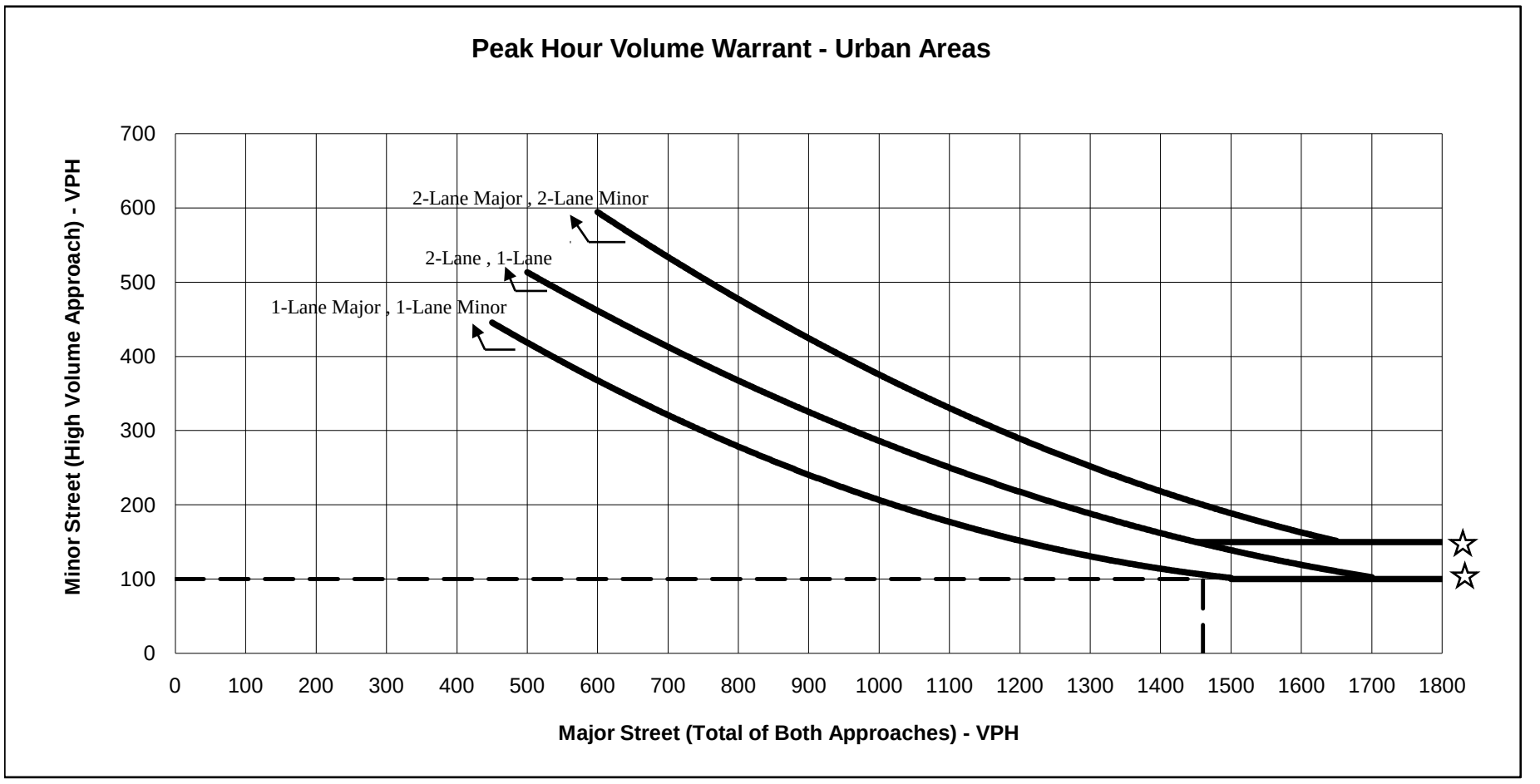


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	SR 44 WB Ramps/Deschutes Road
Scenario:	Cumulative AM peak hour conditions
Minor St. Volume:	90
Major St. Volume:	1840
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

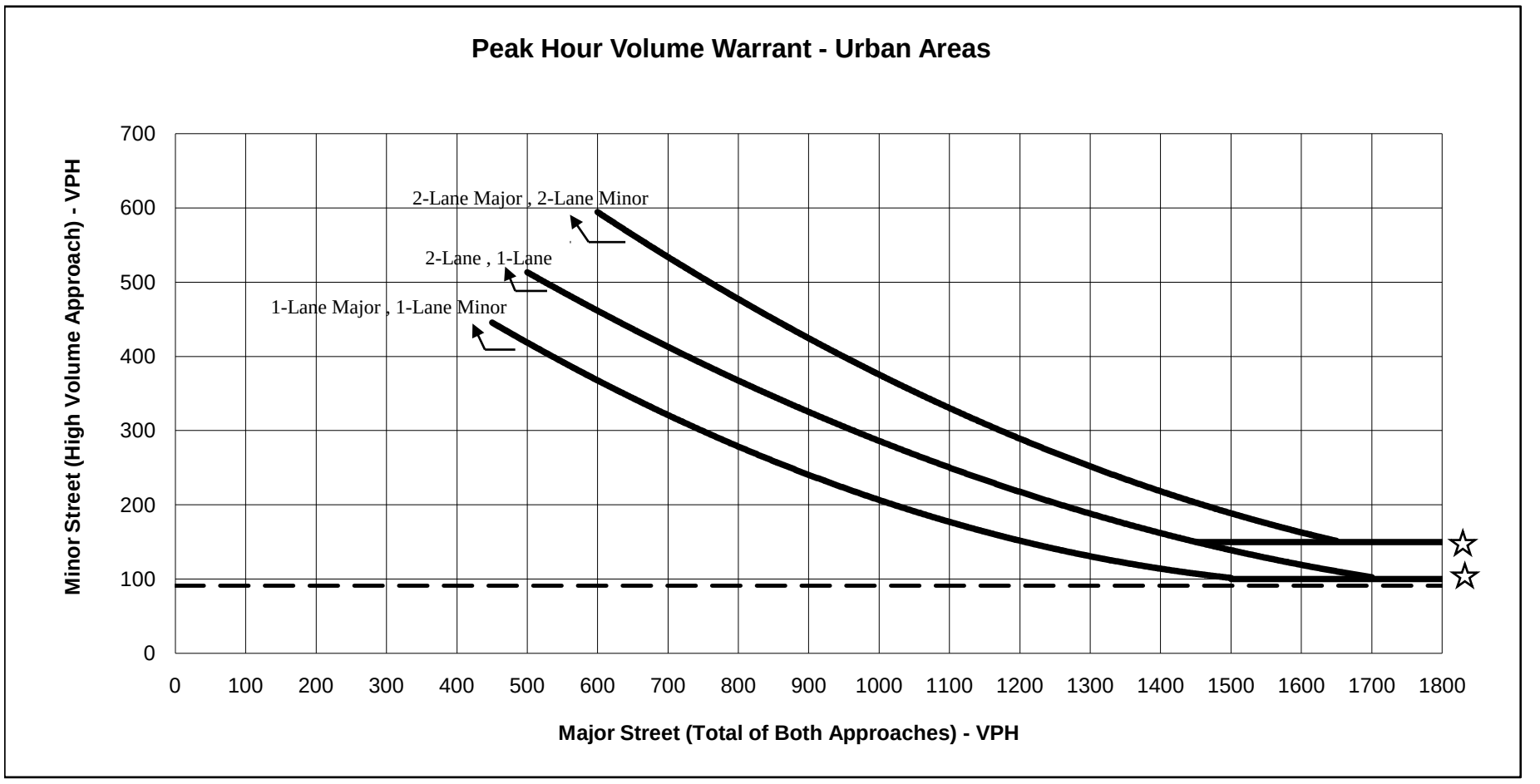


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	SR 44 WB Ramps/Deschutes Road
Scenario:	Cumulative PM peak hour conditions
Minor St. Volume:	100
Major St. Volume:	1460
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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*

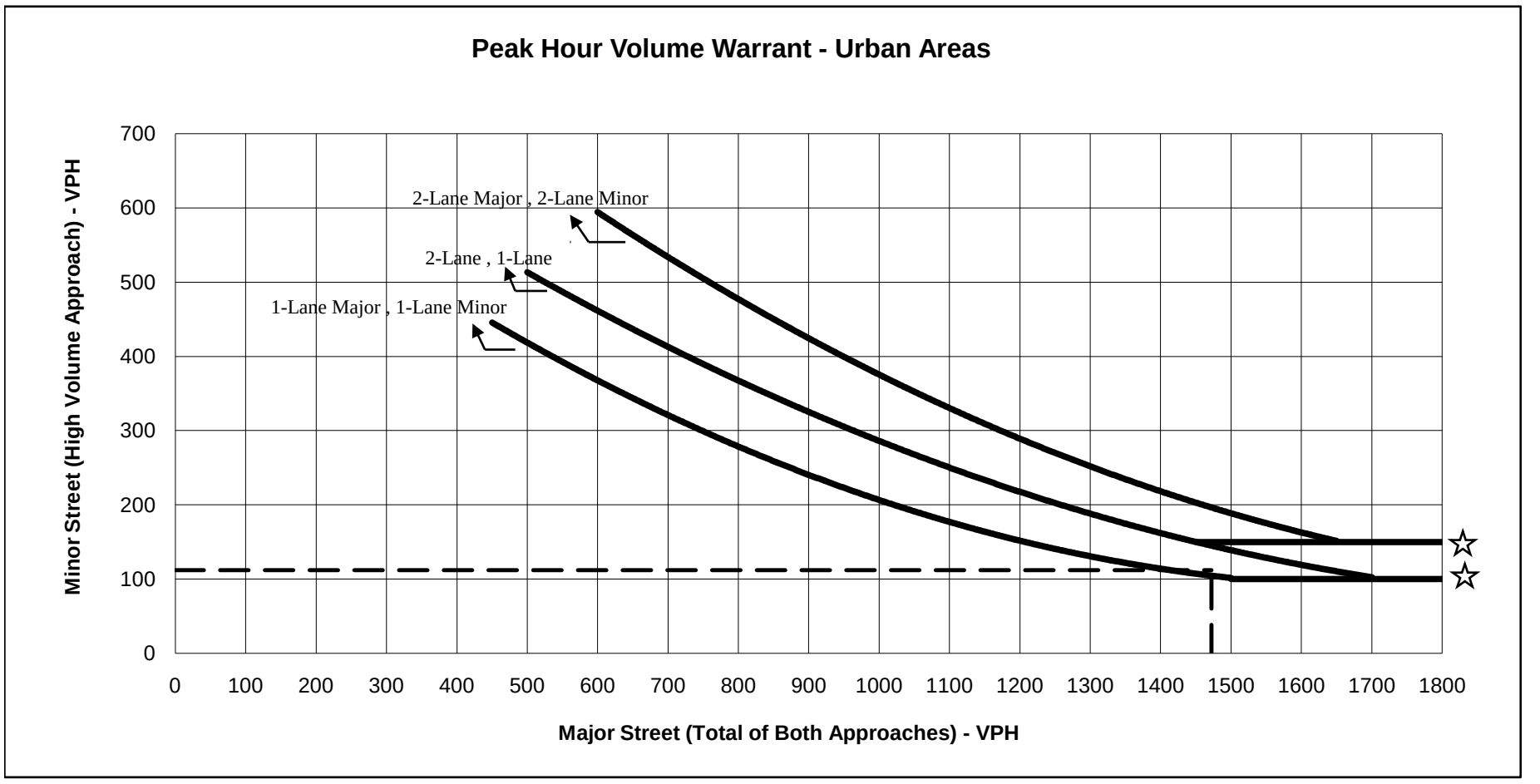


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	SR 44 WB Ramps/Deschutes Road
Scenario:	Cumulative Plus Project AM peak hour conditions
Minor St. Volume:	91
Major St. Volume:	1850
Warrant Met?:	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
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	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.

Intersection:	SR 44 WB Ramps/Deschutes Road
Scenario:	Cumulative Plus Project PM peak hour conditions
Minor St. Volume:	112
Major St. Volume:	1472
Warrant Met?:	No

APPENDIX A

SEVEN LAKES / STREET A INTERSECTION

EXHIBIT B

NOV. 2010

Scale 1"= 150'

$S_2 - J_2$
ENGINEERING, INC.
19032 Lahalah Way
Cottonwood, CA 96022
Phone (530) 347-5168
Fax (530) 347-0577
sdnelson@shasta.com

SHASTA COUNTY MODEL
Chatham Ranch
SRTA Travel Demand Model Project Trip Distribution